4D Study of Grain Growth in Armco Iron Using Laboratory X-ray Diffraction Contrast Tomography: Paper

Using a novel laboratory diffraction contrast tomography (LabDCT) technique, a non-destructive 4D study was conducted to investigate the evolution in 3D of the grain structure during grain growth in an Armco iron sample. The 3D grain morphology and the crystallographic orientations of more than 300 grains were determined at three temporal states during annealing. The correlation between growth of grains and grain orientation is explored. The results demonstrate the capability of the LabDCT technique to allow detailed studies of grain growth, and thereby provide the necessary 4D experimental evidence required for further understanding of grain growth.

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A method to characterize the roughness of 2-D line features: recrystallization boundaries

A method is presented, which allows quantification of the roughness of nonplanar boundaries of objects for which the neutral plane is not known. The method provides quantitative descriptions of both the local and global characteristics. How the method can be used to estimate the sizes of rough features and local curvatures is also presented. The potential of the method is illustrated by quantification of the roughness of two recrystallization boundaries in a pure Al specimen characterized by scanning electron microscopy.

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Analysis of bearing steel exposed to rolling contact fatigue

The objective of this work is to characterize fatigue damage in roller bearings under conditions of high load and slippage. A test rig constructed for rolling contact fatigue tests of rings is described, and test results are presented for rings taken from two spherical roller bearings. The preparation of the rings and the loading situation are explained. Test conditions are chosen with the aim of achieving pitting formation at the contacting surfaces. During testing the contact pressure, torque and the rotational speed are monitored and recorded. After testing the tested rings have been characterized using X-ray tomography and scanning electron microscopy. The observations confirm that rolling contact fatigue testing at high loads leads to pitting failure at the contacting surfaces. The pitting mostly appears on one side of the contact, attributed to a non-uniform contact pressure in the axial direction.

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Boundary migration in a 3D deformed microstructure inside an opaque sample

How boundaries surrounding recrystallization grains migrate through the 3D network of dislocation boundaries in deformed crystalline materials is unknown and critical for the resulting recrystallized crystalline materials. Using X-ray Laue diffraction microscopy, we show for the first time the migration pattern of a typical recrystallization boundary through a well-characterized deformation matrix. The data provide a unique possibility to investigate effects of both boundary misorientation and plane normal on the migration, information which cannot be accessed with any other techniques. The results show that neither of these two parameters can explain the observed migration behavior. Instead we suggest that the subdivision of the deformed microstructure ahead of the boundary plays the dominant role. The present experimental observations challenge the assumptions of existing recrystallization theories, and set the stage for determination of mobilities of recrystallization boundaries.
Direct observation of nucleation in the bulk of an opaque sample

Remarkably little is known about the physical phenomena leading to nucleation of new perfect crystals within deformed metals during annealing, in particular how and where volumes with nearly perfect lattices evolve from structures filled with dislocations, and how local variations at the micrometer length scale affect this nucleation process. We present here the first experimental measurements that relate directly nucleation of recrystallization to the local deformation microstructure in the bulk of a sample of cold rolled aluminum, further deformed locally by a hardness indentation. White beam differential aperture X-ray microscopy is used for the measurements, allowing us to map a selected gauge volume in the bulk of the sample in the deformed state, then anneal the sample and map the exact same gauge volume in the annealed state. It is found that nuclei develop at sites of high stored energy and they have crystallographic orientations from those present in the deformed state. Accordingly we suggest that for each nucleus the embryonic volume arises from a structural element contained within the voxels identified with the same orientation. Possible nucleation mechanisms are discussed and the growth potentials of the nuclei are also analyzed and discussed.

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Fabricating interstitial-free steel with simultaneous high strength and good ductility with homogeneous layer and lamella structure

Annealed interstitial-free steel (IF steel) and deformed IF steel sheets were stacked alternatively into multi-layers to produce laminated IF steel through thermal-mechanical processing. After proper processing, a yield strength of 500 MPa, an ultimate tensile strength of 600 MPa (comparable to cold rolled one) and a uniform elongation around 17% can be realized. Microstructural observation by electron back-scatter diffraction revealed a characteristic hierarchical layer + heterogeneous lamella structure, namely L2 structure. The reasons for the good mechanical properties were discussed.
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Quantification of deformation microstructure at ultra-low tensile strain in pure Al prepared by spark plasma sintering

A sample of Al with grain size of 5.1 μm, prepared by spark plasma sintering, was deformed to a nominal strain of 0.35% under exposure to X-ray synchrotron radiation, allowing spatially resolved orientation measurements to be made during loading by use of a micro-diffraction technique. A significant heterogeneity in the deformation pattern between grains was observed. A statistical analysis shows that grain deformation depends more on crystallographic orientation than on grain size, with grains with tensile axis lying towards the <001>-<101> border of the unit triangle tending to undergo larger deformation. Other possible reasons for the different deformation behaviour between individual grains are briefly discussed.
Roughness of grain boundaries in partly recrystallized aluminum
The roughness of grain boundaries in partly recrystallized microstructures has been quantified. Effects of material and processing parameters on the roughening behavior have been statistically investigated. Parameters are sample purity, deformation strain and boundary migration direction in two cold rolled aluminum samples. The results show that particle pinning is not the main reason accounting for recrystallization boundary roughness in the present samples. The roughness is however shown to relate to the deformation microstructure and possible effects of migration rate are discussed.
Switches and crossings are an integral part of any railway network. Plastic deformation associated with wear and rolling contact fatigue due to repeated passage of trains cause severe damage leading to the formation of surface and subsurface cracks which ultimately may result in rail failure. Knowledge of the internal stress distribution adds to the understanding of crack propagation and may thus help to prevent catastrophic rail failures. In this work, the residual strains inside the bulk of a damaged nose of a manganese railway crossing that was in service for five years has been investigated by using differential aperture synchrotron X-ray diffraction. The main purpose of this paper is to describe how this method allows non-destructive measurement of residual strains in selected local volumes in the bulk of the rail. Measurements were conducted on the transverse surface at a position about 6.5 mm from the rail running surface of a crossing nose. The results revealed the presence of significant compressive residual strains along the running direction of the rail.
Ultra-low-angle boundary networks within recrystallizing grains

We present direct evidence of a network of well-defined ultra-low-angle boundaries in bulk recrystallizing grains of 99.5% pure aluminium (AA1050) by means of a new, three-dimensional X-ray mapping technique; dark-field X-ray microscopy. These boundaries separate lattice orientation differences on the order of 0.05° and thus subdivide the recrystallizing grain into 2–7 μm wide domains. During further annealing the orientation differences decrease and the overall structure become more uniform while the network remains. It is observed that the morphology of the grain boundaries surrounding the recrystallizing grains relate to the intragranular network and effects hereof on the boundary migration is discussed.
3D Characterization of Recrystallization Boundaries

A three-dimensional (3D) volume containing a recrystallizing grain and a deformed matrix in a partially recrystallized pure aluminum was characterized using the 3D electron backscattering diffraction technique. The 3D shape of a recrystallizing boundary, separating the recrystallizing grain and deformed matrix, was reconstructed. The result shows a very complex structure containing several large protrusions and retrusions. A correlation between the protrusions/retrusions and the deformed matrix in front of the boundary shows that the deformed microstructure has a very strong influence on the formation of protrusions/retrusions.

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Crystallographic Analysis of Nucleation at Hardness Indentations in High-Purity Aluminum

Nucleation at Vickers hardness indentations has been studied in high-purity aluminum cold-rolled 12 pct. Electron channeling contrast was used to measure the size of the indentations and to detect nuclei, while electron backscattering diffraction was used to determine crystallographic orientations. It is found that indentations are preferential nucleation sites. The crystallographic orientations of the deformed grains affect the hardness and the nucleation potentials at the indentations. Higher hardness gives increased nucleation probabilities. Orientation relationships between nuclei developed at different indentations within one original grain are analyzed and it is found that the orientation distribution of the nuclei is far from random. It is suggested that it relates to the orientations present near the indentation tips which in turn depend on the orientation of the selected grain in which they form. Finally, possible nucleation mechanisms are briefly discussed.

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Microstructural Analysis of Orientation-Dependent Recovery and Recrystallization in a Modified 9Cr-1Mo Steel Deformed by Compression at a High Strain Rate

The evolution of the microstructure and texture during annealing of a modified ferritic/martensitic 9Cr-1Mo steel compressed by dynamic plastic deformation (DPD) to a strain of 2.3 has been investigated using transmission electron microscopy and electron backscatter diffraction. It is found that the duplex \( \{111\} + \{100\} \) fiber texture formed by DPD is transformed during annealing to a dominant \( \{111\} \) fiber texture, and that crystallites of the \( \{111\} \) component have an advantage during both nucleation and growth. Detailed characterization of the microstructural morphology, and estimation of the stored energies in \( \{111\} \) - and \( \{100\} \)-oriented regions in deformed and annealed samples, as well as investigations of the growth of recrystallizing grains, are used to analyze the annealing behavior. It is concluded that recrystallization in the given material occurs by a combination of oriented nucleation and oriented growth.

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Nucleation of recrystallization at selected sites in deformed fcc metals

The objective of this thesis is to explore nucleation of recrystallization at selected sites in selected face-centered-cubic (FCC) metals, namely cold rolled columnar-grained nickel and high purity aluminum further deformed by indenting. Various techniques, including optical microscopy, electron backscattered diffraction (EBSD), electron channeling contrast (ECC) and synchrotron X-ray technique, differential-aperture X-ray microscopy (DAXM), were used to characterize the microstructures, to explore nucleation sites, orientation relationships between nuclei and deformed microstructures, and nucleation mechanisms. In the cold rolled nickel samples, the preference of triple junctions (TJs) and grain boundaries (GBs) as nucleation sites is observed. The majorities of the nuclei have the same orientations as the surrounding matrix or are twin-related to a surrounding deformed grain. Only a few nuclei are observed with orientations different from the surrounding matrix. Hardness measurements at TJs in the deformed sample indicate a weak correlation between the difference in hardness among the three grains at the TJs and the potentials of the junctions to form nuclei: the higher the difference, the more likely is nucleation. In the weakly rolled and indented aluminum samples, it is found that hardness indentations lead to large orientation rotations near indentation tips. In initial grains of different crystallographic orientations, the grains with higher stored energy (SE) in the rolled microstructures have higher average hardness values and higher nucleation probabilities. In general, indentations with higher hardness values have higher nucleation potentials. The orientations of the nuclei from different indentations in a given grain are observed not to be randomly distributed, but clustered in limited orientation spaces. The orientation spread observed near the indentation tips in the deformed state covers the orientations of the nuclei observed in the annealed state. Whereas the above results are obtained by the EBSD technique and thus are 2D observation, the nucleation at hardness indentations is also investigated non-destructively by the DAXM technique. By first characterizing the deformation microstructure within a selected gauge volume near a hardness indentation, then annealing the sample and measuring the same volume again, nucleation is directly correlated to the deformation microstructures in the bulk of the sample. It is found that the nuclei evolve from embryonic volumes at areas of high SE below the surface and develop because of an advantage of fast migrating boundaries surrounding the initial embryonic volumes. All nuclei have crystallographic orientations as those present within the embryonic volumes in the deformed state. It is further suggested that boundaries between nuclei and the deformed matrix of less than 5° hinder subsequent growth of the nuclei. For all the observed cases, it is suggested that the nucleation mechanism may be strain induced boundary migration (SIBM), but the boundaries are not those conventionally considered, namely original grain boundaries, but are strain induced dislocation boundaries.
Perspectives on Materials Science in 3D

Materials characterization in 3D has opened a new era in materials science, which is discussed in this paper. The original motivations and visions behind the development of one of the new 3D techniques, namely the three dimensional x-ray diffraction (3DXRD) method, are presented and the route to its implementation is described. The present status of materials science in 3D is illustrated by examples related to recrystallization. Finally, challenges and suggestions for the future success for 3D Materials Science relating to hardware evolution, data analysis, data exchange and modeling are discussed.

Quantitative Characterization of Boundary Roughness in Metals

The boundary migration during recrystallization is by nature a heterogeneous process and local structural variations form on recrystallization boundaries, as revealed from modern techniques such as synchrotron X-rays and advanced electron microscopy. The local structural variations, in the form of protrusions and retrusions, can provide a dragging/driving force due to the local boundary curvature and affect the further migration of recrystallization boundaries through the deformed matrix. In order to develop new understandings and models for boundary migration that take the heterogeneous local structural aspects into account, a detailed characterization is essential of partly recrystallized microstructures focusing on the local shapes of the boundaries, in particular on whether protrusions and retrusions are formed or not. Quantification of the “amount” of boundary roughness in the form of protrusions and retrusions is of importance for statistical investigations into the factors that potentially influence the recrystallization boundary roughening. A method is developed for quantitative characterization of 2-D line features. The area integral invariant (AII) is employed as a morphological variable to obtain information of local structural variations such as protrusions and retrusions formed on recrystallization boundaries. The AII value is direction-independent allowing unbiased characterization of morphological irregularities with both closed and non-closed boundary profiles. The length scale at which the rough features are characterized is determined by a parameter termed sampling radius used to measure the AII values. A number of roughness parameters are developed based on the AII dataset for a boundary or boundary segment, whose local morphological characteristics are represented by individual AII value acquired along the boundary or boundary segment. With the quantified boundary roughness at two length scales: 1 μm and 3 μm, the roughening behaviors of a large number of recrystallization boundaries are statistically analyzed and the effects of several parameters: materials purity, deformation strain, annealing temperature and boundary alignment direction, are evaluated. It is revealed that recrystallization boundaries in general are rough and the roughening behaviors of recrystallization boundaries are affected by the investigated parameters, more significantly at the length scale of 1 μm. It is found that the higher roughness is often associated with the higher migrating rates of recrystallization boundaries. A new method is presented to quantitatively characterize the morphology of graphite nodules in cast iron, as an extended application of the AII method to characterize the 2-D line features. This method develops a morphological variable “dispersion” to obtain information about local morphological characteristics that is subsequently merged into a parameter termed dispersion index, to represent the nodule’s morphology as a whole. The potential of the method is validated by quantifying the morphology of graphite nodules with complicated shape and by measuring the nodularity of an image with many graphite nodules.
A phase-field simulation study of irregular grain boundary migration during recrystallization

We present simulation results based on a phase-field model that describes the migration of recrystallization boundaries into spatially varying deformation energy fields. Energy fields with 2-dimensional variations representing 2 sets of dislocation boundaries lying at equal, but opposite, angles to the moving boundary are considered. The simulations show that the shape and overall migration rate of the recrystallization front is considerably affected by spatial variations in the deformation microstructure. It is seen that, depending on characteristics of the variations in the deformation microstructure, highly asymmetrical protrusions and retrusions can develop on the migrating recrystallization front resulting in a migration velocity considerably larger than that expected from standard recrystallization models. It is also seen that, when the wavelength of the variations in a deformation microstructure along the grain boundary is larger than the wavelength of the variations in the direction of migration, parts of the boundary show a stop-and-go type of migration, resulting in a lower overall migration rate. These simulations thus reproduce and explain many of the typical features observed in recrystallization experiments. They give new insights in the way deformation microstructures can affect the migration behavior of recrystallization boundaries and can lead to a stop-and-go type of migration of the recrystallization boundary even in pure materials.
Boundary Fractal Analysis of Two Cube-oriented Grains in Partly Recrystallized Copper

The protrusions and retrusions observed on the recrystallizing boundaries affect the migration kinetics during recrystallization. Characterization of the boundary roughness is necessary in order to evaluate their effects. This roughness has a structure that can be characterized by fractal analysis, and in this study the so-called "Minkowski sausage" method is adopted. Hereby, two cube-oriented grains in partly recrystallized microstructures are analyzed and quantitative information regarding the dimensions of protrusions/retrusions is obtained.

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Boundary migration during recrystallization: experimental observations
Quantitative analysis of boundary migration during recrystallization is a key task to understand the recrystallization process and to improve recrystallization models. In the last 25-30 years, quantification of boundary migration has mostly been conducted in terms of average growth rates in many materials. This type of analysis has largely been based on the assumption that all or groups of recrystallizing grains grow in the same uniform manner, therefore the results represent average growth behaviors on a macro scale. Recently, significant efforts have been made to quantify the boundary migration during recrystallization on local grain scales, using different advanced experimental characterization and computer simulation techniques. This paper aims at summarizing these recent achievements with focus on the potentials of the various advanced experimental characterization techniques. Suggestions for new experimental and simulation work important for advancing the current understanding of local boundary migration are finally discussed.

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Characterization of boundary roughness of two cube grains in partly recrystallized copper
Protrusions and retrusions typically form on recrystallizing boundaries and thus the boundaries often appear rough. Characterization of the boundary roughness is necessary in order to evaluate the effects of protrusions and retrusions on boundary migration. In the current work, a variable termed area integral invariant is employed to provide quantitative
information of individual protrusions/retrusions on boundaries surrounding two selected recrystallizing grains in partly recrystallized copper as well as of the overall roughness of the boundaries.

**Dark field X-ray microscopy for studies of recrystallization**

We present the recently developed technique of Dark Field X-Ray Microscopy that utilizes the diffraction of hard X-rays from individual grains or subgrains at the (sub)micrometre-scale embedded within mm-sized samples. By magnifying the diffracted signal, 3D mapping of orientations and strains inside the selected grain is performed with an angular resolution of 0.005° and a spatial resolution of 200 nm. Furthermore, the speed of the measurements at high-intensity synchrotron facilities allows for fast non-destructive in situ determination of structural changes induced by annealing or other external influences. The capabilities of Dark Field X-Ray Microscopy are illustrated by examples from an ongoing study of recrystallization of 50% cold-rolled Al1050 specimens.
Effects of structural heterogeneity of nanostructured copper on the evolution of the sizes of recrystallized grains during annealing

Recrystallization in copper deformed by dynamic plastic deformation was investigated using electron backscatter diffraction. The recrystallized grains show a broad size distribution. The kinetics of grains of different sizes is observed to be different: In the beginning of recrystallization, the area fraction of small recrystallized grains increases rapidly. At later stages of recrystallization, the area fraction of small recrystallized grains is stable, while the area fractions of medium and large recrystallized grains increase. Correlation between the broad grain size distribution (and its evolution) and the heterogeneous deformed microstructure is discussed.
Evolution of microstructure and texture during recovery and recrystallization in heavily rolled aluminum

The annealing behavior of nanostructured aluminum AA1050 prepared by cold rolling to an ultrahigh strain (εvM = 6.4) has been investigated using both transmission electron microscopy and electron backscatter diffraction techniques, paying particular attention to changes in microstructure and texture during recovery and their influence on subsequent recrystallization. It is found that coarsening of lamellar structures during recovery can occur via triple junction motion, and that this process can modify the proportion of different boundary types and texture components compared to those in the cold rolled material. Additionally, the heavily deformed material is characterized by different textures and different spatial arrangements of rolling texture components in the center and subsurface. It is found that changes in the misorientation distribution and texture during coarsening are greatly affected by the initial spatial distribution of crystallographic orientations. In particular, the reduction in the fraction of high angle boundaries observed during recovery is much more pronounced in the subsurface layers than in the center layer. The initial through-thickness heterogeneity is thus greatly enhanced during recovery, which leads to significant differences in recrystallized microstructure and texture in the different layers.

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In-situ observations of nucleation in Al-0.1Mg

A tensile sample of an Al-0.1Mg alloy was in-situ tested in a SEM followed by in-situ annealing to develop recrystallizing nuclei/grains. The evolution of microstructure and crystallographic orientations were characterized using the EBSD technique. Changes in the same area within the sample during deformation and annealing steps were closely followed. During the deformation process the original grains remained recognizable, but became elongated and developed substructures. Over the annealing process nuclei with old and new orientations develop at high angle grain boundaries as well as at interior regions with large orientation spreads. Recrystallization twinning was also observed to occur in this Al alloy sample. Furthermore, some localized grain growth during the recrystallization was observed.
Kinetics of individual grains during recrystallization of cold-rolled copper

The formation of a recrystallization texture is closely related to the nucleation and growth of recrystallizing grains, which may vary from grain to grain. Cube texture is a commonly observed recrystallization texture in face centered cubic metals of medium to high stacking fault energy after heavy cold-rolling and annealing. In this work, recrystallization of pure copper cold-rolled to a von Mises strain of 2.7 was investigated in situ using three-dimensional X-ray diffraction. Growth curves of 835 grains were determined, and the curves of cube and non-cube grains were compared. It was found that the nucleation times of cube grains and non-cube grains were similar, whereas the growth rates of a few but not all cube grains were high. Effects hereof for the development of the cube texture were discussed.

General information

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Scopus rating (2010): SJR 0.151 SNIP 0.112
Local strain distributions in partially recrystallized copper determined by in situ tensile investigation

A partially recrystallized copper sample produced by cold-rolling and annealing was deformed in situ by uniaxial tension in a scanning electron microscope, and electron backscatter diffraction data were collected before and after deformation to certain strains. The local strain distributions are quantified using digital image correlation. Distributions of the normal strain along the tensile direction ($\varepsilon_{xx}$) are shown in this paper. The recrystallized grains are found to deform more than the remaining unrecrystallized matrix. When $\varepsilon_{xx}$ is averaged along lines perpendicular to the tensile direction, significant variation are observed, which may be related to the local recrystallized volume fraction.
Nucleation at hardness indentations in cold rolled Al

Nucleation of recrystallization near hardness indentations has been investigated in slightly cold rolled high purity aluminium. Samples were cold rolled to 12% and 20% reductions in thickness and indentations were done with two different loads (500 g and 2000 g). The samples were annealed at 300 °C for 1 h and nuclei were identified. It is found that the indentations are preferential nucleation sites. With EBSD maps around indentation tips, the orientation relationship between nuclei and matrix is analyzed. Finally, effects of rolling reduction and indentation load on local misorientations and stored energy distributions and thus on nucleation are discussed.

Orientations of recrystallization nuclei developed in columnar-grained Ni at triple junctions

A high purity columnar grained nickel sample with a strong <001> fiber texture was cold rolled to 50% reduction in thickness, followed by annealing at different temperatures. Optical microscopy was used to depict the grain boundaries prior to annealing and to detect nuclei formed on grain boundaries after annealing. Electron backscatter diffraction was performed to characterize the orientations of the nuclei and the deformed grains. Hardness tests were conducted on deformed grains. The potentials of triple junctions as preferential nucleation sites, the influence of deformation differences between adjacent grains on nucleation and orientation relationships between nuclei and parent matrix are analyzed.
Supercube grains leading to a strong cube texture and a broad grain size distribution after recrystallization

This work revisits the classical subject of recrystallization of cold-rolled copper. Two characterization techniques are combined: three-dimensional X-ray diffraction using synchrotron X-rays, which is used to measure the growth kinetics of individual grains in situ, and electron backscatter diffraction, which is used for statistical analysis of the microstructural evolution. As the most striking result, the strong cube texture after recrystallization is found to be related to a few super large cube grains, which were named supercube grains. These few supercube grains become large due to higher growth rates. However, most other cube grains do not grow preferentially. Because of the few supercube grains, the grain size distribution after recrystallization is broad. Reasons for the higher growth rates of supercube grains are discussed, and are related to the local deformed microstructure.
Thermal stability of a highly-deformed warm-rolled tungsten plate in the temperature range 1100 °C to 1250 °C

Pure tungsten is considered as armor material for the most critical parts of fusion reactors (i.e. the divertor and the first wall), among other reasons due to its high melting point (3422 °C) and recrystallization temperature. The thermal stability of a pure tungsten plate warm-rolled to a high plastic strain by 90% thickness reduction was investigated by isothermal annealing for up to 190 h in the temperature range between 1100 °C and 1250 °C. Vickers hardness testing allowed tracking the changes in mechanical properties caused by recovery and recrystallization. The hardness evolution could be rationalized in terms of a logarithmic recovery kinetics and a Johnson-Mehl-Avrami-Kolmogorov recrystallization kinetics accounting for an incubation time of recrystallization. The observed time spans for recrystallization and the corresponding recrystallization activation energy for this highly deformed plate suggest that large plastic deformations (e.g. applied during shaping) are only suitable to produce tungsten components to be used at relatively low temperatures (up to 900 °C for a 2 years lifespan). Higher operation temperatures will lead to fast degradation of the microstructure during operation.
Thermal stability of warm-rolled tungsten

Pure tungsten is considered as armor material for the most critical parts of fusion reactors (the divertor and the blanket first wall), mainly due to its high melting point (3422 °C). This is because both the divertor and the first wall have to withstand high temperatures during service which may alter the microstructure of the material by recovery, recrystallization and grain growth, and may cause degradation in material properties as a loss in mechanical strength and embrittlement. For this reason, this project aims towards establishing the temperature and time regime under which recovery and recrystallization occur in tungsten, and quantifying the kinetics and microstructural aspects of these restoration processes. Two warm-rolled tungsten plates are annealed at temperatures between 1100 °C and 1350 °C, under vacuum conditions or argon atmosphere. The effects of annealing on the microstructure are characterized microstructurally by Optical Microscopy (OM) and Electron Back-Scattered Diffraction (EBSD), and mechanically by Vickers hardness. Deformation to different strains will affect the deformation microstructure, and hence the mechanical strength and recrystallization behavior during subsequent annealing. In the present work, the annealing behavior is investigated after introducing different deformation structures by rolling to moderate (67% thickness reduction) and high (90% thickness reduction) rolling reductions. The deformation-induced microstructures after rolling are characterized by the aforementioned techniques to assess the effect of the processing parameters. Characterization of the annealed state reveals the effect of the degree of deformation on the recovery and recrystallization annealing phenomena. This allowed comparing recrystallization kinetics (in terms of nucleation and growth) in dependence on initial strain and annealing temperature. The long-term annealing kinetics were fully characterized at a wide range of annealing times and temperatures comparable to those during operation in fusion reactors. Using Vickers hardness characterization, recovery could be fitted to classical Kuhlmann recovery kinetics, and recrystallization fitted to JMAK recrystallization kinetics, which in turn allowed the calculation of recrystallization activation energies. Much faster recovery and recrystallization kinetics were found for the plate warm-rolled to 90% thickness reduction, as compared to the plate warm-rolled to 67% thickness reduction. An initial incubation time before recrystallization was found for both plates warm-rolled to 67% and 90% thickness reductions. The different Avrami exponents found for the two plates were explained microstructurally in terms of nucleation. The microstructural evolution during recovery and recrystallization was in good agreement with the mechanical characterization. The recrystallized grains were equiaxed and coarser than the grains of the starting microstructure. Vickers hardness measurements indicated that no considerable grain growth occurred after full recrystallization. The typical bcc rolling texture of the as-received plates was replaced by an almost-random texture in the fully-recrystallized state, with a slight preference for cube components, especially in the plate warm-rolled to 90% thickness reduction. This was explained in terms of oriented nucleation of cube nuclei. The nucleation regime showed a tendency for site-saturation for the plate warm-rolled to 67% thickness reduction and a constant nucleation rate for the plate warm-rolled to 90% thickness reduction. During nuclei growth, it was found that the deformation texture component [111] <1 1 0> was less consumed by the recrystallizing grain than the other main deformation texture components. Its higher stability was explained by the lower stored energy of this deformed texture component. Grain sizes are observed to increase linearly with time during recrystallization, until grain impingement occurs. The growth rates are found to be faster for higher annealing temperatures and higher deformation. Considerably different activation energies were found for the plates W67 and W90, comparable to the activation energies of bulk diffusion and grain boundary diffusion respectively. The extrapolation of the recrystallization kinetics (based on these activation energies) to lower annealing temperatures allows predicting the lifespan of these tungsten plates under fusion reactor conditions. A much longer lifetime at normal operating temperatures was found for the plate W67 (e.g. at least 1 million years at 800 °C) as compared to the plate W90 (e.g. 71 years at 800 °C). It is therefore concluded that high rolling reductions lead to severe degradation of the material at high temperatures and shall be avoided. It is suggested that the microstructural reason for the different lifetime of both plates lies in the much higher density of low angle boundaries present in the plate W90, compared to the plate W67. The higher presence of low angle boundaries might aid diffusion at the interface between recovered matrix – recrystallized nuclei, and hence reduce the activation energy required for the migration of tungsten atoms towards the recrystallizing nuclei during recrystallization.

General information

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Organisations: Department of Mechanical Engineering, Materials and Surface Engineering, Department of Wind Energy, Materials science and characterization
Three-dimensional X-ray diffraction (3DXRD) microscopy is a fast and non-destructive structural characterization technique aimed at the study of individual crystalline elements (grains or subgrains) within mm-sized polycrystalline specimens. It is based on two principles: the use of highly penetrating hard X-rays from a synchrotron source and the application of “tomographic” reconstruction algorithms for the analysis of the diffraction data. In favorable cases, the position, morphology, phase, and crystallographic orientation can be derived for up to a thousand elements simultaneously. For each grain its average strain tensor may also be derived, from which the type-II stresses can be inferred. Furthermore, the dynamics of the individual elements can be monitored during typical processes such as deformation or annealing. Hence, information on the interaction between elements can be obtained directly. In this chapter we first provide an overview of the various experimental approaches for 3DXRD that have emerged. Following this, a more detailed presentation of work related to the classical 3DXRD setup is given. Some emphasis is also placed on the mathematical challenges inherent to the reconstruction of grain and orientation maps.
Direct observation of grain boundary migration during recrystallization within the bulk of a moderately deformed aluminium single crystal
A single grain growing in the bulk of a mildly deformed (30% thickness reduction through cold rolling) aluminium single crystal with an {001}<100> orientation (Cube orientation), is monitored during recrystallization with synchrotron radiation using topo-tomography. The formation and migration of planar boundary segments (facets) are analyzed using a method that determines the displacements of local boundary segments along parallel lines perpendicular to the facet plane. Facets are observed to form after a certain annealing time. They migrate at a constant rate for extended periods of time and remain planar during their migration. A change in the migration rate for one facet has been observed which is not related to changes in the experimental conditions and is most likely to be driven by the changes in grain orientation and/or the local deformation microstructure. The crystallography of the analyzed facets is not closely related to any crystallographic {111} plane of neither the growing grain nor the disappearing deformed matrix. © 2013 The Japan Institute of Metals and Materials.

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ISI indexed (2013): ISI indexed yes
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Scopus rating (2011): SJR 0.591 SNIP 0.695 CiteScore 0.78
Recrystallization and mechanical behavior of nanocrystalline copper prepared by dynamic plastic deformation (DPD) and DPD with additional cold-rolling (DPD+CR) were investigated, with an emphasis on the effects of heterogeneity within the deformation microstructure. The DPD sample was found to develop a heterogeneous structure, consisting of regions with different textures and microstructures. This heterogeneity within the deformed structure leads to the formation of severely clustered grains in partially recrystallized samples. The recrystallization kinetic curve shows an Avrami exponent less than 1, which is explained using a two-stage kinetics model incorporating the heterogeneity. The heterogeneity of the DPD sample is largely reduced by applying additional rolling. This change in deformation path leads to a more random distribution of the recrystallized grains and more conventional recrystallization kinetics. The hardness of the two samples was measured, and the mechanical properties before and after partial recrystallization of both samples are discussed based on the presence of structural heterogeneities on the macroscopic and the microscopic scale.

**General information**

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Fatigue damage of steel components
Railway rails and the inner ring in roller bearings in wind turbines are both experiencing steel-to-steel contact in small areas with huge loads resulting in extremely high stresses in the base materials

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Organisations: Department of Wind Energy, Materials science and characterization
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In-Situ Investigation of Local Boundary Migration During Recrystallization
A combination of electron channeling contrast (ECC) and electron backscatter diffraction pattern (EBSP) techniques has been used to follow in situ the migration during annealing at 323 K (50 A degrees C) of a recrystallizing boundary through the deformed matrix of high-purity aluminum rolled to 86 pct reduction in thickness. The combination of ECC and EBSP techniques allows both detailed measurements of crystallographic orientations to be made, as well as tracking of the boundary migration with good temporal resolution. The measured boundary velocity and the local boundary morphology are analyzed based on calculations of local values for the stored energy of deformation. It is found that the migration of the investigated boundary is very complex with significant spatial and temporal variations in its movement, which cannot directly be explained by the variations in stored energies, but that these variations relate closely to local variations within the deformed microstructure ahead of the boundary, and are found related to the local spatial arrangements and misorientations of the dislocation boundaries. The results of the investigation suggest that local analysis, on the micrometer length scale, is necessary for the further understanding of recrystallization boundary migration mechanisms.

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Materials, metallurgy, plane-strain compression, deformed metals, orientation dependence, grain-orientation, stored energy, pure aluminum, mobility, growth, microstructure, protrusions, single crystals, crystallographic orientations, deformed microstructure, dislocation boundaries, electron back scatter diffraction, electron channeling contrasts, in-situ investigations, spatial and temporal variation, spatial arrangements, recrystallization (metallurgy)
Oriented growth during recrystallization revisited in three dimensions

The two surfaces of a 40% cold-rolled tricrystal of aluminium were scratched to stimulate recrystallization nucleation. Serial sectioning combined with electron backscatter diffraction was used to characterize the nuclei in three dimensions. It was found that the largest nuclei have a 40 degrees <1 1 1> relationship to the matrix, but there are also many nuclei of this orientation relationship which do not grow to large sizes. It is shown that local variations in the deformation microstructure determine where preferential growth occurs. (C) 2013 The Authors. Published by Elsevier Ltd. on behalf of Acta Materialia Inc. All rights reserved.
Partially recrystallized microstructures of cold-rolled copper and mechanical properties
Recrystallization kinetics of warm-rolled tungsten in the temperature range 1150-1350 °C

Pure tungsten is a potential candidate material for the plasma-facing first wall and the divertor of fusion reactors. Both parts have to withstand high temperatures during service. This will alter the microstructure of the material by recovery, recrystallization and grain growth and will cause degradation in material properties as a loss in mechanical strength and embrittlement. The thermal stability of a pure tungsten plate warm-rolled to 67% thickness reduction was investigated by long-term isothermal annealing in the temperature range between 1150 °C and 1350 °C up to 2200 h. Changes in the mechanical properties during annealing are quantified by Vickers hardness measurements. They are described concisely by classical kinetic models for recovery and recrystallization. The observed time spans for recrystallization and the obtained value for the activation energy of the recrystallization process indicate a sufficient thermal stability of the tungsten plate during operation below 1075 °C.

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Web of Science (2009): Indexed yes  
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Web of Science (2008): Indexed yes  
Scopus rating (2007): SJR 0.832 SNIP 1.698  
Web of Science (2007): Indexed yes  
Scopus rating (2006): SJR 0.756 SNIP 1.356  
Web of Science (2006): Indexed yes  
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Web of Science (2005): Indexed yes  
Scopus rating (2004): SJR 1.028 SNIP 1.361  
Web of Science (2004): Indexed yes  
Scopus rating (2003): SJR 0.567 SNIP 1.103  
Web of Science (2003): Indexed yes  
Scopus rating (2002): SJR 1.077 SNIP 1.397  
Web of Science (2002): Indexed yes  
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4D Characterization of Metal Microstructures

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Annealing behaviour of a nanostructured Cu–45 at.%Ni alloy
The microstructure and crystallographic texture have been investigated in a Cu–45 at.%Ni alloy after heavy rolling and subsequent annealing at different temperatures. Cold-rolling to a von Mises strain of 5.7 produced a sample with an average boundary spacing along the normal direction of ~70 nm and a large fraction of high-angle boundaries (HABs),
Annealing of this sample for 1 h at temperatures ≤450 °C causes structural coarsening, during which the fraction of HABs decreases. Annealing at higher temperatures results in pronounced discontinuous recrystallization accompanied by twinning. Large frequencies of twin boundaries contribute to high HAB fractions measured in the as-recrystallized condition. Cube-oriented grains demonstrate a size advantage compared to grains of other orientations, thus creating a strong cube texture in the recrystallized material. Further annealing of the recrystallized microstructure promotes grain growth, which leads to a significant strengthening of the cube texture and to a dramatic loss of HABs. After 1 h of annealing at 1000 °C the fraction of the cube texture reaches 99 % and the HAB fraction is 12 %.

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Scopus rating (2014): SJR 0.985 SNIP 1.431 CiteScore 2.54
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ISI indexed (2013): ISI indexed yes
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Scopus rating (2012): SJR 0.991 SNIP 1.407 CiteScore 2.2
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Scopus rating (2011): SJR 0.941 SNIP 1.393 CiteScore 2.05
ISI indexed (2011): ISI indexed yes
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Scopus rating (2010): SJR 0.965 SNIP 1.097
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.842 SNIP 0.963
Web of Science (2009): Indexed yes
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Scopus rating (2008): SJR 0.68 SNIP 0.772
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.623 SNIP 0.869
Effects of widening during rolling on the subsequent recrystallization kinetics of copper

Recrystallization kinetics in copper cold-rolled to 90% reduction, with and without significant widening, was investigated by electron backscatter diffraction. It was found that the recrystallization process was slightly retarded, and the development of the cube recrystallization texture was largely inhibited in the widening sample. Cube grains were observed to have a growth advantage by a factor of 2 in the non-widening sample, while this growth advantage was not observed in the widening sample. The development of the cube texture in the two samples is discussed. © (2013) Trans Tech Publications, Switzerland.

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Importance of Local Structural Variations on Recrystallization

Effects of local variations in the deformation microstructure on subsequent recrystallization are discussed and illustrated by three examples. The three examples consider local variations on different length scales and are:

1. Effects of local variations in the deformation microstructure on the formation of protrusions on migrating boundaries.
2. Effects of an inhomogeneous spatial distribution of second phase particles on growth.
3. Effects of stored energy and orientation variations on recrystallization kinetics.

Kinetics of thermal grooving during low temperature recrystallization of pure aluminum

The migration of a recrystallization boundary in pure aluminum was followed during in situ annealing in a scanning electron microscope. The microstructure was characterized using the electron channeling contrast technique, and a typical stop-go grain boundary motion was observed during annealing. Thermal grooving associated with boundary migration on the inspected free surface was characterized after the in-situ experiment using atomic force microscopy. The results show that new thermal grooves develop at places where the recrystallization boundary segments remain stationary for a relatively long time. The kinetics of thermal grooving are determined. Effects of the surface oxidation layer on the formation of thermal grooving as well as the overall influence of grooves on boundary migration are discussed. © (2013) Trans Tech Publications, Switzerland.

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BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
Phase-field simulation study of the migration of recrystallization boundaries

We present simulation results based on a phase-field model that describes the local migration of recrystallization boundaries into varying deformation energy fields. An important finding from the simulations is that the overall migration rate of the recrystallization front can be considerably affected by the variations in the deformed microstructure, resulting in two regimes. For variations with low amplitude, the overall boundary velocity scales with the average stored deformation energy density. This behavior is in agreement with generally accepted theories of recrystallization. For larger amplitudes,
however, the velocity scales with the maximum of the deformation energy density along the variation, resulting in a considerably larger velocity than that obtained from standard recrystallization models. The shape of the migrating grain boundary greatly depends on the local characteristics of the varying stored deformation energy field. For different deformation energy fields, the simulation results are in good qualitative agreement with experiments and add information which cannot be directly derived from experiments.

**General information**
State: Published
Organisations: Department of Wind Energy, Materials science and characterization, Katholieke Universiteit, Tsinghua University
Authors: Moelans, N. (Ekstern), Godfrey, A. (Ekstern), Zhang, Y. (Intern), Juul Jensen, D. (Intern)
Number of pages: 10
Publication date: 2013
Main Research Area: Technical/natural sciences

**Publication information**
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Volume: 88
Issue number: 5
Article number: 054103
ISSN (Print): 1098-0121
Ratings:
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.16
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.933 SNIP 0.94 CiteScore 2.8
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.667 SNIP 1.262 CiteScore 3.3
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.785 SNIP 1.339 CiteScore 3.55
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.206 SNIP 1.394 CiteScore 3.57
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.382 SNIP 1.438 CiteScore 3.61
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 3.417 SNIP 1.451
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 3.109 SNIP 1.474
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 2.982 SNIP 1.524
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 2.923 SNIP 1.546
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 2.796 SNIP 1.56
Web of Science (2006): Indexed yes
Recovery and recrystallization in commercial purity aluminum cold rolled to an ultrahigh strain

Recovery and recrystallization were studied in commercial purity aluminum cold rolled to an ultrahigh strain ($\varepsilon_{vM}=6.4$) and isothermally annealed at 300°C. The deformed material consists of three layers with similar fractions of high-angle boundaries (HABs) and similar lamellar boundary spacings, but with different textures and different spatial arrangements of the rolling texture components. Annealing leads initially to a coarsening of the lamellar microstructure, accompanied by a reduction in the HAB fraction. Ex-situ experiments using very short annealing times indicate that such microstructural changes are consistent with a process of coarsening via triple junction motion. The recovery proceeds similarly in the center and subsurface layers, but because of the different initial spatial arrangement of the texture components in these layers, the loss of HABs is significantly greater in the subsurface compared with the center layer. Further annealing leads to discontinuous recrystallization, which occurs differently in the center and subsurface layers. In the center layer, recrystallization proceeds more rapidly and with a larger frequency of nuclei, resulting in a smaller recrystallized grain size. In contrast, pronounced recrystallization in the subsurface layers is delayed, and the recrystallized grain size is larger than in the center. It is concluded that the changes taking place during recovery are very significant in determining the subsequent recrystallization behavior in terms of the final grain size and texture.
The objective of this study is to investigate the recrystallization kinetics and microstructural evolution in copper deformed to high strains, including copper deformed by cold-rolling and copper deformed by dynamic plastic deformation (DPD). Various characterization techniques were used, including electron backscatter diffraction (EBSD), Vickers hardness test, 3D X-ray diffraction (3DXRD) and differential scanning calorimetry (DSC). For the cold-rolled samples, a series of initial parameters was investigated for their effects on the recrystallization kinetics and textures, including initial grain size, sample widening, strain, annealing temperature, impurity content, storage time,
etc. The recrystallization in the cold-rolled samples with coarse and fine initial grain sizes is the focus of the present study. It is found that a strong cube recrystallization texture is only developed in the initially fine grained sample. The strong cube texture is related to a few extremely large cube grains, named supercube grains in this study. The development of supercube grains is compared with that of the other cube grains and noncube grains.

Recrystallization in the DPD sample with and without additional rolling was investigated. The spatial distribution of the recrystallizing grains is very different: severely clustered in the DPD sample versus a more random distribution in the one with additional rolling. This difference is inherited from the deformation structures. The effects of annealing on the mechanical properties are also discussed.

The recrystallization kinetics in all the samples investigated in this study shows relatively low Avrami exponents. The average growth rates of the recrystallizing grains are found to decrease with time. The growth curves of individual recrystallizing grains also show decreasing growth rates. The effects of the variation within the deformation structures on various length scales on the recrystallization kinetics are discussed.
3D studies of coarsening kinetics of individual grains

Techniques for fast, non-destructive characterization of the microstructure of materials using synchrotron X-ray radiation have in recent years become an important tool in materials science. The non-destructive nature of the techniques allows for time-resolved characterization of three-dimensional microstructures, i.e. direct probing of the evolution of specific microstructural features.

Synchrotron X-ray radiation techniques have in the present work been employed for experimental characterization of microstructural evolution in individual grains during isothermal annealing: For a study of individual grains during recrystallization, where the recrystallization kinetics of individual grains and the temperature dependence of the recrystallization rate is examined, and for a study of grain structure and grain growth, where growth predictions are put forth in terms of the grain size and topology of individual grains, and compared to the observed growth of a small number of grains.

A phase-field model has been developed and implemented efficiently for parallel execution on computer clusters for simulation of a third annealing phenomenon: Coupled grain growth and coarsening in polycrystalline, dual-phase materials, under phase ratio conserving conditions. This is used to investigate the microstructural evolution in a 50/50 volume ratio material and in a 40/60 volume ratio material by large-scale three-dimensional simulations, in both liquid/liquid and polycrystalline/polycrystalline states. These are used to make general predictions of the coarsening kinetics of polycrystalline, dual-phase materials, specifically the coarsening mechanism, steady state distributions of grain size and topology, and interface morphology.
Boundary migration, Protrusions, Electron backscattered pattern (EBSP), Nickel

Electronic versions:
Boundary_migration_during_recristallization.pdf
*In-situ* measurement of annealing kinetics of individual bulk grains in nanostructured aluminium

Non-destructive three-dimensional X-ray diffraction (3DXRD) was used to characterise the coarsening and growth of bulk crystallites in very heavily deformed aluminium in-situ during isothermal annealing. It was found that initially during the annealing, coarsening by recovery dominates. Later recrystallisation starts and, by fast growth of recrystallisation nuclei, some very big grains evolve. This occurs simultaneously with recovery coarsening of other parts of the microstructure. Consequently, very broad grain size distributions are observed. The 3DXRD results show that the nuclei (those crystallites that end up being very large by fast recrystallisation growth) do not have an initial size advantage compared to those coarsening much slower by recovery. Kinetics curves for these two categories of grains are determined. Data of this type are considered very important for understanding the thermal response of nanometals and thus also for instructing thermal treatment for optimal mechanical properties.

**General information**

State: Published  
Organisations: Department of Wind Energy, Materials science and characterization, Chongqing University  
Authors: Wu, G. (Ekstern), Juul Jensen, D. (Intern)  
Pages: 3381–3391  
Publication date: 2012  
Main Research Area: Technical/natural sciences

**Publication information**

Volume: 92  
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ISSN (Print): 1478-6435  
Ratings:  
BFI (2018): BFI-level 1  
BFI (2017): BFI-level 1  
Web of Science (2017): Indexed Yes  
BFI (2016): BFI-level 1  
Scopus rating (2016): CiteScore 1.34 SJR 0.735 SNIP 0.714  
BFI (2015): BFI-level 2  
Scopus rating (2015): SJR 0.888 SNIP 0.985 CiteScore 1.52  
Web of Science (2015): Indexed yes  
BFI (2014): BFI-level 2  
Scopus rating (2014): SJR 0.957 SNIP 1.11 CiteScore 1.56  
Web of Science (2014): Indexed yes  
BFI (2013): BFI-level 2  
Scopus rating (2013): SJR 0.902 SNIP 0.936 CiteScore 1.46  
ISI indexed (2013): ISI indexed yes  
Web of Science (2013): Indexed yes  
BFI (2012): BFI-level 2  
Scopus rating (2012): SJR 1.013 SNIP 0.953 CiteScore 1.45  
ISI indexed (2012): ISI indexed yes  
Web of Science (2012): Indexed yes  
BFI (2011): BFI-level 2  
Scopus rating (2011): SJR 0.933 SNIP 0.976 CiteScore 1.43  
ISI indexed (2011): ISI indexed yes  
BFI (2010): BFI-level 2  
Scopus rating (2010): SJR 1.034 SNIP 0.959  
BFI (2009): BFI-level 2  
Scopus rating (2009): SJR 1.06 SNIP 0.853  
Web of Science (2009): Indexed yes  
BFI (2008): BFI-level 2  
Scopus rating (2008): SJR 1.231 SNIP 0.996  
Web of Science (2008): Indexed yes  
Scopus rating (2007): SJR 1.113 SNIP 1.081  
Web of Science (2007): Indexed yes  
Scopus rating (2006): SJR 1.184 SNIP 1.152
New 3DXRD results on recrystallization and grain growth

New in-situ 3DXRD results obtained since the last Rex&GG conference are presented and discussed. This includes:
Documentation of the formation of nuclei with new orientations, determination of apparent activation energies for individual bulk grains during recrystallization and evolution in the 3D microstructure during grain growth.
Orientation changes during annealing of nanostructured aluminium
Recrystallization kinetics of nanostructured copper processed by dynamic plastic deformation

The recrystallization kinetics of nanostructured copper samples processed by dynamic plastic deformation was investigated by electron backscatter diffraction. It was found that the evolution of the recrystallized volume fraction as a function of annealing time has a very low slope ($n=0.37$) when plotted as an Avrami plot. Various reasons for such a low slope are discussed, including possible recrystallization during storage of samples, and the heterogeneous recrystallization kinetics. The effects of heterogeneous recrystallization kinetics are illustrated by a simplified model with a fast and a slowly recrystallizing region.
The influence of strain on annealing behaviour of heavily rolled aluminium AA1050

Deformation structures and annealing behaviour have been analysed in the centre layer of two AA1050 samples cold-rolled to von Mises strains of 3.6 and 6.4. During annealing at 270-300°C structural coarsening and discontinuous recrystallization occurred in both samples. In the coarsened microstructure, the fraction of high angle boundaries was slightly lower than that in the as-rolled conditions. Recrystallization textures of both samples contained significant fractions of the rolling texture components. The fraction of the retained rolling texture was however greater in the strain-6.4 sample. The (001)<310> and (110)<566> components were also pronounced in this sample. The size of recrystallized grains having orientations of the rolling texture was considerably smaller than the size of grains having other crystallographic orientations. This may be attributed to orientation pinning that hinders growth of grains with orientations of the rolling texture.

General information
State: Published
Organisations: Department of Wind Energy, Materials science and characterization
Authors: Mishin, O. (Intern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 297-302
Publication date: 2012
Conference: 4th International Conference on Recrystallization and Grain Growth, Sheffield, United Kingdom, 04/07/2010 - 04/07/2010
BFI conference series: International Conference on Recrystallization and Grain Growth (5010946)
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science Forum
Volume: 715-716
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
BFI (2014): BFI-level 1
Scopus rating (2014): SNIP 0.448 SJR 0.269 CiteScore 0.33
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
The three dimensional X-ray diffraction technique

This introductory tutorial describes the so called 3 dimensional X-ray diffraction (3DXRD) technique, which allows bulk non-destructive structural characterizations of crystalline materials. The motivations and history behind the development of this technique are described and its potentials are sketched. Examples of the use of the technique are given and future trends and developments are suggested. The primary aim of the paper is to give 3DXRD novices an easy introduction to the technique and to describe a way from a dream to reality and new results.

General information
State: Published
Organisations: Department of Physics, Neutrons and X-rays for Materials Physics, Department of Wind Energy, Materials science and characterization
Authors: Juul Jensen, D. (Intern), Poulsen, H. F. (Intern)
Pages: 1-7
Publication date: 2012
Three-dimensional investigation of recrystallization nucleation in a particle-containing Al alloy

The effects of an inhomogeneous distribution of second-phase particles on nucleation of recrystallization in a particle-containing aluminum alloy are investigated by 3-D serial sectioning. Clusters and bands of big intermetallic particles are the dominating nucleation sites, but other sites are also active. The effects of nucleation sites and the inhomogeneous particle distribution on the orientation and size of the nuclei are investigated and their relationships are discussed.

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Analysis of Orientation Relations Between Deformed Grains and Recrystallization Nuclei

Nucleation in 30 pct rolled high-purity aluminum samples was investigated by the electron backscattering pattern method before and after annealing. A total of 29 nuclei including two twins were observed, and approximately one third of these nuclei had orientations not detected in the deformed state. Possible orientation relations between these nuclei and the deformed state were by 20 to 55 deg rotation around axes. These axes were compared with the active slip systems, and the crystallographic features of the deformation-induced dislocation boundaries. Good agreement was found between the rotation axes and the normal to slip planes with which dislocation boundaries align. The exact nucleation mechanism has not been established, but the observed orientation relations allow for prediction of which grains are likely to form rotated nuclei, although these may not all do so.

General information
State: Published
Authors: West, S. S. (Intern), Winther, G. (Intern), Juul Jensen, D. (Intern)
Pages: 1400-1408
Publication date: 2011
Main Research Area: Technical/natural sciences

Publication information
Journal: Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science
Volume: 42A
Issue number: 5
ISSN (Print): 1073-5623
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.91 SJR 1.179 SNIP 1.179
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.231 SNIP 1.332 CiteScore 1.78
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.671 SNIP 1.877 CiteScore 2.06
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.481 SNIP 1.63 CiteScore 1.9
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.419 SNIP 1.706 CiteScore 1.76
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.508 SNIP 1.703 CiteScore 1.78
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.688 SNIP 1.802
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.608 SNIP 1.53
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.505 SNIP 1.536
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.314 SNIP 1.544
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.397 SNIP 1.653
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.183 SNIP 1.414
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.078 SNIP 1.607
Scopus rating (2002): SJR 2.057 SNIP 1.992
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.878 SNIP 1.784
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.844 SNIP 1.809
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 2.028 SNIP 1.905
Original language: English
Materials characterization and modelling, Materials and energy storage
DOIs:
10.1007/s11661-010-0502-1
Source: orbit
Source-ID: 270545
Publication: Research - peer-review › Journal article – Annual report year: 2010

Composite materials for structural performance: towards higher limits. Proceedings of the 32nd Risø International
Symposium on Materials Science

General information
State: Published
Organisations: Metal Structures in Four Dimensions, Materials Research Division, Risø National Laboratory for
Deformed metals - structure, recrystallisation and strength

It is shown how new discoveries and advanced experimental techniques in the last 25 years have led to paradigm shifts in the analysis of deformation and annealing structures of metals and in the way the strength of deformed samples is related to structural parameters. This is described in three sections: structural evolution by grain subdivision, recovery and recrystallisation and strength-structure relationships.

General information

State: Published
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern)
Pages: 1229-1240
Publication date: 2011
Main Research Area: Technical/natural sciences

Publication information

Journal: Materials Science and Technology
Volume: 27
Issue number: 8
ISSN (Print): 0267-0836
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.43 SJR 0.814 SNIP 0.812
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.632 SNIP 0.764 CiteScore 1.1
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.788 SNIP 1.005 CiteScore 1.1
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.636 SNIP 0.868 CiteScore 0.92
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.683 SNIP 0.979 CiteScore 0.86
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
Evolution of orientations and deformation structures within individual grains in cold rolled columnar grained nickel

Columnar grained Ni is used as a model material allowing simultaneous non-surface investigations of the evolution of crystallographic orientations and deformation microstructures within individual grains as a function of rolling strain up to ε=0.7. Electron channelling contrast and electron backscattered diffraction are used to visualise microstructures and crystallographic orientations. It is found that both the microstructural and the textural development depend strongly on the initial grain orientation. A grain size effect is observed on the deformation-induced orientation scatter within the grains. Large grains have microstructure and orientation scatters similar to those observed in single crystals of similar orientation. The observations are interpreted based on a slip system analysis, considering the relative effects of the initial grain orientation and the interaction between neighbouring grains as well.

General information
State: Published
Organisations: Metal Structures in Four Dimensions, Materials Research Division, Risø National Laboratory for Sustainable Energy, Materials Research Division. Management, Tsinghua University, Chongqing University
Authors: Wu, G. (Ekstern), Godfrey, A. (Ekstern), Winther, G. (Intern), Juul Jensen, D. (Intern), Liu, Q. (Ekstern)
Pages: 5451-5461
Publication date: 2011
Main Research Area: Technical/natural sciences

Publication information
Journal: Acta Materialia
Volume: 59
Issue number: 14
ISSN (Print): 1359-6454
Ratings:
In situ measurements of growth rates and grain-averaged activation energies of individual grains during recrystallization of 50% cold-rolled aluminium

Three-dimensional X-ray diffraction has been used to study the growth kinetics of 1406 individual grains recrystallizing in 50% cold-rolled aluminium. It is found that each grain follows its own kinetics. The radial growth of individual grains is found to often be piecewise linear, and an explanation based on the cell block microstructure of cold-rolled aluminium is proposed. Grain-averaged activation energies of 793 individual grains are determined, and found to constitute a broad distribution. Reasons and implications of these findings are discussed.

General information
State: Published
Pages: 1003-1006
Publication date: 2011
Main Research Area: Technical/natural sciences

Publication information
Journal: Scripta Materialia
Volume: 64
Issue number: 11
ISSN (Print): 1359-6462
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.71 SJR 1.901 SNIP 1.696
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.3 SNIP 1.876 CiteScore 3.54
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.744 SNIP 2.124 CiteScore 3.55
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.347 SNIP 1.975 CiteScore 3.19
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.309 SNIP 2.022 CiteScore 3.01
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.333 SNIP 2.108 CiteScore 3.21
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.445 SNIP 2.125
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.574 SNIP 2.02
In situ observation of boundary migration during recrystallization of pure aluminum cold-rolled to high strain

General information
State: Published
Authors: Zhang, Y. (Intern), Juul Jensen, D. (Intern)
Publication date: 2011
Main Research Area: Technical/natural sciences
Materials characterisation and modelling
Source: orbit
Source-ID: 281661
Publication: Research › Poster – Annual report year: 2011

Local boundary migration during recrystallization in pure aluminium
Boundary migration during recrystallization has been followed by an ex situ electron channelling contrast technique, and protrusions/retrusions formed locally on recrystallization boundaries have been quantified. The results show that the motion of recrystallization boundaries is much more complex than generally appreciated. Locally protrusions/retrusions can provide a driving force comparable in magnitude to the driving force from the stored energy in the deformed matrix. The stop–go motion of the recrystallization boundaries is also discussed and related to the formation of protrusions and retrusions.

General information
State: Published
Organisations: Metal Structures in Four Dimensions, Materials Research Division, Risø National Laboratory for Sustainable Energy, Materials Research Division. Management, Tsinghua University
Authors: Zhang, Y. (Intern), Godfrey, A. (Ekstern), Juul Jensen, D. (Intern)
Pages: 331-334
Publication date: 2011
Publication information
Journal: Scripta Materialia
Volume: 64
Issue number: 4
ISSN (Print): 1359-6462
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.71 SJR 1.901 SNIP 1.696
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.3 SNIP 1.876 CiteScore 3.54
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.744 SNIP 2.124 CiteScore 3.55
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.347 SNIP 1.975 CiteScore 3.19
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.309 SNIP 2.022 CiteScore 3.01
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.333 SNIP 2.108 CiteScore 3.21
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.445 SNIP 2.125
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.574 SNIP 2.02
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.634 SNIP 2.128
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 2.229 SNIP 2.174
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 2.1 SNIP 1.915
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.831 SNIP 1.915
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.464 SNIP 1.731
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.499 SNIP 1.709
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.509 SNIP 1.345
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.301 SNIP 1.361
Web of Science (2001): Indexed yes
Recrystallization kinetics

General information
State: Published
Authors: Juul Jensen, D. (Intern)
Publication date: 2011
Event: Abstract from Symposium on Nanometals for Energy, Beidaihe (CN), 17-18 Aug,.
Main Research Area: Technical/natural sciences
Materials characterisation and modelling
Source: orbit
Source-ID: 269171
Publication: Research › Journal article – Annual report year: 2010

Recrystallization kinetics of 90% cold rolled copper with different initial grain sizes

General information
State: Published
Publication date: 2011
Event: Abstract from Symposium on Nanometals for Energy, Beidaihe (CN), 17-18 Aug,.
Main Research Area: Technical/natural sciences
Materials characterisation and modelling
Source: orbit
Source-ID: 281571
Publication: Research › Conference abstract for conference – Annual report year: 2011

The influence of strain on annealing behaviour of heavily rolled aluminium AA1050

General information
State: Published
Authors: Mishin, O. (Intern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Publication date: 2011
Event: Abstract from Symposium on Nanometals for Energy, Beidaihe (CN), 17-18 Aug,.
Main Research Area: Technical/natural sciences
Materials characterisation and modelling
Source: orbit
Source-ID: 281579
Publication: Research › Conference abstract for conference – Annual report year: 2011

Towards an integrated materials characterization toolbox

The material characterization toolbox has recently experienced a number of parallel revolutionary advances, foreshadowing a time in the near future when material scientists can quantify material structure evolution across spatial and temporal space simultaneously. This will provide insight to reaction dynamics in four-dimensions, spanning multiple orders of magnitude in both temporal and spatial space. This study presents the authors’ viewpoint on the material characterization field, reviewing its recent past, evaluating its present capabilities, and proposing directions for its future development. Electron microscopy; atom probe tomography; x-ray, neutron and electron tomography; serial sectioning
tomography; and diffraction-based analysis methods are reviewed, and opportunities for their future development are highlighted. Advances in surface probe microscopy have been reviewed recently and, therefore, are not included [D.A. Bonnell et al.: Rev. Modern Phys. in Review]. In this study particular attention is paid to studies that have pioneered the synergetic use of multiple techniques to provide complementary views of a single structure or process; several of these studies represent the state-of-the-art in characterization and suggest a trajectory for the continued development of the field. Based on this review, a set of grand challenges for characterization science is identified, including suggestions for instrumentation advances, scientific problems in microstructure analysis, and complex structure evolution problems involving material damage. The future of microstructural characterization is proposed to be one not only where individual techniques are pushed to their limits, but where the community devises strategies of technique synergy to address complex multiscale problems in materials science and engineering.

**General information**

State: Published
Pages: 1341-1383
Publication date: 2011
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Journal of Materials Research
Volume: 26
Issue number: 11
ISSN (Print): 0884-2914
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 0.648 SNIP 0.661 CiteScore 1.51
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.649 SNIP 0.73 CiteScore 1.48
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.825 SNIP 0.979 CiteScore 1.8
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.835 SNIP 0.843 CiteScore 1.77
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.923 SNIP 0.992 CiteScore 1.57
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 0.88 SNIP 0.846 CiteScore 1.49
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.041 SNIP 0.881
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.154 SNIP 0.924
A method to map the microstructure in deformed aluminum in three dimensions is presented. The method employs serial sectioning by mechanical polishing, and electropolishing to obtain a good surface quality, and orientation mapping of individual grains in each section by electron backscattered diffraction. Techniques to carefully align the sample and to accurately measure the thickness of the material removed in each serial section are described. A new method for stacking the two dimensional maps together to produce a three dimensional visualization of the microstructure is presented. The data are analyzed in terms of the deformation-induced orientation spread within each grain. In particular the advantage of using three dimensional data, as opposed to two dimensional data, is illustrated, by inclusion of information about the three dimensional morphology of a grain and its neighbors.
Alignment of serial sections for 3D microstructural characterization of cold rolled aluminum by EBSD

General information
State: Published
Organisations: Metal Structures in Four Dimensions, Materials Research Division, Risø National Laboratory for Sustainable Energy, Materials Research Division. Management, Tsinghua University
Authors: Fengxiang, L. (Intern), Godfrey, A. (Ekstern), Winther, G. (Intern), Juul Jensen, D. (Intern)
Pages: 303-309
Publication date: 2010
Conference: 31st Risø International Symposium on Materials Science : Challenges in materials science and possibilities in 3D and 4D characterization techniques, Roskilde, Denmark, 06/09/2010 - 06/09/2010
Main Research Area: Technical/natural sciences

Publication information
Volume: 31
ISSN (Print): 0907-0079
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Challenges in materials science and possibilities in 3D and 4D characterization techniques. Proceedings of the 31st Risø International Symposium on Materials Science

Evolution of Microstructure and Texture during Annealing of Aluminum AA1050 Cold Rolled to High and Ultrahigh Strains
The microstructure and texture of commercial purity aluminum (AA1050) have been investigated after cold rolling to von Mises strains of 3.6 to 6.4 followed by recovery and recrystallization during annealing. The evolution of structural parameters of the deformed microstructure, such as boundary spacing and fraction of high-angle boundaries (HABs), did not reach saturation in the given strain range. Recovery was accompanied by structural coarsening and by a decrease in the fraction of HABs. The coarsening rate increased with increasing strain prior to annealing. Recrystallization nuclei were found to form both in deformation zones around coarse particles and in recovered lamellar structures. The process of recrystallization in the present material can thus be characterized as discontinuous recrystallization. In recrystallized conditions, the average grain size was related to the grain orientation: the mean size of grains having orientations of the rolling texture was smaller than the size of grains with other orientations. The orientation dependence of the recrystallized grain size was more pronounced in the samples rolled to ultrahigh strains. © 2010 The Minerals, Metals & Materials Society and ASM International.
In-situ observations of migration of recrystallization boundaries in pure aluminium

General information
State: Published
Organisations: Metal Structures in Four Dimensions, Materials Research Division, Risø National Laboratory for Sustainable Energy, Materials Research Division. Management, Tsinghua University
Authors: Zhang, Y. (Intern), Godfrey, A. (Ekstern), Juul Jensen, D. (Intern)
Pages: 497-503
Publication date: 2010
Conference: 31st Risø International Symposium on Materials Science : Challenges in materials science and possibilities in 3D and 4D characterization techniques, Roskilde, Denmark, 06/09/2010 - 06/09/2010
Main Research Area: Technical/natural sciences

Publication information
Volume: 31
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BFI (2016): BFI-level 1
BFI (2015): BFI-level 1
BFI (2014): BFI-level 1
BFI (2013): BFI-level 1
ISI indexed (2013): ISI indexed no
BFI (2012): BFI-level 1
ISI indexed (2012): ISI indexed no
BFI (2011): BFI-level 1
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 1
BFI (2009): BFI-level 1
BFI (2008): BFI-level 1
Original language: English
Materials and energy storage, Light strong materials for energy purposes
Source: orbit
Source-ID: 266677
Publication: Research - peer-review › Conference article – Annual report year: 2010

Monitoring grain boundary migration during recrystallisation using topotomography

General information
State: Published
Pages: 449-456
Publication date: 2010
Conference: 31st Risø International Symposium on Materials Science : Challenges in materials science and possibilities in 3D and 4D characterization techniques, Roskilde, Denmark, 06/09/2010 - 06/09/2010
Nanometaller

General information
State: Published
Authors: Winther, G. (Intern), Juul Jensen, D. (Intern)
Pages: 26-29
Publication date: 2010
Main Research Area: Technical/natural sciences

Publication information
Journal: Aktuel Naturvidenskab
Issue number: 3
ISSN (Print): 1399-2309
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: English
Materials and energy storage, Light strong materials for energy purposes
Source: orbit
Source-ID: 271247
Publication: Communication › Journal article – Annual report year: 2010

Nanometaller bøjer naturens love

General information
State: Published

Publication information
Volume: 31
ISSN (Print): 0907-0079
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
BFI (2016): BFI-level 1
BFI (2015): BFI-level 1
BFI (2014): BFI-level 1
BFI (2013): BFI-level 1
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 1
BFI (2009): BFI-level 1
BFI (2008): BFI-level 1
Original language: English
Materials characterization and modelling, Materials and energy storage
Electronic versions:
VanBoxel_MONITORING.pdf
Source: orbit
Source-ID: 266671
Publication: Research - peer-review › Conference article – Annual report year: 2010
Recrystallization in 3D and 4D

General information
State: Published
Authors: Juul Jensen, D. (Intern)
Pages: 31-42
Publication date: 2010
Conference: 31st Risø International Symposium on Materials Science: Challenges in materials science and possibilities in 3D and 4D characterization techniques, Roskilde, Denmark, 06/09/2010 - 06/09/2010
Main Research Area: Technical/natural sciences

Publication information
Volume: 31
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Ratings:
BFI (2018): BFI-level 1
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BFI (2016): BFI-level 1
BFI (2015): BFI-level 1
BFI (2014): BFI-level 1
BFI (2013): BFI-level 1
ISI indexed (2013): ISI indexed no
BFI (2012): BFI-level 1
ISI indexed (2012): ISI indexed no
BFI (2011): BFI-level 1
ISI indexed (2011): ISI indexed no
BFI (2010): BFI-level 1
BFI (2009): BFI-level 1
BFI (2008): BFI-level 1
Original language: English
Materials and energy storage, Light strong materials for energy purposes
Source: orbit
Source-ID: 266624
Publication: Research - peer-review › Conference article – Annual report year: 2010

Recrystallization kinetics of 50% cold-rolled aluminum

General information
State: Published
Organisations: Metal Structures in Four Dimensions, Materials Research Division, Risø National Laboratory for Sustainable Energy, Materials Research Division. Management, Lund University, European Synchrotron Radiation Facility
Pages: 391-396
Publication date: 2010
3DXRD Characterization and Modelling of Recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Materials Research Division, Management
Authors: Juul Jensen, D. (Intern)
Number of pages: 412
Pages: 80-80
Publication date: 2009

Host publication information
Title of host publication: Technical Program
Publisher: TMS
Main Research Area: Technical/natural sciences
Materials characterization and modelling, Materials research
Source: orbit
Source-ID: 254901
Publication: Research - peer-review › Conference abstract in proceedings – Annual report year: 2009

Analysis of Deformation Structures in FCC Materials Using EBSD and TEM Techniques

General information
State: Published
Authors: Mishin, O. (Intern), Godfrey, A. (Intern), Juul Jensen, D. (Intern)
Number of pages: 428
Pages: 263-275
Publication date: 2009

Host publication information
Analysis of the growth of individual grains during recrystallization in pure nickel

The growth of individual grains during recrystallization in 96% cold-rolled pure nickel has been followed using electron backscatter pattern maps of the same surface area taken after each of several annealing steps. It was found that the growth is quite complex, with boundaries moving, stopping and moving again. The growth kinetics differ from grain to grain and, on average, cube-oriented grains grow the fastest. The growth of the grains has also been analyzed as a function of boundary misorientation. This analysis shows that there is no significant difference in misorientation distribution between boundaries that move and those that do not. This is contrary to the usual assumption that the boundary mobility and the migration rate depend on the misorientation across a boundary. This observation and the reasons for the faster growth of cube-oriented grains are discussed.

General information
State: Published
Organisations: Materials Research Division, Management, Materials Research Division, Risø National Laboratory for Sustainable Energy, Tsinghua University, Chongqing University
Authors: Zhang, Y. (Ekstern), Godfrey, A. (Ekstern), Liu, Q. (Ekstern), Liu, W. (Ekstern), Juul Jensen, D. (Intern)
Pages: 2631-2639
Publication date: 2009
Main Research Area: Technical/natural sciences

Publication information
Journal: Acta Materialia
Volume: 57
Issue number: 9
ISSN (Print): 1359-6454
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.67 SJR 3.283 SNIP 2.674
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.542 SNIP 2.927 CiteScore 5.22
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 4.045 SNIP 3.348 CiteScore 5.16
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 3.29 SNIP 2.709 CiteScore 4.37
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.409 SNIP 2.917 CiteScore 4.28
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.247 SNIP 2.81 CiteScore 4.27
ISI indexed (2011): ISI indexed yes
Direct non-destructive observation of bulk nucleation in 30% deformed aluminum

A 30% deformed aluminum sample was mapped non-destructively using three-dimensional X-ray diffraction (3DXRD) before and after annealing to nucleation of recrystallization. Nuclei appeared in the bulk of the sample. Their positions and volumes were determined, and the crystallographic orientations were compared with the orientations of the deformed grains. It was found that nuclei with new orientations can form and their orientations have been related to the dislocation structure in the deformed grains.

General information
State: Published
Pages: 875-878
Publication date: 2009
Main Research Area: Technical/natural sciences

Publication information
Journal: Scripta Materialia
Volume: 61
ISSN (Print): 1359-6462
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Materials characterization and modelling, Materials research

DOIs:
10.1016/j.scriptamat.2009.07.027

Source: orbit
Source-ID: 250154
Effects of clustered nucleation on recrystallization

Computer simulations are used to study effects of an experimentally determined 3D distribution of nucleation sites on the recrystallization kinetics and on the evolution of the recrystallized microstructure as compared to simulations with random nucleation. It is found that although the experimentally observed clustering is not very strong, it changes the kinetics and the recrystallized microstructural morphology plus leads to a recrystallized grain size distribution, which is significantly broadened compared to that of random nucleation simulations. (C) 2009 Published by Elsevier Ltd. on behalf of Acta Materialia Inc.
Effects of strain on recrystallization of nickel metals and nanometals produced by heavy cold rolling

General information
State: Published
Organisations: Metal Structures in Four Dimensions, Materials Research Division, Risø National Laboratory for Sustainable Energy, Materials Research Division. Management, Tsinghua University
Authors: Zhang, Y. (Intern), Godfrey, A. (Ekstern), Juul Jensen, D. (Intern)
Pages: 423-430
Publication date: 2009
Measurements of the Curvature of Protrusions/Retrusions on Migrating Recrystallization Boundaries

Two methods to quantify protrusions/retrusions and to estimate local boundary curvature from sample plane sections are proposed. The methods are used to evaluate the driving force due to curvature of the protrusions/retrusions for partially recrystallized pure nickel cold rolled to 96% reduction in thickness. The results reveal that the values calculated by both these methods are reasonable when compared with the stored energy measured by differential scanning calorimetry. The relationship between protrusions and the average stored energy density in the deformed matrix is also investigated for partially recrystallized pure aluminum cold rolled to 50%. The results show that the local deformed microstructure as well as local heterogeneities have to be analyzed in order to understand the formation of the protrusions.

General Information
State: Published
Organisations: Metal Structures in Four Dimensions, Materials Research Division, Risø National Laboratory for Sustainable Energy, Materials Research Division. Management, Tsinghua University
Authors: Zhang, Y. (Intern), Godfrey, A. (Ekstern), Juul Jensen, D. (Intern)
Pages: 197-207
Publication date: 2009
Main Research Area: Technical/natural sciences
Microstructural path model and strain dependence of recrystallisation in commercial aluminium

The isothermal recrystallisation of commercial purity aluminium alloy AA1200 cold deformed to either a true strain of 2 (86.5% reduction in thickness) or 4 (98.2% reduction in thickness) was studied phenomenologically in each material by means of quantitative microscopy. The microstructural path descriptors, V-V, the volume fraction recrystallised, and S-V, the interfacial area density separating recrystallised grains from deformed grains were measured stereologically by electron backscatter diffraction and microstructural path model parameters were deduced for each strain. The effects of strain were delineated and compared with the results of recrystallisation in a slightly different commercial aluminium alloy AA1050 deformed to a true strain of 2.3.

General information
State: Published
Pages: 403-406
Publication date: 2009
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science and Technology
Volume: 25
Issue number: 3
ISSN (Print): 0267-0836
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.43 SJR 0.814 SNIP 0.812
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.632 SNIP 0.764 CiteScore 1.1
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.788 SNIP 1.005 CiteScore 1.1
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Nanostructured metals: Fundamentals to applications: Proceedings of the 30th Risø International Symposium on Materials Science

General information
State: Published
Number of pages: 436
Publication date: 2009

Publication information
Time Evolution in 3D Metal Microstructures-Recrystallization

The three dimensional x-ray diffraction (3DXRD) concept is shortly described and new experimental updates are highlighted. The potentials and limitation of the 3DXRD method are compared to those of other 3D methods. 3DXRD has been used for in-situ studies of recrystallization and new migration rate results are presented. Migration mechanism for boundary segments surrounding a recrystallizing grain are described and discussed.

General information
State: Published
Organisations: Materials Research Division. Management, Materials Research Division, Risø National Laboratory for Sustainable Energy, Metal Structures in Four Dimensions
Authors: Juul Jensen, D. (Intern), Schmidt, S. (Intern)
Pages: 1655-1659
Publication date: 2009
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Transactions
Volume: 50
Issue number: 7
ISSN (Print): 1345-9678
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 0.505 SNIP 0.729 CiteScore 0.86
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.502 SNIP 0.681 CiteScore 0.8
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.73 SNIP 1.035 CiteScore 0.91
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.491 SNIP 0.724 CiteScore 0.69
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.554 SNIP 0.766 CiteScore 0.7
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.591 SNIP 0.695 CiteScore 0.78
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.72 SNIP 0.855
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.674 SNIP 0.794
Web of Science (2009): Indexed yes
Three-dimensional x-ray diffraction (3DXRD) allows nondestructive characterization of grains, orientations, and stresses in bulk microstructures and, therefore, enables in situ studies of the structural dynamics during processing. The method is described briefly, and its potential for providing new data valuable for validation of various models of microstructural evolution is discussed. Examples of 3DXRD measurements related to recrystallization and to solid-state phase transformations in metals are described. 3DXRD measurements have led to new modeling activity predicting the evolution of metallic microstructures with much more detail than hitherto possible. Among these modeling activities are three-dimensional (3D) geometric modeling, 3D molecular dynamics modeling, 3D phase-field modeling, two-dimensional (2D) cellular automata, and 2D Monte Carlo simulations.
Automatic determination of recrystallization parameters based on EBSD mapping

A new automatic algorithm for determining the recrystallization parameters V-V, S-V and based on EBSD mapping is presented in this paper. The algorithm is validated on aluminium deformed to high strains. The algorithm is also compared with other methods using the exact same sets of samples, and it is found that the present method gives better results for SV. (C) 2007 Elsevier Inc. All rights reserved.
Cube texture in heavily cold rolled pure nickel

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Materials Research Division. Management, Materials Research Division, Beijing University of Posts and Telecommunications, Tsinghua University, Chongqing University
Authors: Zhang, Y. (Ekstern), Li, X. (Ekstern), Godfrey, A. (Ekstern), Liu, W. (Ekstern), Liu, Q. (Ekstern), Juul Jensen, D. (Intern)
Number of pages: 413
Pages: 393-399
Publication date: 2008

Host publication information
Direct observation of 3-D grain growth in Al–0.1% Mn

Grain growth in an Al-0.1% Mn sample has been measured non-destructively using a three-dimensional X-ray diffraction (3DXRD) microscope. The 3-D grain morphology as well as the crystallographic orientation was determined for 483 grains in the illuminated volume prior to annealing. After annealing, a second map revealed that significant grain growth had taken place, with only 27 remaining grains in the same volume. The correlation between grain orientation, growth of grains and neighbouring relationships is explored. (c) 2008 Acta Materialia Inc. Published by Elsevier Ltd. All rights reserved.
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.445 SNIP 2.125
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.574 SNIP 2.02
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.634 SNIP 2.128
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 2.229 SNIP 2.174
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 2.1 SNIP 1.915
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.831 SNIP 1.915
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.464 SNIP 1.731
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.499 SNIP 1.709
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.509 SNIP 1.345
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.301 SNIP 1.361
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.268 SNIP 1.123
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.53 SNIP 1.162
Original language: English
DOIs:
10.1016/j.scriptamat.2008.04.049
Source: orbit
Source-ID: 223406
Publication: Research - peer-review › Journal article – Annual report year: 2008


**General information**
State: Published
Number of pages: 413
Publication date: 2008

**Publication information**
Place of publication: Roskilde
Publisher: Danmarks Tekniske Universitet, Risø Nationallaboratoriet for Bæredygtig Energi
ISBN (Print): 978-87-550-3694-9
Original language: English
Number: 29
ISSN: 0907-0079
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 222803
Experimental quantification of nucleation

General information
State: Published
Authors: West, S. (Intern), Schmidt, S. (Intern), Juul Jensen, D. (Intern)
Number of pages: 413
Pages: 383-389
Publication date: 2008

Host publication information
Place of publication: Roskilde
Publisher: Danmarks Tekniske Universitet, Risø Nationallaboratoriet for Bæredygtig Energi
ISBN (Print): 978-87-550-3694-9
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 222848
Publication: Research - peer-review › Article in proceedings – Annual report year: 2008

Molecular dynamics simulations of grain boundary migration during recrystallization employing tilt and twist dislocation boundaries to provide the driving pressure

General information
State: Published
Authors: Godiksen, R. B. (Intern), Schmidt, S. (Intern), Juul Jensen, D. (Intern)
Pages: 065002-065021
Publication date: 2008
Main Research Area: Technical/natural sciences

Publication information
Journal: Modelling & Simulation in Materials Science and Engineering
Volume: 16
Issue number: 6
ISSN (Print): 0965-0393
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.82 SJR 0.932 SNIP 0.86
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.05 SNIP 0.844 CiteScore 1.73
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.099 SNIP 0.992 CiteScore 1.81
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 0.647 SNIP 0.756 CiteScore 1.25
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.266 SNIP 1.545 CiteScore 2.05
Neutron and synchrotron X-ray studies of recrystallization kinetics

General information
State: Published
Authors: Juul Jensen, D. (Intern), Godiksen, R. B. (Intern)
Pages: 3065-3069
Publication date: 2008
Conference: 137th TMS Annual Meeting and Exhibition, New Orleans, United States, 09/03/2008 - 09/03/2008
Main Research Area: Technical/natural sciences

Publication information
Journal: Metallurgical and Materials Transactions. A
Volume: 39
Issue number: 13
ISSN (Print): 1073-5623
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
Structural parameters and annealing behaviour of heavily rolled aluminium
Three-dimensional geometric simulations of random anisotropic growth during transformation phenomena

In this paper, the effects of anisotropic growth during transformation processes are investigated by geometric simulations of randomly oriented shape preserved ellipsoids in three dimensions and the applicability of idealized models are tested. Surprisingly, the results show that the models can predict the results for random ellipsoids up to aspect ratios of at least four, making the effects of random anisotropic growth less pronounced than what has previously been predicted from two-dimensional simulations or other, more restrictive three-dimensional simulations. (c) 2007 Acta Materialia Inc. Published by Elsevier Ltd. All rights reserved.
3D spatial distribution of nuclei in 90 % cold rolled aluminium

General information
State: Published
Authors: Sükösd, Z. (Ekstern), Hannesson, K. (Intern), Wu, G. (Ekstern), Juul Jensen, D. (Intern)
Pages: 345-350
Publication date: 2007
Conference: 3rd International Conference on Recrystallization and Grain Growth, Jeju Island, Korea, Republic of, 10/06/2007 - 10/06/2007
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science Forum
Volume: 558-559
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
BFI (2014): BFI-level 1
Scopus rating (2014): SNIP 0.448 SJR 0.269 CiteScore 0.33
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SNIP 0.342 SJR 0.235 CiteScore 0.28
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SNIP 0.467 SJR 0.279 CiteScore 0.34
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SNIP 0.419 SJR 0.247 CiteScore 0.33
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SNIP 0.406 SJR 0.271
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SNIP 0.389 SJR 0.343
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.297 SNIP 0.358
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.314 SNIP 0.5
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.37 SNIP 0.511
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.41 SNIP 0.56
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.449 SNIP 0.575
Web of Science (2004): Indexed yes
Scopus rating (2003): SNIP 0.548 SJR 0.457
Web of Science (2003): Indexed yes
Scopus rating (2002): SNIP 0.514 SJR 0.432
Web of Science (2002): Indexed yes
Scopus rating (2001): SNIP 0.524 SJR 0.403
Web of Science (2001): Indexed yes
Scopus rating (2000): SNIP 0.549 SJR 0.49
Web of Science (2000): Indexed yes
Scopus rating (1999): SNIP 0.526 SJR 0.548
Original language: English
DOIs: 10.4028/www.scientific.net/MSF.558-559.345
Source: orbit
Source-ID: 215702
Publication: Research - peer-review › Conference article – Annual report year: 2007
Development of the cube texture at low annealing temperatures in highly rolled pure nickel

**General information**
State: Published
Authors: Li, X. (Ekstern), Liu, W. (Ekstern), Godfrey, A. (Ekstern), Juul Jensen, D. (Intern), Liu, Q. (Ekstern)
Pages: 3531-3540
Publication date: 2007
Main Research Area: Technical/natural sciences

**Publication information**
Volume: 55
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.67 SJR 3.283 SNIP 2.674
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.542 SNIP 2.927 CiteScore 5.22
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 4.045 SNIP 3.348 CiteScore 5.16
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 3.29 SNIP 2.709 CiteScore 4.37
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.409 SNIP 2.917 CiteScore 4.28
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.247 SNIP 2.81 CiteScore 4.27
ISI indexed (2011): ISI indexed yes
Effect of annealing temperature on recrystallisation in Al (AA1200) cold rolled to a true strain of 4

**General information**
State: Published
Authors: Wu, G. (Ekstern), Juul Jensen, D. (Intern)
Pages: 395-400
Publication date: 2007
Conference: 3rd International Conference on Recrystallization and Grain Growth, Jeju Island, Korea, Republic of, 10/06/2007 - 10/06/2007
Main Research Area: Technical/natural sciences

**Publication information**
Journal: Materials Science Forum
Volume: 558-559
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
BFI (2014): BFI-level 1
Scopus rating (2014): SNIP 0.448 SJR 0.269 CiteScore 0.33
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SNIP 0.342 SJR 0.235 CiteScore 0.28
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SNIP 0.467 SJR 0.279 CiteScore 0.34
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SNIP 0.419 SJR 0.247 CiteScore 0.33
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SNIP 0.406 SJR 0.271
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SNIP 0.389 SJR 0.343
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.297 SNIP 0.358
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.314 SNIP 0.5
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.37 SNIP 0.511
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.41 SNIP 0.56
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.449 SNIP 0.575
Web of Science (2004): Indexed yes
Scopus rating (2003): SNIP 0.548 SJR 0.457
Web of Science (2003): Indexed yes
Scopus rating (2002): SNIP 0.514 SJR 0.432
Web of Science (2002): Indexed yes
Scopus rating (2001): SNIP 0.524 SJR 0.403
Web of Science (2001): Indexed yes
Scopus rating (2000): SNIP 0.549 SJR 0.49
Web of Science (2000): Indexed yes
Scopus rating (1999): SNIP 0.526 SJR 0.548
Original language: English
DOIs: 10.4028/www.scientific.net/MSF.558-559.395
Source: orbit
Source-ID: 215704
Publication: Research - peer-review › Conference article – Annual report year: 2007

Effects of distributions of growth rates on recrystallization kinetics and microstructure
The effects on recrystallization kinetics and microstructure of growth rate distributions rather than a single growth rate for recrystallizing grains were investigated by geometric simulations. The grains were set to grow as spheres with radii \( r = A \text{t}1-\alpha \). The results show that distributions in \( A \) and \( \alpha \) may produce significant changes in the microstructure and texture, whereas only distributions in \( \alpha \) may change the overall evolution in kinetics represented by \( V-v(t) \) by completely changing the shape of the kinetics curve. (c) 2007 Acta Materialia Inc. Published by Elsevier Ltd. All rights reserved.
Mapping partially recrystallised structures by 3DXRD

General information
State: Published
Authors: West, S. (Intern), Winther, G. (Intern), Margulies, L. (Intern), Bergbäck Knudsen, E. (Intern), Sørensen, H. O. (Intern), Schmidt, S. (Intern), Juul Jensen, D. (Intern)
Pages: 389-394
Publication date: 2007
Conference: 3rd International Conference on Recrystallization and Grain Growth, Jeju Island, Korea, Republic of, 10/06/2007 - 10/06/2007
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science Forum
Volume: 558-559
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
BFI (2014): BFI-level 1
Scopus rating (2014): SNIP 0.448 SJR 0.269 CiteScore 0.33
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SNIP 0.342 SJR 0.235 CiteScore 0.28
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SNIP 0.467 SJR 0.279 CiteScore 0.34
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SNIP 0.419 SJR 0.247 CiteScore 0.33
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Microstructural-based measurement of local stored energy variations in deformed metals

General information
State: Published
Authors: Godfrey, A. (Ekstern), Hansen, N. (Intern), Juul Jensen, D. (Intern)
Pages: 2329-2339
Publication date: 2007
Main Research Area: Technical/natural sciences

Publication information
Journal: Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science
Volume: 38
ISSN (Print): 1073-5623
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.91 SJR 1.179 SNIP 1.179
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.231 SNIP 1.332 CiteScore 1.78
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Misorientation aspects of growth during recrystallisation

General information
State: Published
Organisations: Materials Research Division. Management, Materials Research Division, Risø National Laboratory for Sustainable Energy, Metal Structures in Four Dimensions
Authors: Juul Jensen, D. (Intern), Rowenhorst, D. (Ekstern), Schmidt, S. (Intern)
Pages: 85-92
Publication date: 2007
Conference: 3rd International Conference on Recrystallization and Grain Growth, Jeju Island, Korea, Republic of, 10/06/2007 - 10/06/2007
Orientations of recrystallization nuclei developed in columnar-grained Ni at triple junctions and a high-angle grain boundary

General information
State: Published
Authors: Wu, G. (Ekstern), Juul Jensen, D. (Intern)
Pages: 4955-4964
Publication date: 2007
Main Research Area: Technical/natural sciences

Publication information
Volume: 55
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.67 SJR 3.283 SNIP 2.674
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.542 SNIP 2.927 CiteScore 5.22
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 4.045 SNIP 3.348 CiteScore 5.16
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 3.29 SNIP 2.709 CiteScore 4.37
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.409 SNIP 2.917 CiteScore 4.28
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.247 SNIP 2.81 CiteScore 4.27
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 3.745 SNIP 2.724
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 3.677 SNIP 2.648
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 3.863 SNIP 2.787
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 3.298 SNIP 3.068
Web of Science (2007): Indexed yes
Simulation of recrystallization using molecular dynamics; Effects of the interatomic potential

General information
State: Published
Authors: Godiksen, R. B. (Intern), Trautt, Z. (Ekstern), Upmanyu, M. (Ekstern), Schmidt, S. (Intern), Juul Jensen, D. (Intern)
Pages: 1081-1086
Publication date: 2007
Conference: 3rd International Conference on Recrystallization and Grain Growth, Jeju Island, Korea, Republic of, 10/06/2007 - 10/06/2007
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science Forum
Volume: 558-559
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
BFI (2014): BFI-level 1
Scopus rating (2014): SNIP 0.448 SJR 0.269 CiteScore 0.33
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SNIP 0.342 SJR 0.235 CiteScore 0.28
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SNIP 0.467 SJR 0.279 CiteScore 0.34
ISI indexed (2012): ISI indexed yes
Simulations of boundary migration during recrystallization using molecular dynamics

We have applied an atomistic simulation methodology based on molecular dynamics to study grain boundary migration in crystalline materials, driven by the excess energy of dislocation arrangements. This method is used to simulate recrystallization in metals. The simulations reveal that the migration process is not uniform as assumed in many recrystallization models, but that the grain boundaries migrate in an irregular fashion and exhibit a strong dependence on the local presence of dislocations, which can distort the local migration process significantly. (c) 2007 Acta Materialia Inc. Published by Elsevier Ltd. All rights reserved.

General information
State: Published
Organisations: Metal Structures in Four Dimensions, Materials Research Division, Risø National Laboratory for Sustainable Energy, Experimental Surface and Nanomaterials Physics, Department of Physics, Materials Research Division, Management, Center for Individual Nanoparticle Functionality, Center for Nanoteknologi, Colorado School of Mines
Authors: Godiksen, R. B. (Intern), Trautt, Z. (Ekstern), Upmanyu, M. (Ekstern), Schiøtz, J. (Intern), Juul Jensen, D. (Intern), Schmidt, S. (Intern)
Pages: 6383-6391
Publication date: 2007
Main Research Area: Technical/natural sciences

Publication information
Journal: Acta Materialia
Three dimensional characterization of grain structures by EBSP and 3DXRD

General information
State: Published
Organisations: Metal Structures in Four Dimensions, Materials Research Division, Risø National Laboratory for Sustainable Energy, Materials Research Division, Management
Authors: Hannesson, K. (Intern), Juul Jensen, D. (Intern)
Pages: 751-756
Publication date: 2007
Conference: 3rd International Conference on Recrystallization and Grain Growth, Jeju Island, Korea, Republic of, 10/06/2007 - 10/06/2007
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science Forum
Volume: 558-559
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
BFI (2014): BFI-level 1
Scopus rating (2014): SNIP 0.448 SJR 0.269 CiteScore 0.33
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SNIP 0.342 SJR 0.235 CiteScore 0.28
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SNIP 0.467 SJR 0.279 CiteScore 0.34
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SNIP 0.419 SJR 0.247 CiteScore 0.33
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SNIP 0.406 SJR 0.271
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SNIP 0.389 SJR 0.343
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.297 SNIP 0.358
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.314 SNIP 0.5
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.37 SNIP 0.511
Web of Science (2006): Indexed yes
Analytical expression for the evolution of interfacial area density between transformed grains during nucleation and growth transformations

This paper shows that interfacial area density between transformed grains during nucleation and growth transformations and the contiguity are useful descriptors of microstructural evolution. These descriptors are evaluated analytically and compared with results from computer simulation. Usage of these descriptors makes microstructural path analysis even more reliable and robust. (c) 2006 Acta Materialia Inc. Published by Elsevier Ltd. All rights reserved.

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Metal Structures in Four Dimensions, Materials Research Division
Pages: 1509-1513
Publication date: 2006
Main Research Area: Technical/natural sciences

Publication information
Journal: Scripta Materialia
Volume: 54
Issue number: 8
ISSN (Print): 1359-6462
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.71 SJR 1.901 SNIP 1.696
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.3 SNIP 1.876 CiteScore 3.54
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.744 SNIP 2.124 CiteScore 3.55
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.347 SNIP 1.975 CiteScore 3.19
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
Nondestructive approaches for 3-D materials characterization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Lauridsen, E. (Intern), Dey, S. (Intern), Fonda, R. (Ekstern), Juul Jensen, D. (Intern)
Pages: 40-44
Publication date: 2006
Main Research Area: Technical/natural sciences

Publication information
Journal: J O M
Volume: 58
Issue number: 12
ISSN (Print): 1047-4838
Ratings:
Non-destructive characterization of recrystallization kinetics using three-dimensional X-ray diffraction microscopy

Three-dimensional X-ray diffraction (3DXRD) is used to characterize the nucleation and early growth of individual bulk nuclei in situ during recrystallization of 92% cold-rolled copper. It is found that some cube nuclei, but not all, have a significantly faster initial growth than the average growth kinetics. These results are discussed and compared to previous 3DXRD results for recrystallization of aluminum alloys, and implications of the results on modeling of recrystallization are considered. Finally, a new 3DXRD technique suitable for non-destructive 3D characterization is outlined and its potential for recrystallization studies is discussed. (c) 2006 Acta Materialia Inc. Published by Elsevier Ltd. All rights reserved.
Recrystallization of AA1050 studied by 3DXRD

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 1569-1578
Publication date: 2006
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science Forum
Volume: 519-521
Issue number: Pt. 1-2
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
BFI (2014): BFI-level 1
Scopus rating (2014): SNIP 0.448 SJR 0.269 CiteScore 0.33
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SNIP 0.342 SJR 0.235 CiteScore 0.28
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SNIP 0.467 SJR 0.279 CiteScore 0.34
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SNIP 0.419 SJR 0.247 CiteScore 0.33
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SNIP 0.406 SJR 0.271
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SNIP 0.389 SJR 0.343
X-ray microscopy in four dimensions

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Metal Structures in Four Dimensions, Materials Research Division
Authors: Juul Jensen, D. (Intern), Lauridsen, E. (Intern), Margulies, L. (Intern), Poulsen, H. (Intern), Schmidt, S. (Intern), Sørensen, H. (Intern), Vaughan, G. (Ekstern)
Pages: 18-25
Publication date: 2006
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Today
Volume: 9
ISSN (Print): 1369-7021
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 7.167 SNIP 5.305 CiteScore 11.2
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 6.61 SNIP 4.479 CiteScore 10.26
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 4.783 SNIP 3.386 CiteScore 7.4
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 4.376 SNIP 3.261 CiteScore 6.81
A method is presented for determination of the local deformation strain of individual grains in the bulk of a columnar grain sample. The method, based on measurement of the change in grain area of each grain, is applied to 12% cold rolled nickel. Large variations are observed in the local strain associated with each grain. (c) 2005 Acta Materialia Inc. Published by Elsevier Ltd. All rights reserved.
Local orientation measurements in 3D

The 3 Dimensional X-Ray Diffraction (3DXRD) method is presented and its potentials illustrated by examples. The 3DXRD method is based on diffraction of high energy X-rays and allows fast and nondestructive 3D characterization of the local distribution of crystallographic orientations in the bulk. The spatial resolution is about 1x5x5 μm but diffraction from microstructural elements as small as 100 nm may be monitored within suitable samples. As examples of the use of the 3DXRD method, it is chosen to present results for complete 3D characterization of grain structures, in-situ "filming" of the growth of one interior grain during recrystallization, recrystallization kinetics of individual grains and crystallographic rotations of individual grains during tensile deformation.

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 49-54
Publication date: 2005
Conference: International conference on texture and Anisotropy of Polycrystals II (ITAP 2), Metz (FR), 7-9 Jul, 01/01/2004
Main Research Area: Technical/natural sciences

Publication information
Journal: Solid State Phenomena
Volume: 105
ISSN (Print): 1012-0394
Ratings:
BiF (2018): BiF-level 1
BiF (2017): BiF-level 1
BiF (2016): BiF-level 1
Scopus rating (2016): SJR 0.254 SNIP 0.478 CiteScore 0.42
BiF (2015): BiF-level 1
Scopus rating (2015): SJR 0.219 SNIP 0.547 CiteScore 0.38
BiF (2014): BiF-level 1
Scopus rating (2014): SJR 0.307 SNIP 0.58 CiteScore 0.42
BiF (2013): BiF-level 1
Scopus rating (2013): SJR 0.277 SNIP 0.57 CiteScore 0.37
ISI indexed (2013): ISI indexed yes
BiF (2012): BiF-level 1
Scopus rating (2012): SJR 0.241 SNIP 0.452 CiteScore 0.3
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BiF (2011): BiF-level 1
Scopus rating (2011): SJR 0.211 SNIP 0.44 CiteScore 0.31
ISI indexed (2011): ISI indexed yes
BiF (2010): BiF-level 1
Scopus rating (2010): SJR 0.198 SNIP 0.259
BiF (2009): BiF-level 1
Scopus rating (2009): SJR 0.23 SNIP 0.271
BiF (2008): BiF-level 1
Metal structures in four dimensions

General information
State: Published
Organisations: Materials Research Division, Risø National Laboratory for Sustainable Energy
Authors: Schmidt, S. (Intern), Juul Jensen, D. (Intern)
Pages: 181-187
Publication date: 2005
Main Research Area: Technical/natural sciences

Publication information
Journal: Archives of Metallurgy and Materials
Volume: 50
ISSN (Print): 1733-3490
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 0.347 SNIP 0.74 CiteScore 0.85
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.471 SNIP 1.185 CiteScore 1.19
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.621 SNIP 1.433 CiteScore 1.34
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.356 SNIP 1.168 CiteScore 0.89
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.242 SNIP 0.966 CiteScore 0.61
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.21 SNIP 0.681 CiteScore 0.42
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.287 SNIP 0.8
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.207 SNIP 0.383
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.217 SNIP 0.395
Nucleation of recrystallization observed in situ in the bulk of a deformed metal

Nucleation of recrystallization is studied in situ in the bulk by three-dimensional X-ray diffraction. Copper samples cold rolled 20% are investigated. The crystallographic orientations near triple junction lines are characterized before, during and after annealing. Three nuclei are identified and it is shown that two nuclei are twin related to their parent grain and one nucleus has an orientation, which is neither present in the deformed parent grains nor first order twin related to any of them. Data on the nucleation kinetics is also presented. (c) 2005 Acta Materialia Inc. Published by Elsevier Ltd. All rights reserved.
Orientation correlations in metal structures from the micrometer to nanometer range

Distributions of boundary misorientations in aluminium are measured as a function of deformation for strains up to 10. These experimental distributions are compared to misorientation distributions generated from a random mix of orientations present in the microstructure. It is found that for all strains investigated, the experimental distributions contain a significant higher fraction of low angle boundaries than that expected from the theoretically calculated distributions assuming a random mixing of orientations. This means that there are clear correlations between neighbouring orientations in the microstructure even after strains as large as 10. A similar analysis is done for annealed samples. Here it is found that conventional recrystallisation of a low strained sample leads to almost similar experimental and calculated distributions i.e. almost no correlations exist between neighbouring grains, whereas annealing a sample deformed to epsilon=10 leads to significant structural coarsening, but a large fraction of low angle boundaries are maintained in the experimental misorientation distribution, which is not seen in the theoretically calculated distribution.

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Materials Research Division
Authors: Juul Jensen, D. (Intern), Bowen, J. R. (Intern), Mishin, O. (Intern)
Pages: 307-314
Publication date: 2005
Orientation of recrystallization nuclei studied by 3DXRD

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Larsen, A. (Intern)
Pages: 1285-1290
Publication date: 2005
Recrystallisation kinetics: From statics to dynamics and from 2D to 3D

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 1365-1373
Publication date: 2005
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science and Technology
Volume: 21
ISSN (Print): 0267-0836
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.43 SJR 0.814 SNIP 0.812
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.632 SNIP 0.764 CiteScore 1.1
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.788 SNIP 1.005 CiteScore 1.1
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.636 SNIP 0.868 CiteScore 0.92
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.683 SNIP 0.979 CiteScore 0.86
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.674 SNIP 1.059 CiteScore 0.94
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 0.638 SNIP 0.779
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 0.876 SNIP 1.08
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.785 SNIP 1.035
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.749 SNIP 1.195
Recrystallisation kinetics of aluminium AA1200 cold rolled to true strain of 2

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Wu, G. (Intern), Juul Jensen, D. (Intern)
Pages: 1407-1411
Publication date: 2005
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science and Technology
Volume: 21
ISSN (Print): 0267-0836
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.43 SJR 0.814 SNIP 0.812
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.632 SNIP 0.764 CiteScore 1.1
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.788 SNIP 1.005 CiteScore 1.1
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.636 SNIP 0.868 CiteScore 0.92
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.683 SNIP 0.979 CiteScore 0.86
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.674 SNIP 1.059 CiteScore 0.94
The orientations of nuclei at triple junctions in deformed columnar grain Ni

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Wu, G. (Ekstern), Godfrey, A. (Ekstern), Juul Jensen, D. (Intern), Liu, Q. (Ekstern)
Pages: 1309-1314
Publication date: 2005
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science Forum
Volume: 495-497
Issue number: Pt. 1-2
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
BFI (2014): BFI-level 1
Scopus rating (2014): SNIP 0.448 SJR 0.269 CiteScore 0.33
Towards atomic level simulations of recrystallisation - setting up suitable geometry

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Materials Research Division
Pages: 1373-1375
Publication date: 2005
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science and Technology
A method for in-situ measurements of the growth in the bulk of deformed single crystals at the 3DXRD microscope

General information
State: Published
Organisations: Materials Research Division, Risø National Laboratory for Sustainable Energy
Authors: Schmidt, S. (Intern), Juul Jensen, D. (Intern)
Publication date: 2004

Host publication information
Title of host publication: Interfacial engineering for optimized properties 3
Place of publication: Warrendale, PA (US)
Publisher: MRS
Editors: Schuh, C., Kumar, M., Randle, V., Carter, C.
Series: Materials Research Society Symposium Proceedings, v. 819
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 307539
Publication: Research › Article in proceedings – Annual report year: 2004

Effects on nuclei clustering on recrystallization kinetics

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Vandermeer, R. (Ekstern), Juul Jensen, D. (Intern)
Pages: 193-196
Publication date: 2004
Conference: 2nd Joint International Conference on Recrystallization and Grain Growth, ReX and GG2, Annecy, France, 30/08/2004 - 30/08/2004
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science Forum
Volume: 467-470
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
BFI (2014): BFI-level 1
Scopus rating (2014): SNIP 0.448 SJR 0.269 CiteScore 0.33
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SNIP 0.342 SJR 0.235 CiteScore 0.28
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SNIP 0.467 SJR 0.279 CiteScore 0.34
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SNIP 0.419 SJR 0.247 CiteScore 0.33
Evolution of deformation microstructures in 3D. Proceedings

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Materials Research Division
Number of pages: 601
Publication date: 2004

Publication Information
Place of publication: Roskilde
Publisher: Risø National Laboratory
ISBN (Print): 87-550-3362-8
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 307204
Publication: Research - peer-review › Book – Annual report year: 2004

Evolution of Mechanical and Microstructural Properties of ECAP Deformed Copper

General information
State: Published
Growth aspects of recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Materials Research Division
Authors: Juul Jensen, D. (Intern), Lauridsen, E. (Intern), Schmidt, S. (Intern), Vandermeer, R. (Ekstern)
Pages: 69-70
Publication date: 2004
Conference: Symposium on microstructural stability in honor of professor Roger D. Doherty, Charlotte, NC (US), 14-18 Mar, 01/01/2004
Main Research Area: Technical/natural sciences

Publication information
Journal: TMS Letters
Volume: 1
Original language: English
Source: orbit
Source-ID: 307138
Publication: Research - peer-review › Conference article – Annual report year: 2004

Growth rate distributions during recrystallization of copper

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Vandermeer, R. (Ekstern), Lauridsen, E. (Intern), Juul Jensen, D. (Intern)
Pages: 197-202
Publication date: 2004
Conference: 2nd Joint International Conference on Recrystallization and Grain Growth, ReX and GG2, Annecy, France, 30/08/2004 - 30/08/2004
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science Forum
Volume: 467-470
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
In-situ investigation of bulk nucleation by X-ray diffraction

**General information**

**State:** Published

**Organisations:** Risø National Laboratory for Sustainable Energy

**Authors:** Larsen, A. (Intern), Gundlach, C. (Intern), Poulsen, H. (Intern), Margulies, L. (Intern), Xing, Q. (Intern), Juul Jensen, D. (Intern)

**Pages:** 81-86

**Publication date:** 2004

**Conference:** 2nd Joint International Conference on Recrystallization and Grain Growth, ReX and GG2, Annecy, France, 30/08/2004 - 30/08/2004

**Main Research Area:** Technical/natural sciences
Publication information
Journal: Materials Science Forum
Volume: 467-470
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
BFI (2014): BFI-level 1
Scopus rating (2014): SNIP 0.448 SJR 0.269 CiteScore 0.33
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SNIP 0.342 SJR 0.235 CiteScore 0.28
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SNIP 0.467 SJR 0.279 CiteScore 0.34
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SNIP 0.419 SJR 0.247 CiteScore 0.33
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SNIP 0.406 SJR 0.271
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SNIP 0.389 SJR 0.343
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.297 SNIP 0.358
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.314 SNIP 0.5
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.37 SNIP 0.511
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.41 SNIP 0.56
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.449 SNIP 0.575
Web of Science (2004): Indexed yes
Scopus rating (2003): SNIP 0.548 SJR 0.457
Web of Science (2003): Indexed yes
Scopus rating (2002): SNIP 0.514 SJR 0.432
Web of Science (2002): Indexed yes
Scopus rating (2001): SNIP 0.524 SJR 0.403
Web of Science (2001): Indexed yes
Scopus rating (2000): SNIP 0.549 SJR 0.49
Web of Science (2000): Indexed yes
Scopus rating (1999): SNIP 0.526 SJR 0.548
Original language: English
DOIs:
10.4028/www.scientific.net/MSF.467-470.81
In-situ measurements of growth of nuclei within the bulk of deformed aluminum single crystals

General information
State: Published
Organisations: Materials Research Division, Risø National Laboratory for Sustainable Energy
Authors: Schmidt, S. (Intern), Huang, X. (Intern), Juul Jensen, D. (Intern)
Pages: 189-192
Publication date: 2004
Conference: 2nd Joint International Conference on Recrystallization and Grain Growth, ReX and GG2, Annecy, France, 30/08/2004 - 30/08/2004
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science Forum
Volume: 467-470
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
BFI (2014): BFI-level 1
Scopus rating (2014): SNIP 0.448 SJR 0.269 CiteScore 0.33
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SNIP 0.342 SJR 0.235 CiteScore 0.28
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SNIP 0.467 SJR 0.279 CiteScore 0.34
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SNIP 0.419 SJR 0.247 CiteScore 0.33
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SNIP 0.406 SJR 0.271
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SNIP 0.389 SJR 0.343
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.297 SNIP 0.358
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.314 SNIP 0.5
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.37 SNIP 0.511
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.41 SNIP 0.56
Web of Science (2005): Indexed yes
Local measurements of stored energy: Microstructural and stereological considerations

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Godfrey, A. (Ekstern), Liu, Q. (Ekstern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 317-322
Publication date: 2004

Host publication information
Title of host publication: Evolution of deformation microstructures in 3D. Proceedings
Place of publication: Roskilde
Publisher: Risø National Laboratory
ISBN (Print): 87-550-3362-8
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 307211
Publication: Research › Article in proceedings – Annual report year: 2004

Microstructural parameters and flow stress in Al-0.13% Mg deformed by ECAE processing

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Bowen, J. R. (Intern), Prangnell, P. (Ekstern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 235-239
Publication date: 2004
Main Research Area: Technical/natural sciences

Publication information
Volume: 387-389
ISSN (Print): 0921-5093
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Non-destructive characterisation of grain boundaries in 3D

General information
Recrystallization kinetics in the bulk and at the surface

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Lund, M. (Ekstern), Larsen, A. (Intern), Bowen, J. R. (Intern)
Pages: 147-152
Publication date: 2004
Conference: 2nd Joint International Conference on Recrystallization and Grain Growth, ReX and GG2, Annecy, France, 30/08/2004 - 30/08/2004
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science Forum
Volume: 467-470
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
BFI (2014): BFI-level 1
Scopus rating (2014): SNIP 0.448 SJR 0.269 CiteScore 0.33
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SNIP 0.342 SJR 0.235 CiteScore 0.28
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SNIP 0.467 SJR 0.279 CiteScore 0.34
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SNIP 0.419 SJR 0.247 CiteScore 0.33
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SNIP 0.406 SJR 0.271
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
**Statistical TEM analysis of boundary misorientations in aluminium deformed to large and extra large strains by ECAE**

**General information**

State: Published  
Organisations: Materials Research Division, Risø National Laboratory for Sustainable Energy  
Authors: Mishin, O. (Intern), Godfrey, A. (Ekstern), Liu, Q. (Ekstern), Juul Jensen, D. (Intern)  
Pages: 445-451  
Publication date: 2004

**Host publication information**

Title of host publication: Evolution of deformation microstructures in 3D. Proceedings  
Place of publication: Roskilde  
Publisher: Risø National Laboratory  
ISBN (Print): 87-550-3362-8  
Main Research Area: Technical/natural sciences  
Source: orbit  
Source-ID: 307216  
Publication: Research › Article in proceedings – Annual report year: 2004

**The effect of roll gap geometry on microstructure in cold-rolled aluminum**

Microstructure and texture are analyzed through the thickness of two aluminum plates cold-rolled 40% with different roll gap geometries. It is found that both texture and microstructure are strongly affected by the rolling geometry. After rolling with intermediate-size draughts a rolling-type texture is developed throughout the plate thickness. In this case, grains are subdivided by extended planar dislocation boundaries preferentially aligned at an angle of 40 +/- 15 degrees to the rolling direction. In the plate rolled with small draughts, shear texture components appear in the intermediate layers. In these layers, extended planar dislocation boundaries are frequently found to be inclined closely to the rolling direction. The subsurface and central layers of this plate exhibit microstructures similar to those in the plate rolled with intermediate draughts. It is suggested that the development of different textures and microstructures at different depths is related to the activation of different slip systems due to through-thickness strain gradients.
Three-dimensional X-ray diffraction microscopy using high-energy X-rays

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Poulsen, H. (Intern), Juul Jensen, D. (Intern), Vaughan, G. (Ekstern)
Pages: 166-169
Publication date: 2004
Main Research Area: Technical/natural sciences

Publication information
Journal: M R S Bulletin
Volume: 29
ISSN (Print): 0883-7694
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 2.157 SNIP 1.669 CiteScore 3.2
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.697 SNIP 2.299 CiteScore 4.68
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.074 SNIP 1.911 CiteScore 3.61
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 2.036 SNIP 1.557 CiteScore 3
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 2.126 SNIP 1.923 CiteScore 3.04
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 2.095 SNIP 1.886 CiteScore 3.29
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 2.566 SNIP 2.147
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 2.021 SNIP 2.177
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 2.201 SNIP 2.076
Watching the growth of bulk grains during recrystallization of deformed metals

We observed the in situ growth of a grain during recrystallization in the bulk of a deformed sample. We used the three-dimensional x-ray diffraction microscope located at the European Synchrotron Radiation Facility in Grenoble, France. The results showed a very heterogeneous growth pattern, contradicting the classical assumption of smooth and spherical growth of new grains during recrystallization. This type of in situ bulk measurement opens up the possibility of obtaining experimental data on scientific topics that before could only be analyzed theoretically on the basis of the statistical characterization of microstructures. For recrystallization, the in situ method includes direct measurements of nucleation and boundary migration through a deformed matrix.
3DXRD microscopy (invited talk)

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Number of pages: 7
Publication date: 2003

Host publication information
Title of host publication: Final program
Place of publication: Chicago
Publisher: TMS
Main Research Area: Technical/natural sciences
Source: orbit

Original language: English
DOIs:
10.1126/science.1098627
Source: orbit
Source-ID: 306968
Publication: Research - peer-review › Journal article – Annual report year: 2004
Automatic determination of recrystallization parameters in metals by electron backscatter pattern line scans

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Larsen, A. (Intern), Juul Jensen, D. (Intern)
Pages: 271-282
Publication date: 2003
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Characterization
Volume: 51
ISSN (Print): 1044-5803
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.75 SJR 1.24 SNIP 1.54
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 1.242 SNIP 1.606 CiteScore 2.61
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.373 SNIP 2.025 CiteScore 2.47
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.183 SNIP 1.79 CiteScore 2.31
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.227 SNIP 2.063 CiteScore 2.26
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.132 SNIP 2.21 CiteScore 2.13
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.231 SNIP 1.767
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.002 SNIP 1.541
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.81 SNIP 1.299
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.623 SNIP 1.16
Scopus rating (2006): SJR 0.625 SNIP 0.948
Scopus rating (2005): SJR 0.693 SNIP 1.218
Scopus rating (2004): SJR 0.67 SNIP 1.017
Scopus rating (2003): SJR 0.468 SNIP 0.899
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.457 SNIP 0.607
Web of Science (2002): Indexed yes
Center for Fundamental Research. Metal Structures in Four Dimensions. Annual report 2002

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Materials Research Division
Number of pages: 16
Publication date: 2003

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 310360
Publication: Research › Report – Annual report year: 2003

Growth kinetics of individual grains during recrystallization with an intermediate cooling cycle

General information
State: Published
Organisations: Materials Research Division, Risø National Laboratory for Sustainable Energy
Pages: 513-518
Publication date: 2003
Main Research Area: Technical/natural sciences

Publication information
Journal: Scripta Materialia
Volume: 48
ISSN (Print): 1359-6462
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.71 SJR 1.901 SNIP 1.696
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.3 SNIP 1.876 CiteScore 3.54
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.744 SNIP 2.124 CiteScore 3.55
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.347 SNIP 1.975 CiteScore 3.19
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
In situ characterisation of thermomechanical processes

General information
State: Published
Organisations: Materials Research Division, Risø National Laboratory for Sustainable Energy
Pages: 186-192
Publication date: 2003

Host publication information
Title of host publication: Conference proceedings
Place of publication: Sheffield
Publisher: University of Sheffield, Department of Engineering Materials
Editors: Palmiere, E., Mahfouf, M., Pinna, C.
ISBN (Print): 0-9522507-3-X
Main Research Area: Technical/natural sciences
Microstructural parameters and flow stress in Al-0.13%Mg deformed by ECAE

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Materials Research Division
Authors: Bowen, J. R. (Intern), Mishin, O. (Intern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Number of pages: 64
Publication date: 2003

Host publication information
Title of host publication: Fundamental aspects of the deformation and fracture of materials. Book of abstracts
Place of publication: Budapest
Publisher: ICSMA
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 305831
Publication: Research › Conference abstract in proceedings – Annual report year: 2003

Microstructures and boundary populations in materials produced by equal channel angular extrusion

General information
State: Published
Organisations: Materials Research Division, Risø National Laboratory for Sustainable Energy
Authors: Mishin, O. (Intern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 320-328
Publication date: 2003
Main Research Area: Technical/natural sciences

Publication information
Volume: 342
ISSN (Print): 0921-5093
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.39 SJR 1.666 SNIP 1.832
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.78 SNIP 1.849 CiteScore 3.01
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.285 SNIP 2.617 CiteScore 3.32
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.879 SNIP 2.231 CiteScore 2.86
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.737 SNIP 2.351 CiteScore 2.5
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Non-destructive mapping of grains in three dimensions

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Materials Research Division
Pages: 1093-1096
Publication date: 2003
Main Research Area: Technical/natural sciences

Publication information
Journal: Scripta Materialia
Volume: 49
ISSN (Print): 1359-6462
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.71 SJR 1.901 SNIP 1.696
Web of Science (2016): Indexed yes
Orientation correlations in metal substructures from the micrometre to nanometre range

General information
Orientation inhomogeneities resolved by 3D X-ray diffraction and EBSD

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 490-492
Publication date: 2003

Host publication information
Title of host publication: Proceedings
Place of publication: Fulton, MD (US)
Publisher: NEAT Press
Editors: Khan, A., Kazmi, R., Zhou, J.
ISBN (Print): 0-9659463-4-7
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 305826
Publication: Research › Article in proceedings – Annual report year: 2003

Orientation relationships between recrystallization nuclei at triple junctions and deformed structures

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Sabin, T. (Ekstern), Winther, G. (Intern), Juul Jensen, D. (Intern)
Pages: 3999-4011
Publication date: 2003
Main Research Area: Technical/natural sciences

Publication information
Volume: 51
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.67 SJR 3.283 SNIP 2.674
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.542 SNIP 2.927 CiteScore 5.22
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Recrystallisation growth rates in hot deformed aluminium

**General information**

State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Vandermeer, R. (Ekstern)
Pages: 13-25
Publication date: 2003
Recrystallization at the 3DXRD microscope

General information
State: Published
Organisations: Materials Research Division, Risø National Laboratory for Sustainable Energy
Authors: Schmidt, S. (Intern), Juul Jensen, D. (Intern)
Pages: 169-174
Publication date: 2003

Host publication information
Title of host publication: Proceedings
Place of publication: Pittsburgh, PA
Publisher: ASM International
Editors: Tiryakioglu, M., Lalli, L.
ISBN (Print): 0-87170-787-X
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 306170
Publication: Research › Article in proceedings – Annual report year: 2003

Recrystallization in hot vs cold deformed commercial aluminum: A microstructure path comparison

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Vandermeer, R. (Ekstern), Juul Jensen, D. (Intern)
Pages: 3005-3018
Publication date: 2003
Main Research Area: Technical/natural sciences

Publication information
Volume: 51
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.67 SJR 3.283 SNIP 2.674
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.542 SNIP 2.927 CiteScore 5.22
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 4.045 SNIP 3.348 CiteScore 5.16
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 3.29 SNIP 2.709 CiteScore 4.37
Recrystallization kinetics of individual bulk grains in 90% cold-rolled aluminium

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Materials Research Division
Pages: 4423-4435
Publication date: 2003
Main Research Area: Technical/natural sciences

Publication information
Volume: 51
Ratings:
Recrystallization kinetics of individual bulk grains in a commercial aluminium alloy

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Materials Research Division
Number of pages: 7
Publication date: 2003

Host publication information
Title of host publication: Abstract booklet
Place of publication: Hamburg
Publisher: DESY
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 306110
Publication: Research › Conference abstract in proceedings – Annual report year: 2003

Reply to comment on "Microstructural path and temperature dependence of recrystallization in commercial aluminum"

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Vandermeer, R. (Ekstern), Juul Jensen, D. (Intern)
Pages: 1565-1567
Publication date: 2003
Main Research Area: Technical/natural sciences

Publication information
Journal: Scripta Materialia
Volume: 48
ISSN (Print): 1359-6462
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.71 SJR 1.901 SNIP 1.696
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.3 SNIP 1.876 CiteScore 3.54
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.744 SNIP 2.124 CiteScore 3.55
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.347 SNIP 1.975 CiteScore 3.19
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.309 SNIP 2.022 CiteScore 3.01
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
The three-dimensional X-ray diffraction microscope: 3D maps of grains and grain dynamics in polycrystalline materials

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Materials Research Division
Pages: 495-498
Publication date: 2003
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal de Physique IV
Volume: 104
ISSN (Print): 1155-4339
Ratings:
BFI (2008): BFI-level 1
Web of Science (2005): Indexed yes
Web of Science (2004): Indexed yes
Web of Science (2003): Indexed yes
Web of Science (2002): Indexed yes
3D røntgen mikroskopet

General information
State: Published
Organisations: Materials Research Division, Risø National Laboratory for Sustainable Energy
Authors: Schmidt, S. (Intern), Poulsen, H. (Intern), Juul Jensen, D. (Intern)
Pages: 103-114
Publication date: 2002

Host publication information
Title of host publication: Karakterisering af materialer - fra atom til makro
Place of publication: Lyngby
Publisher: DMS
Editors: Brøndsted, P., Somers, M.
ISBN (Print): 87-97535-31-9
Main Research Area: Technical/natural sciences
Conference: Dansk Metallurgisk Selskabs vintermøde 2002, Kolding, Denmark, 02/01/2002 - 02/01/2002
Source: orbit
Source-ID: 303721
Publication: Research › Article in proceedings – Annual report year: 2002

Annealing textures

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 318-322
Publication date: 2002

Host publication information
Title of host publication: Encyclopedia of materials: Science and technology
Place of publication: Oxford
Publisher: Pergamon
Editors: Buschow, K., Cahn, R., Flemings, M., Ilschner, B., Kramer, E., Mahajan, S.
ISBN (Print): 0-08-043152-6
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 305018
Publication: Research - peer-review › Book chapter – Annual report year: 2002

Automatic characterization of recrystallizing microstructures by EBSD line scans

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Larsen, A. (Intern), Juul Jensen, D. (Intern)
Pages: 41-42
Publication date: 2002

Host publication information
Title of host publication: Extended abstracts
Volume: Risø-R-1347(EN)
Editors: Bowen, J., Godfrey, A., Panteon, W.
ISBN (Print): 87-550-3072-6
Main Research Area: Technical/natural sciences
Conference: 1st Joint Chinese-Danish Symposium, Qinhuangdao, China, 19/08/2002 - 19/08/2002
Source: orbit
Center for Fundamental Research. Metal Structures in Four Dimensions. Annual report 2001

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Materials Research Division
Authors: Winther, G. (Intern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Number of pages: 16
Publication date: 2002

Publication information
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Publication: Research › Report – Annual report year: 2002

EBSP. Method, applications, limitations and future (invited paper)

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Publication date: 2002

Host publication information
Title of host publication: Conference book
Place of publication: Lille
Publisher: French Society of Microscopies
Main Research Area: Technical/natural sciences
Conference: Joint microscopy meeting, Lille (FR), 25-28 Jun, 01/01/2002
Source: orbit
Source-ID: 304218
Publication: Research › Conference abstract in proceedings – Annual report year: 2002

From 2D to 3D microtexture investigations

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Poulsen, H. (Intern), Juul Jensen, D. (Intern)
Pages: 49-66
Publication date: 2002
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science Forum
Volume: 408-412
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
BFI (2014): BFI-level 1
In-situ characterization of thermomechanical processes

General information
State: Published
Organisations: Materials Research Division, Risø National Laboratory for Sustainable Energy
Publication date: 2002
Event: Abstract from International Conference on Thermomechanical Processing, Sheffield, United Kingdom.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 304357
Publication: Research - peer-review → Conference article – Annual report year: 2002

Scopus rating (2014): SNIP 0.448 SJR 0.269 CiteScore 0.33
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SNIP 0.342 SJR 0.235 CiteScore 0.28
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SNIP 0.467 SJR 0.279 CiteScore 0.34
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SNIP 0.419 SJR 0.247 CiteScore 0.33
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SNIP 0.406 SJR 0.271
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SNIP 0.389 SJR 0.343
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.297 SNIP 0.358
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.314 SNIP 0.5
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 0.37 SNIP 0.511
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.41 SNIP 0.56
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 0.449 SNIP 0.575
Web of Science (2004): Indexed yes
Scopus rating (2003): SNIP 0.548 SJR 0.457
Web of Science (2003): Indexed yes
Scopus rating (2002): SNIP 0.514 SJR 0.432
Web of Science (2002): Indexed yes
Scopus rating (2001): SNIP 0.524 SJR 0.403
Web of Science (2001): Indexed yes
Scopus rating (2000): SNIP 0.549 SJR 0.49
Web of Science (2000): Indexed yes
Scopus rating (1999): SNIP 0.526 SJR 0.548
Original language: English
Source: orbit
Source-ID: 305016
Publication: Research › Conference abstract for conference – Annual report year: 2002
In-situ determination of grain boundary migration during recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Lauridsen, E. (Intern), Vandermeer, R. (Ekstern)
Pages: 361-374
Publication date: 2002

Host publication information
Title of host publication: Science and technology of interfaces
Place of publication: Warrendale, PA
Publisher: TMS
Editors: Ankem, S., Pande, C., Ovid'ko, I., Ranganathan, S.
ISBN (Print): 0-87339-520-4
Main Research Area: Technical/natural sciences
Conference: 2002 TMS Annual Meeting and Exhibition, Seattle, WA, United States, 17/02/2002 - 17/02/2002
Source: orbit
Source-ID: 305019
Publication: Research - peer-review › Article in proceedings – Annual report year: 2002

Microstructural characterization in 3 dimensions (invited paper)

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 541-547
Publication date: 2002

Host publication information
Title of host publication: Proceedings. Vol. 2
Place of publication: Aalborg
Publisher: Aalborg University
Editors: Pyrz, R., Schjadt-Thomsen, J., Rauhe, J., Thomsen, T., Jensen, L.
Main Research Area: Technical/natural sciences
Conference: International Conference on New Challenges in Mesomechanics, Aalborg, Denmark, 26/08/2002 - 26/08/2002
Source: orbit
Source-ID: 304733
Publication: Research - peer-review › Article in proceedings – Annual report year: 2002

Orientation correlations in aluminium deformed by ECAE

Distributions of boundary misorientations measured in an Al–0.13%Mg alloy, processed by equal channel angular extrusion to a von Mises effective strain of 10, have been compared to misorientation distributions generated from a random mix of orientations present in the microstructure. A significant fraction of low angle boundaries is reported and orientation correlation over high angle boundaries is discussed.

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Bowen, J. R. (Intern), Mishin, O. (Intern), Prangnell, P. (Ekstern), Juul Jensen, D. (Intern)
Pages: 289-294
Publication date: 2002
Main Research Area: Technical/natural sciences

Publication information
Journal: Scripta Materialia
Volume: 47
Issue number: 5
ISSN (Print): 1359-6462
Ratings:
BFI (2018): BFI-level 2
Scopus rating (2017): SJR 2.347 SNIP 1.975 CiteScore 3.19
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.309 SNIP 2.022 CiteScore 3.01
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.333 SNIP 2.108 CiteScore 3.21
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.445 SNIP 2.125
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.574 SNIP 2.02
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.634 SNIP 2.128
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 2.229 SNIP 2.174
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 2.1 SNIP 1.915
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.831 SNIP 1.915
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.464 SNIP 1.731
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.499 SNIP 1.709
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.509 SNIP 1.345
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.301 SNIP 1.361
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.268 SNIP 1.123
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.53 SNIP 1.162
Original language: English
Aluminium alloy, Cold working, Electron diffraction, Boundaries, SEM, TEM
DOIs:
10.1016/S1359-6462(02)00109-4
Orientation correlations in aluminium deformed by ECAE

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Bowen, J. R. (Intern), Mishin, O. (Intern), Prangnell, P. (Ekstern), Juul Jensen, D. (Intern)
Pages: 25-26
Publication date: 2002

Host publication information
Title of host publication: Extended abstracts
Volume: Risø-R-1347(EN)
Editors: Bowen, J., Godfrey, A., Pantleon, W.
ISBN (Print): 87-550-3072-6
Main Research Area: Technical/natural sciences
Conference: 1st Joint Chinese-Danish Symposium, Qinhuangdao, China, 19/08/2002 - 19/08/2002
Source: orbit
Source-ID: 304502
Publication: Research › Journal article – Annual report year: 2002

Recrystallization studies using the 3DXRD microscope

General information
State: Published
Organisations: Materials Research Division, Risø National Laboratory for Sustainable Energy
Pages: 43-44
Publication date: 2002

Host publication information
Title of host publication: Extended abstracts
Volume: Risø-R-1347(EN)
Editors: Bowen, J., Godfrey, A., Pantleon, W.
ISBN (Print): 87-550-3072-6
Main Research Area: Technical/natural sciences
Conference: 1st Joint Chinese-Danish Symposium, Qinhuangdao, China, 19/08/2002 - 19/08/2002
Source: orbit
Source-ID: 304530
Publication: Research › Conference abstract in proceedings – Annual report year: 2002

Stereological studies of recrystallization kinetics

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 39-40
Publication date: 2002

Host publication information
Title of host publication: Extended abstracts
Volume: Risø-R-1347(EN)
Editors: Bowen, J., Godfrey, A., Pantleon, W.
ISBN (Print): 87-550-3072-6
Main Research Area: Technical/natural sciences
Conference: 1st Joint Chinese-Danish Symposium, Qinhuangdao, China, 19/08/2002 - 19/08/2002
Source: orbit
Source-ID: 304528
Publication: Research › Conference abstract in proceedings – Annual report year: 2002
A three-dimensional X-ray diffraction microscope for deformation studies of polycrystals

The microstructure in polycrystalline materials has mostly been studied in planar sections by microscopy techniques. Now the high penetration power of hard X-ray synchrotron radiation makes three-dimensional (3-D) observations possible in bulk material by back tracing the diffracted beam. The three-dimensional X-ray diffraction (3DXRD) microscope installed at the European Synchrotron Radiation Facility in Grenoble provides a fast and non-destructive technique for mapping the embedded grains within thick samples in three dimensions. All essential features like the position, volume, orientation, stress-state of the grains can be determined, including the morphology of the grain boundaries. The accuracy of this novel tracking technique is compared with electron microscopy (EBSP), and its 3-D capacity is demonstrated. (C) 2001 Elsevier Science B.V. All rights reserved.
Assessment of microstructural characterisation of heavily deformed materials by electron microscopy

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Mishin, O. (Intern), Huang, X. (Intern), Bowen, J. R. (Intern), Juul Jensen, D. (Intern)
Pages: 335-340
Publication date: 2001

Host publication information
Title of host publication: Science of metastable and nanocrystalline alloys. Structure, properties and modelling.
Place of publication: Roskilde
Publisher: Risø National Laboratory
ISBN (Print): 87-550-2916-7
Main Research Area: Technical/natural sciences

Links:
Source: orbit
Source-ID: 302810
Publication: Research - peer-review › Article in proceedings – Annual report year: 2001

EBSD contra TEM characterization of a deformed aluminum single crystal

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Huang, X. (Intern), Juul Jensen, D. (Intern)
Publication date: 2001

Host publication information
Title of host publication: Electron backscatter diffraction in materials science
Place of publication: New York
Effect of grain orientation on microstructures during hot deformation of AA 3104 aluminium alloy by plane strain compression

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Liu, W. (Ekstern), Juul Jensen, D. (Intern), Morris, J. (Ekstern)
Pages: 3347-3367
Publication date: 2001
Main Research Area: Technical/natural sciences

Publication Information
Volume: 49
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.67 SJR 3.283 SNIP 2.674
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.542 SNIP 2.927 CiteScore 5.22
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 4.045 SNIP 3.348 CiteScore 5.16
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 3.29 SNIP 2.709 CiteScore 4.37
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.409 SNIP 2.917 CiteScore 4.28
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.247 SNIP 2.81 CiteScore 4.27
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 3.745 SNIP 2.724
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 3.677 SNIP 2.648
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 3.863 SNIP 2.787
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 3.298 SNIP 3.068
Experimental measurements of nucleation and growth rates

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 73-86
Publication date: 2001

Host publication information
Title of host publication: Recrystallization and grain growth. Proceedings. Vol. 1
Place of publication: Berlin
Publisher: Springer Verlag
Editors: Gottstein, G., Molodov, D.
ISBN (Print): 3-540-41837-7
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 302964
Publication: Research - peer-review › Journal article – Annual report year: 2001

Growth kinetics of individual cube grains as studied by the 3D X-ray diffraction microscope

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Lauridsen, E. (Intern), Schmidt, S. (Intern), Margulies, L. (Intern), Poulsen, H. (Intern), Juul Jensen, D. (Intern)
Pages: 589-594
Publication date: 2001

Host publication information
Title of host publication: Recrystallization and grain growth. Proceedings. Vol. 1
Place of publication: Berlin
Publisher: Springer Verlag
Editors: Gottstein, G., Molodov, D.
ISBN (Print): 3-540-41837-7
Main Research Area: Technical/natural sciences
Source: orbit
Growth rates for different texture components during recrystallization of IF steel

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Magnusson, H. (Ekstern), Juul Jensen, D. (Intern), Hutchinsson, B. (Ekstern)
Pages: 435-441
Publication date: 2001
Main Research Area: Technical/natural sciences

Publication information
Journal: Scripta Materialia
Volume: 44
ISSN (Print): 1359-6462
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.71 SJR 1.901 SNIP 1.696
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.3 SNIP 1.876 CiteScore 3.54
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.744 SNIP 2.124 CiteScore 3.55
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.347 SNIP 1.975 CiteScore 3.19
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.309 SNIP 2.022 CiteScore 3.01
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.333 SNIP 2.108 CiteScore 3.21
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.445 SNIP 2.125
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.574 SNIP 2.02
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.634 SNIP 2.128
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 2.229 SNIP 2.174
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 2.1 SNIP 1.915
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 1.831 SNIP 1.915
Web of Science (2005): Indexed yes
Scopus rating (2004): SJR 1.464 SNIP 1.731
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 1.499 SNIP 1.709
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 1.509 SNIP 1.345
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 1.301 SNIP 1.361
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 1.268 SNIP 1.123
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 1.53 SNIP 1.162
Original language: English
DOIs:
10.1016/S1359-6462(00)00621-7
Source: orbit
Source-ID: 302347
Publication: Research - peer-review › Journal article – Annual report year: 2001

**Investigation of relationships between matrix orientations and nuclei at triple junctions**

**General information**
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Sabin, T. (Ekstern), Winther, G. (Intern), Juul Jensen, D. (Intern)
Pages: 809-814
Publication date: 2001

**Host publication information**
Title of host publication: Recrystallization and grain growth. Proceedings. Vol. 2
Place of publication: Berlin
Publisher: Springer Verlag
Editors: Gottstein, G., Molodov, D.
ISBN (Print): 3-540-41837-7
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 303341
Publication: Research - peer-review › Article in proceedings – Annual report year: 2001

**Mapping of grain boundaries in 3D**

**General information**
State: Published
Organisations: Materials Research Division, Risø National Laboratory for Sustainable Energy
Publication date: 2001

**Host publication information**
Title of host publication: Programme. Abstracts. List of participants
Place of publication: Copenhagen
Publisher: HCØ Tryk
Main Research Area: Technical/natural sciences
Conference: 2001 Annual Meeting of The Danish Physical Society, Nyborg, Denmark, 31/05/2001 - 31/05/2001
Source: orbit
Source-ID: 302576
Publication: Research › Conference abstract in proceedings – Annual report year: 2001

**Measurement of orientation dependent stored energy of deformation on a local scale**
Microstructural path and temperature dependence of recrystallization in commercial aluminum

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Vandermeer, R. (Ekstern), Juul Jensen, D. (Intern)
Pages: 2083-2094
Publication date: 2001
Main Research Area: Technical/natural sciences

Publication information
Volume: 49
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.67 SJR 3.283 SNIP 2.674
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.542 SNIP 2.927 CiteScore 5.22
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 4.045 SNIP 3.348 CiteScore 5.16
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 3.29 SNIP 2.709 CiteScore 4.37
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.409 SNIP 2.917 CiteScore 4.28
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.247 SNIP 2.81 CiteScore 4.27
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 3.745 SNIP 2.724
Nanostructured metals - processing, microstructure and properties

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern)
Pages: 1006-1011
Publication date: 2001
Main Research Area: Technical/natural sciences

Publication information
Journal: Inzynieria Materialowa
Issue number: 5
Original language: English
Source: orbit
Source-ID: 302667
Publication: Research - peer-review › Journal article – Annual report year: 2001

Plastic deformation and recrystallization studied by the 3D X-ray microscope

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Kvick, Å. (Ekstern), Lauridsen, E. (Intern), Lienert, U. (Ekstern), Margulies, L. (Intern), Fæster Nielsen, S. (Intern), Poulsen, H. (Intern)
Pages: 227-240
Publication date: 2001

Host publication information
Quantification of minor texture components by hard X-rays

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 39-54
Publication date: 2001
Main Research Area: Technical/natural sciences

Publication information
Journal: Textures and Microstructures
Volume: 35
ISSN (Print): 0730-3300
Original language: English
Source: orbit
Source-ID: 303333
Publication: Research - peer-review › Journal article – Annual report year: 2001

Quantitative analysis of grain subdivision in cold rolled aluminium

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Delannay, L. (Ekstern), Mishin, O. (Intern), Juul Jensen, D. (Intern), Houtte, P. V. (Ekstern)
Pages: 2441-2451
Publication date: 2001
Main Research Area: Technical/natural sciences

Publication information
Volume: 49
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.67 SJR 3.283 SNIP 2.674
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.542 SNIP 2.927 CiteScore 5.22
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 4.045 SNIP 3.348 CiteScore 5.16
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 3.29 SNIP 2.709 CiteScore 4.37
Recrystallisation of channel die deformed single crystals of typical rolling orientations

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Godfrey, A. (Ekstern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 2429-2440
Publication date: 2001
Main Research Area: Technical/natural sciences

Publication information
Volume: 49

Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.67 SJR 3.283 SNIP 2.674
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.542 SNIP 2.927 CiteScore 5.22
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 4.045 SNIP 3.348 CiteScore 5.16
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 3.29 SNIP 2.709 CiteScore 4.37
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.409 SNIP 2.917 CiteScore 4.28
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.247 SNIP 2.81 CiteScore 4.27
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 3.745 SNIP 2.724
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 3.677 SNIP 2.648
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 3.863 SNIP 2.787
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 3.298 SNIP 3.068
Web of Science (2007): Indexed yes
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 3.172 SNIP 3.082
Scopus rating (2004): SJR 3.066 SNIP 3.154
Web of Science (2004): Indexed yes
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 4.016 SNIP 3.081
Web of Science (2002): Indexed yes
Scopus rating (2001): SJR 3.225 SNIP 2.732
Web of Science (2001): Indexed yes
Scopus rating (2000): SJR 2.706 SNIP 2.194
Web of Science (2000): Indexed yes
Scopus rating (1999): SJR 3.188 SNIP 2.177
Original language: English
DOIs:
10.1016/S1359-6454(01)00148-3
Source: orbit
Source-ID: 302762
Three-dimensional maps of grain boundaries and the stress state of individual grains in polycrystals and powders

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 751-756
Publication date: 2001
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Applied Crystallography
Volume: 34
ISSN (Print): 0021-8898
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.51 SJR 1.242 SNIP 1.234
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.322 SNIP 2.588 CiteScore 3.97
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.585 SNIP 4.371 CiteScore 4.76
Three-dimensional orientation imaging

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Publication date: 2001

Host publication information
Title of host publication: Electron backscatter diffraction in materials science
Place of publication: New York
Publisher: Kluwer Academic
Application of high-energy synchrotron radiation for texture studies

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 364-371
Publication date: 2000
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal of Applied Crystallography
Volume: 33
ISSN (Print): 0021-8898
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.51 SJR 1.242 SNIP 1.234
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.322 SNIP 2.588 CiteScore 3.97
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 2.585 SNIP 4.371 CiteScore 4.76
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.921 SNIP 6.392 CiteScore 6
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.572 SNIP 4.687 CiteScore 4.67
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.015 SNIP 5.863 CiteScore 5.32
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.6 SNIP 2.078
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 3.235 SNIP 2.117
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.126 SNIP 2.101
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.674 SNIP 3.489
A three-dimensional X-ray diffraction microscope for deformation studies of polycrystals

**General information**
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Nielsen, F. (Ekstern), Lauridsen, E. (Intern), Juul Jensen, D. (Intern), Poulsen, H. (Intern)
Number of pages: 16
Publication date: 2000

**Host publication information**
Title of host publication: Abstract booklet
Place of publication: [s.l.]
Publisher: [s.n.]
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 301792
Publication: Research › Conference abstract in proceedings – Annual report year: 2000

Characterisation of deformation structures in ECAE-processed copper

**General information**
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Mishin, O. (Intern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 445-449
Publication date: 2000

**Host publication information**
Title of host publication: Recrystallization - Fundamental aspects and relations to deformation microstructure. Proceedings
Place of publication: Roskilde
Publisher: Risø National Laboratory
ISBN (Print): 87-550-2737-7
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 301321
Publication: Research › Article in proceedings – Annual report year: 2000
Distribution of crystallographic orientations in a deformed aluminium bicrystal

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Lillywhite, S. (Ekstern), Bate, P. (Ekstern), Juul Jensen, D. (Intern)
Pages: 415-421
Publication date: 2000

Host publication information
Title of host publication: Recrystallization - Fundamental aspects and relations to deformation microstructure. Proceedings
Place of publication: Roskilde
Publisher: Risø National Laboratory
ISBN (Print): 87-550-2737-7
Main Research Area: Technical/natural sciences
Source-ID: 301319
Publication: Research › Article in proceedings – Annual report year: 2000

Growth during recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 61-64
Publication date: 2000

Host publication information
Title of host publication: Proceedings. Vol. 1
Place of publication: Harbin
Publisher: Harbin Institute of Technology. School of Materials Science and Engineering
Editors: Tingquan Lei, Yuyong Chen
Main Research Area: Technical/natural sciences
Conference: International symposium on materials science and technology (ISMST 2000), Harbin, China, 05/06/2000 - 05/06/2000
Source-ID: 301045
Publication: Research › Article in proceedings – Annual report year: 2000

Investigation of a cold-rolled microstructure by orientation imaging microscopy

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Delannay, L. (Ekstern), Mishin, O. (Intern), Juul Jensen, D. (Intern), Houtte, P. V. (Ekstern)
Pages: 315-320
Publication date: 2000

Host publication information
Title of host publication: Recrystallization - Fundamental aspects and relations to deformation microstructure. Proceedings
Kinetics of individual grains during recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Lauridsen, E. (Intern), Juul Jensen, D. (Intern), Poulsen, H. (Intern), Lienert, U. (Ekstern)
Pages: 561-566
Publication date: 2000
Main Research Area: Technical/natural sciences

Publication information
Journal: Scripta Materialia
Volume: 43
ISSN (Print): 1359-6462
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.71 SJR 1.901 SNIP 1.696
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.3 SNIP 1.876 CiteScore 3.54
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.744 SNIP 2.124 CiteScore 3.55
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.347 SNIP 1.975 CiteScore 3.19
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 2.309 SNIP 2.022 CiteScore 3.01
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 2.333 SNIP 2.108 CiteScore 3.21
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 2.445 SNIP 2.125
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 2.574 SNIP 2.02
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 2.634 SNIP 2.128
**Measurements of crystallographic orientations in 1D, 2D and 3D (invited lecture)**

**General information**
State: Published  
Organisations: Risø National Laboratory for Sustainable Energy  
Authors: Juul Jensen, D. (Intern)  
Number of pages: 6  
Publication date: 2000

**Host publication information**
Title of host publication: Programme and abstracts  
Publisher: European Science Foundation  
Main Research Area: Technical/natural sciences  
Source: orbit  
Source-ID: 301451  
Publication: Research › Conference abstract in proceedings – Annual report year: 2000

**Nucleation at triple junctions in pure aluminium**

**General information**
State: Published  
Organisations: Risø National Laboratory for Sustainable Energy  
Authors: Sabin, T. (Ekstern), Juul Jensen, D. (Intern)  
Pages: 539-544  
Publication date: 2000

**Host publication information**
Title of host publication: Recrystallization - Fundamental aspects and relations to deformation microstructure. Proceedings  
Place of publication: Roskilde  
Publisher: Risø National Laboratory  
ISBN (Print): 87-550-2737-7  
Main Research Area: Technical/natural sciences
Recrystallization - Fundamental aspects and relations to deformation microstructure. Proceedings

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Number of pages: 677
Publication date: 2000

Publication information
Place of publication: Roskilde
Publisher: Risø National Laboratory
ISBN (Print): 87-550-2737-7
Original language: English
Main Research Area: Technical/natural sciences

Recrystallization in 3D

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Poulsen, H. (Intern)
Pages: 103-124
Publication date: 2000

Host publication information
Title of host publication: Recrystallization - Fundamental aspects and relations to deformation microstructure. Proceedings
Place of publication: Roskilde
Publisher: Risø National Laboratory
ISBN (Print): 87-550-2737-7
Main Research Area: Technical/natural sciences
Source-ID: 301313
Publication: Research › Article in proceedings – Annual report year: 2000

Three dimensional mapping of grain boundaries

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 473-478
Publication date: 2000

Host publication information
Title of host publication: Recrystallization - Fundamental aspects and relations to deformation microstructure. Proceedings
Place of publication: Roskilde
Publisher: Risø National Laboratory
ISBN (Print): 87-550-2737-7
Main Research Area: Technical/natural sciences
Three dimensional maps of polycrystalline materials

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Publication date: 2000

Host publication information
Title of host publication: Programme and abstracts
Place of publication: Copenhagen
Publisher: Centre for Crystallographic Studies
Main Research Area: Technical/natural sciences
Conference: 31. Danske krystallografmøde; Dansync's 3. Årsmøde, København, Denmark, 30/05/2000 - 30/05/2000

Through-thickness texture gradients in cold-rolled aluminum

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Mishin, O. (Intern), Bay, B. (Ekstern), Juul Jensen, D. (Intern)
Pages: 1653-1662
Publication date: 2000
Main Research Area: Technical/natural sciences

Publication information
Journal: Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science
Volume: 31
ISSN (Print): 1073-5623
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.91 SJR 1.179 SNIP 1.179
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.231 SNIP 1.332 CiteScore 1.78
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.671 SNIP 1.877 CiteScore 2.06
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.481 SNIP 1.63 CiteScore 1.9
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.419 SNIP 1.706 CiteScore 1.76
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Automatic recognition of recrystallized grains in partly recrystallized samples from crystal orientation maps

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Krieger Lassen, N. (Ekstern), Juul Jensen, D. (Intern)
Pages: 854-859
Publication date: 1999

Host publication information
Place of publication: Ottawa
Publisher: NRC Research Press
Editor: Szpunar, J.
ISBN (Print): 0-660-17790-0
Main Research Area: Technical/natural sciences
Conference: 12th International Conference on Textures of Materials, Montreal, Canada, 09/08/1999 - 09/08/1999
Source: orbit
Source-ID: 300133
Publication: Research › Article in proceedings – Annual report year: 1999

Comparison of experimental techniques for characterization of through-thickness texture variations
For the investigation of through-thickness texture gradients, a number of layers in rolled plates and sheets are inspected. Crystallographic textures in different layers can be characterized using several techniques. In the present work, traditional low-energy X-ray diffraction, the electron backscattering pattern technique in the scanning electron microscope and a novel technique which involves high energy synchrotron radiation are used for characterization of through-thickness texture variations in commercial purity cold-rolled aluminium. Important experimental aspects of these three techniques
are described. The results from the three techniques are compared and their potentials for characterization of through-thickness texture variations are considered.

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 174-179
Publication date: 1999

Host publication information
Title of host publication: Proceedings of the twelfth International Conference on Textures of Materials
Place of publication: Ottawa
Publisher: NRC Research Press
Editor: Szpunar, J.
ISBN (Print): 0-660-17789-7
Main Research Area: Technical/natural sciences
Conference: 12th International Conference on Textures of Materials, Montreal, Canada, 09/08/1999 - 09/08/1999
Source: orbit
Source-ID: 174979
Publication: Research - peer-review › Article in proceedings – Annual report year: 1999

Deformation-induced microstructures: Analysis and relation to properties. Proceedings

General information
State: Published
Organisations: Materials Research Division, Risø National Laboratory for Sustainable Energy
Number of pages: 560
Publication date: 1999

Publication information
Place of publication: Roskilde
Publisher: Risø National Laboratory
ISBN (Print): 87-550-2592-7
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 299988
Publication: Research - peer-review › Book – Annual report year: 1999

Deformation microstructure and recrystallization behaviour

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 3-14
Publication date: 1999

Host publication information
Title of host publication: Proceedings
Place of publication: Sendai
Publisher: Japan Institute of Metals
Editors: Sakai, T., Suzuki, H.
ISBN (Print): 4-88903-402-1
Main Research Area: Technical/natural sciences
Conference: 4th International Conference on Recrystallization and Related Phenomena, Tsukuba, Japan, 13/07/1999 - 13/07/1999
Source: orbit
Source-ID: 299188
Publication: Research › Article in proceedings – Annual report year: 1999
Deformation microstructures and textures in steels - Discussion

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Hutchinson, B. (Ekstern), Houtte, P. V. (Ekstern), Juul Jensen, D. (Intern)
Pages: 1485
Publication date: 1999
Main Research Area: Technical/natural sciences

Publication information
Journal: Philosophical Transactions of the Royal Society London, Series A (Mathematical, Physical and Engineering Sciences)
Volume: 357
ISSN (Print): 1364-503X
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.26 SJR 0.874 SNIP 1.024
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.78 SNIP 0.985 CiteScore 2.08
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.847 SNIP 1.256 CiteScore 2.39
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.12 SNIP 1.534 CiteScore 3.12
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.068 SNIP 1.387 CiteScore 2.89
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 0.964 SNIP 1.297 CiteScore 2.65
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.095 SNIP 1.365
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.068 SNIP 1.309
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.867 SNIP 1.016
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.683 SNIP 0.685
Scopus rating (2006): SJR 0.856 SNIP 0.888
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.843 SNIP 0.824
Scopus rating (2004): SJR 0.651 SNIP 0.834
Scopus rating (2003): SJR 0.527 SNIP 0.765
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.368 SNIP 0.631
Scopus rating (2001): SJR 0.296 SNIP 0.4
Scopus rating (2000): SJR 0.315 SNIP 0.393
Scopus rating (1999): SJR 0.436 SNIP 0.297
Development of microstructure in FCC metals during cold work

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern)
Pages: 1447-1469
Publication date: 1999
Main Research Area: Technical/natural sciences

Publication information
Journal: Philosophical Transactions of the Royal Society London, Series A (Mathematical, Physical and Engineering Sciences)
Volume: 357
ISSN (Print): 1364-503X
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.26 SJR 0.874 SNIP 1.024
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.78 SNIP 0.985 CiteScore 2.08
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.847 SNIP 1.256 CiteScore 2.39
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.12 SNIP 1.534 CiteScore 3.12
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.068 SNIP 1.387 CiteScore 2.89
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 0.964 SNIP 1.297 CiteScore 2.65
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.095 SNIP 1.365
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.068 SNIP 1.309
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.867 SNIP 1.016
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.683 SNIP 0.685
Scopus rating (2006): SJR 0.856 SNIP 0.888
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.843 SNIP 0.824
Scopus rating (2004): SJR 0.651 SNIP 0.834
Scopus rating (2003): SJR 0.527 SNIP 0.765
Web of Science (2003): Indexed yes
Effect of grain orientation on deformation structure and recrystallization behaviour of tensile strained copper

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Huang, X. (Intern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 161-166
Publication date: 1999

Host publication information
Title of host publication: Proceedings
Place of publication: Sendai
Publisher: Japan Institute of Metals
Editors: Sakai, T., Suzuki, H.
ISBN (Print): 4-88903-402-1
Main Research Area: Technical/natural sciences
Conference: 4th International Conference on Recrystallization and Related Phenomena, Tsukuba, Japan, 13/07/1999 - 13/07/1999
Source: orbit
Source-ID: 299187
Publication: Research › Article in proceedings – Annual report year: 1999

Materials science applications of high energy synchrotron radiation

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Number of pages: 27
Publication date: 1999

Host publication information
Title of host publication: Collected abstracts
Place of publication: Glasgow
Publisher: International Union of Crystallography
Main Research Area: Technical/natural sciences
Conference: 18th IUCr Congress and General Assembly, Glasgow, United Kingdom, 04/08/1999 - 04/08/1999
Source: orbit
Source-ID: 299365
Publication: Research › Conference abstract in proceedings – Annual report year: 1999

Mikrostrukturel modellering af industriel valsning

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 267-279
Publication date: 1999

Host publication information
Title of host publication: Metallurgiske processer til design af strukturer og egenskaber
Place of publication: Lyngby
Publisher: DMS
Modelling of microstructure evolution in hot deformation - Discussion

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Shercliff, H. (Ekstern), Beynon, J. (Ekstern)
Pages: 1642-1643
Publication date: 1999
Main Research Area: Technical/natural sciences

Publication information
Journal: Philosophical Transactions of the Royal Society London, Series A (Mathematical, Physical and Engineering Sciences)
Volume: 357
ISSN (Print): 1364-503X
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 2.26 SJR 0.874 SNIP 1.024
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 0.78 SNIP 0.985 CiteScore 2.08
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 0.847 SNIP 1.256 CiteScore 2.39
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.12 SNIP 1.534 CiteScore 3.12
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.068 SNIP 1.387 CiteScore 2.89
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 0.964 SNIP 1.297 CiteScore 2.65
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.095 SNIP 1.365
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.068 SNIP 1.309
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 0.867 SNIP 1.016
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.683 SNIP 0.685
Scopus rating (2006): SJR 0.856 SNIP 0.888
Web of Science (2006): Indexed yes
Scopus rating (2005): SJR 0.843 SNIP 0.824
Scopus rating (2004): SJR 0.651 SNIP 0.834
Plastic deformation, recrystallization and internal stresses studied by a new 3D X-ray microscope

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Poulsen, H. (Intern), Lorentzen, T. (Intern)
Number of pages: 293
Publication date: 1999

Host publication information
Title of host publication: Abstracts
Place of publication: Warrendale
Publisher: Materials Research Society
Main Research Area: Technical/natural sciences
Conference: MRS 1999 Fall meeting, Boston, MA, United States, 29/11/1999 - 29/11/1999
Source: orbit
Source-ID: 299367
Publication: Research › Conference abstract in proceedings – Annual report year: 1999

Recrystallization kinetics of AA3104 deformed at room and elevated temperatures

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Lyttle, M. (Intern), Juul Jensen, D. (Intern)
Pages: 185-190
Publication date: 1999

Host publication information
Title of host publication: Proceedings
Place of publication: Sendai
Publisher: Japan Institute of Metals
Editors: Sakai, T., Suzuki, H.
ISBN (Print): 4-88903-402-1
Main Research Area: Technical/natural sciences
Conference: 4th International Conference on Recrystallization and Related Phenomena, Tsukuba, Japan, 13/07/1999 - 13/07/1999
Source: orbit
Source-ID: 299186
Publication: Research › Article in proceedings – Annual report year: 1999

Reproducibility of experimental texture measurement

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Lyttle, M. (Intern)
Pages: 46-51
Publication date: 1999

Host publication information
Textures of AA3104 deformed by plane strain compression at multiple temperatures

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Lyttle, M. (Intern), Juul Jensen, D. (Intern)
Pages: 605-610
Publication date: 1999

Host publication information
Title of host publication: Proceedings of the 12th International conference on textures of materials. Vol. 1
Place of publication: Ottawa
Publisher: NRC Research Press
Editor: Szpunar, J.
ISBN (Print): 0-660-17789-7
Main Research Area: Technical/natural sciences
Conference: 12th International Conference on Textures of Materials, Montreal, Canada, 09/08/1999 - 09/08/1999
Source: orbit
Source-ID: 300134
Publication: Research - peer-review › Article in proceedings – Annual report year: 1999

The effect of rolling draughts on texture and microstructure in aluminium

The texture gradients and microstructural variations are investigated in commercially pure aluminium plates 40% cold-rolled either with small draughts or with intermediate draughts. In these two samples, different textures are observed near the quarter thickness layer. A pronounced shear texture is found in the sample rolled with small draughts, while a rolling texture is observed in the sample rolled with intermediate draughts. Also, significant differences were found in the rolled microstructures near the quarter thickness. After rolling with intermediate draughts, extended dislocation boundaries preferentially aligned at an angle of about 25-45° to the rolling direction are observed in the longitudinal section. After rolling with small draughts, extended dislocation boundaries are preferentially aligned closer to the rolling direction. These results are described and discussed.

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Mishin, O. (Intern), Juul Jensen, D. (Intern), Bay, B. (Ekstern)
Pages: 1154-1159
Publication date: 1999

Host publication information
Title of host publication: Proceedings of the 12th International conference on textures of materials
Volume: 2
Place of publication: Ottawa
Publisher: NRC Research Press
Editor: Szpunar, J.
ISBN (Print): 0-660-17790-0
Main Research Area: Technical/natural sciences
Conference: 12th International Conference on Textures of Materials, Montreal, Canada, 09/08/1999 - 09/08/1999
Source: orbit
Source-ID: 174980
Publication: Research - peer-review › Article in proceedings – Annual report year: 1999

Characterization of through-thickness texture variations in cold-rolled aluminium

General information
Deformation microstructure and texture evolution and its effects on flow stress anisotropy and annealing behaviour (invited lecture)

Effect of grain orientation on deformation structure in cold-rolled polycrystalline aluminium
Formation of fine grains in aluminium deformed to large strains

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Richert, M. (Ekstern), Hansen, N. (Intern), Richert, J. (Ekstern), Juul Jensen, D. (Intern), Liu, Q. (Intern), Godfrey, A. (Ekstern)
Pages: 502-505
Publication date: 1998

Host publication information
Title of host publication: Proceedings of the 15. Physical metallurgy and materials science conference on advanced materials and technologies
Future trends: Texture analysis for structure-sensitive properties

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Adams, B. (Ekstern), Juul Jensen, D. (Intern), Poulsen, H. (Intern), Suter, R. (Ekstern)
Pages: 29-39
Publication date: 1998
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science Forum
Volume: 273-275
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
BFI (2014): BFI-level 1
Scopus rating (2014): SNIP 0.448 SJR 0.269 CiteScore 0.33
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SNIP 0.342 SJR 0.235 CiteScore 0.28
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SNIP 0.467 SJR 0.279 CiteScore 0.34
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SNIP 0.419 SJR 0.247 CiteScore 0.33
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SNIP 0.406 SJR 0.271
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SNIP 0.389 SJR 0.343
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.297 SNIP 0.358
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 0.314 SNIP 0.5
Web of Science (2007): Indexed yes
Hot and cold deformed aluminium: Deformation microstructure and recrystallization behaviour (Invited paper)

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Lyttle, M. (Intern), Hansen, N. (Intern)
Pages: 9-21
Publication date: 1998

Host publication information
Title of host publication: Hot deformation of aluminum alloys 2
Place of publication: Warrendale, PA
Publisher: The Minerals, Metals and Materials Society
Editors: Bieler, T., Lalli, L., MacEwen, S.
ISBN (Print): 0-87339-412-7
Main Research Area: Technical/natural sciences
Conference: 1998 TMS fall meeting, Rosemont, IL (US), 11-15 Oct, 01/01/1998
Source: orbit
Source-ID: 298345
Publication: Research › Article in proceedings – Annual report year: 1998

Investigation of medium to high strain deformation microstructures using an automated electron backscattering pattern (EBSP) system

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Godfrey, A. (Ekstern), Krieger Lassen, N. (Ekstern), Hughes, D. (Ekstern), Juul Jensen, D. (Intern)
Publication date: 1998
Event: Abstract from Microscopy and microanalysis '98, Atlanta, GA (US), 12-16 Jul, .
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 297814
Publication: Research › Conference abstract for conference – Annual report year: 1998

Microstructure development in single-phase materials - applications

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
**Microtexture and microstructure investigations by orientation imaging microscopy (OIM)**

**General information**
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Bunsch, A. (Ekstern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 455-458
Publication date: 1998

**Host publication information**
Title of host publication: Proceedings of the 15. Physical metallurgy and materials science conference on advanced materials and technologies
Place of publication: Warszawa (PL)
Publisher: Sigma-not
Editors: Kusinski, J., Suliga, I., Kac, S.
Series: Inzynieria Materialowa, 3
Main Research Area: Technical/natural sciences
Conference: AMT '98, Kraków-Krynica, Poland, 17/05/1998 - 17/05/1998
Source: orbit
Source-ID: 298756
Publication: Research › Article in proceedings – Annual report year: 1998

**Modern modelling of recrystallization**

**General information**
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 637-644
Publication date: 1998

**Host publication information**
Title of host publication: Proceedings of the 15. Physical metallurgy and materials science conference on advanced materials and technologies
Place of publication: Warszawa (PL)
Publisher: Sigma-not
Editors: Kusinski, J., Suliga, I., Kac, S.
Series: Inzynieria Materialowa, 4
Main Research Area: Technical/natural sciences
Conference: AMT '98, Kraków-Krynica, Poland, 17/05/1998 - 17/05/1998
Source: orbit
Source-ID: 298758
Publication: Research › Article in proceedings – Annual report year: 1998

**Optimization of properties in metals by thermomechanical processing. New possibilities by synchrotron radiation (invited lecture)**

**General information**
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Publication date: 1998

**Host publication information**
Orientation pinning during growth

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Mehnert, K. (Ekstern)
Pages: 251-262
Publication date: 1998

Host publication information
Title of host publication: Grain growth in polycrystalline materials 3
Place of publication: Warrendale, PA
Publisher: Minerals, Metals and Materials Society
Editors: Weiland, H., Adams, B.L.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 297801
Publication: Research › Article in proceedings – Annual report year: 1998

Slip pattern, microstructure and local crystallography in an aluminium single crystal of brass orientation \#left brace#110#right brace#

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Godfrey, A. (Ekstern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 823-833
Publication date: 1998

Publication information
Volume: 46
Ratings:
  BFI (2018): BFI-level 2
  BFI (2017): BFI-level 2
  Web of Science (2017): Indexed yes
  BFI (2016): BFI-level 2
  Scopus rating (2016): CiteScore 5.67 SJR 3.283 SNIP 2.674
  Web of Science (2016): Indexed yes
  BFI (2015): BFI-level 2
  Scopus rating (2015): SJR 3.542 SNIP 2.927 CiteScore 5.22
  Web of Science (2015): Indexed yes
  BFI (2014): BFI-level 2
  Scopus rating (2014): SJR 4.045 SNIP 3.348 CiteScore 5.16
  Web of Science (2014): Indexed yes
  BFI (2013): BFI-level 2
  Scopus rating (2013): SJR 3.29 SNIP 2.709 CiteScore 4.37
  ISI indexed (2013): ISI indexed yes
  Web of Science (2013): Indexed yes
Slip pattern, microstructure and local crystallography in an aluminium single crystal of copper orientation #left brace#112#right brace#

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Godfrey, A. (Ekstern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 835-848
Publication date: 1998
Main Research Area: Technical/natural sciences

Publication information
Volume: 46
Ratings:
BFI (2018): BFI-level 2
Strain Distribution and Texture Inhomogeneities in Rolled Aluminium

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Department of Management Engineering
Pages: 373-378
Publication date: 1998

Host publication information
Title of host publication: Modelling of structure and mechanics of materials from microscale to product. Proceedings
Place of publication: Roskilde
Publisher: Risø National Laboratory
Editors: Carstensen, J., Leffers, T., Lorentzen, T., Pedersen, O., Sørensen, B., Winther, G.
ISBN (Print): 87-550-2399-1
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 175089
Publication: Research - peer-review › Article in proceedings – Annual report year: 1998

The migration of high angle grain boundaries during recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Vandermeer, R. (Ekstern), Juul Jensen, D. (Intern)
Pages: 95-104
Publication date: 1998
Main Research Area: Technical/natural sciences

Publication information
Journal: Interface Science
Volume: 6
ISSN (Print): 0927-7056
Ratings:
BFI (2008): BFI-level 1
Scopus rating (2007): SJR 0.847 SNIP 1.26
Scopus rating (2006): SJR 0.714 SNIP 1.498
Scopus rating (2005): SJR 0.811 SNIP 2.112
Scopus rating (2004): SJR 0.779 SNIP 1.156
Web of Science (2004): Indexed yes
Scopus rating (2003): SJR 0.676 SNIP 0.868
Web of Science (2003): Indexed yes
Scopus rating (2002): SJR 0.675 SNIP 0.656
Scopus rating (2001): SJR 0.684 SNIP 0.55
Scopus rating (2000): SJR 0.531 SNIP 0.408
Scopus rating (1999): SJR 0.958 SNIP 1.142
Original language: English
Source: orbit
Source-ID: 298793
Publication: Research - peer-review › Journal article – Annual report year: 1998

Three dimensional X-ray diffraction using high energy synchrotron radiation

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Through-thickness texture variations determined non-destructively by high energy synchrotron radiation

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 271-276
Publication date: 1998
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science Forum
Volume: 273-275
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
BFI (2014): BFI-level 1
Scopus rating (2014): SNIP 0.448 SJR 0.269 CiteScore 0.33
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SNIP 0.342 SJR 0.235 CiteScore 0.28
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SNIP 0.467 SJR 0.279 CiteScore 0.34
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SNIP 0.419 SJR 0.247 CiteScore 0.33
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SNIP 0.406 SJR 0.271
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SNIP 0.389 SJR 0.343
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 0.297 SNIP 0.358
Web of Science (2008): Indexed yes
Deformation induced dislocation boundaries: Alignment and effect on mechanical properties

The dislocation boundaries formed during cold-rolling of FCC metals have been reported to have a preferred macroscopic direction with respect to the sample axes. However, boundaries have also been reported to form on crystallographic slip planes. The directions of the boundaries formed on crystallographic slip planes are investigated using a newly developed model for formation of such boundaries. It is concluded that these boundaries also lie in the preferred macroscopic direction, i.e. the entire dislocation structure is highly anisotropic. The impact of the anisotropic dislocation structure on the flow stress anisotropy is illustrated by comparison of experimental data and model calculations which take the combined effects of the anisotropic dislocation structure and texture into account. (C) 1997 Elsevier Science B.V.
Anisotrope mekaniske egenskaber

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Publication date: 1997
Event: Abstract from Risø 'Road Show' 1997, Nordborg, Denmark.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 296209
Publication: Research › peer-review › Conference article – Annual report year: 1997

Applications of high-energy synchrotron radiation for structural studies of polycrystalline materials

General information
State: Published
Applications of orientation mapping by scanning and transmission electron microscopy

The potentials of orientation mapping techniques (in the following referred to as OIM) for studies of thermomechanical processes are analysed. Both transmission electron microscopy (TEM) and scanning electron microscopy (SEM) based OIM techniques are considered. Among the thermomechanical processes, focus is on cold deformation and recrystallization processes. It is described how the OIM techniques may be applied for studies of such processes. Results of OIM measurements supplement more traditional TEM and SEM microstructure characterizations as well as bulk texture measurements, and new information is achieved when the results of OIM and these various techniques are combined. Examples hereof are given to illustrate the potentials of OIM techniques. Finally, limitations of TEM and SEM based OIM for specific applications are discussed.

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 24-34
Publication date: 1997
Main Research Area: Technical/natural sciences

Publication information
Journal: Ultramicroscopy
Volume: 67
Issue number: 1-4
ISSN (Print): 0304-3991
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 2.82 SJR 1.915 SNIP 1.233
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 2.121 SNIP 1.428 CiteScore 2.78
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 1.638 SNIP 1.661 CiteScore 2.59
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 1.777 SNIP 1.337 CiteScore 2.66
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 1.867 SNIP 1.595 CiteScore 2.31
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 1.624 SNIP 1.338 CiteScore 2.35
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 1
Scopus rating (2010): SJR 1.712 SNIP 1.236
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 1
Scopus rating (2009): SJR 1.763 SNIP 1.552
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.604 SNIP 1.728
Can we make and do we need a 3-D x-ray microscope

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Publication date: 1997
Event: Abstract from The characterization of multiscale and stochastic material microstructure and its relation to material aging, IMM workshop, La Lolla, CA (US), 24-27 Feb, .
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 296897
Publication: Research › Journal article – Annual report year: 1997

Current issues in recrystallization: A review

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Doherty, R. (Ekstern), Hughes, D. (Ekstern), Humphreys, F. (Ekstern), Jonas, J. (Ekstern), Juul Jensen, D. (Intern), Kassner, M. (Ekstern), King, W. (Ekstern), McNelley, T. (Ekstern), McQueen, H. (Ekstern), Rollett, A. (Ekstern)
Pages: 219-274
Publication date: 1997
Main Research Area: Technical/natural sciences
Publication information
Volume: 238
ISSN (Print): 0921-5093
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.39 SJR 1.666 SNIP 1.832
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.78 SNIP 1.849 CiteScore 3.01
Dense dislocation walls and microbands aligned with slip planes - theoretical considerations

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Winther, G. (Intern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 5059-5068
Publication date: 1997
Main Research Area: Technical/natural sciences

Publication information
Effects of orientation correlations on misorientation distributions in cold-deformed aluminium

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 762-765
Publication date: 1997
Main Research Area: Technical/natural sciences

Publication information
Volume: 234/236
ISSN (Print): 0921-5093
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.39 SJR 1.666 SNIP 1.832
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.78 SNIP 1.849 CiteScore 3.01
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.285 SNIP 2.617 CiteScore 3.32
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.879 SNIP 2.231 CiteScore 2.86
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.737 SNIP 2.351 CiteScore 2.5
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.741 SNIP 2.406 CiteScore 2.59
ISI indexed (2011): ISI indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.702 SNIP 2.086
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.551 SNIP 1.74
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 1.678 SNIP 1.847
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 1.32 SNIP 1.68
Web of Science (2007): Indexed yes
Scopus rating (2006): SJR 1.337 SNIP 1.748
Grain boundary mobility during recrystallization of copper

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Vandermeer, R. (Ekstern), Juul Jensen, D. (Intern), Woldt, E. (Ekstern)
Pages: 749-754
Publication date: 1997
Main Research Area: Technical/natural sciences

Publication information
Journal: Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science
Volume: 28
ISSN (Print): 1073-5623
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.91 SJR 1.179 SNIP 1.179
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.231 SNIP 1.332 CiteScore 1.78
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.671 SNIP 1.877 CiteScore 2.06
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.481 SNIP 1.63 CiteScore 1.9
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.419 SNIP 1.706 CiteScore 1.76
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.508 SNIP 1.703 CiteScore 1.78
Growth during recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Number of pages: 1
Publication date: 1997

Host publication information
Title of host publication: Local characterisation of materials by synchrotron radiation
Place of publication: Grenoble
Publisher: ESRF
Editors: Kvick, Å., Poulsen, H.
Main Research Area: Technical/natural sciences
Conference: Experiments Division at the European Synchrotron Radiation Facility meeting, Grenoble, France, 12/02/1997 - 12/02/1997
Source: orbit
Source-ID: 297098
Publication: Research › Conference abstract in proceedings – Annual report year: 1997

Growth effects on microstructure and texture development during recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Vandermeer, R. (Ekstern)
Growth in heavily deformed FCC metals: Effects of orientation pinning

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 15-29
Publication date: 1997

Host publication information
Title of host publication: Proceedings of ReX'96
Place of publication: Monterey, CA
Publisher: Monterey Institute of Advanced Studies
Editor: McNelley, T.
ISBN (Print): 0-9645943-6-6
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 296131
Publication: Research › Article in proceedings – Annual report year: 1997

Hvad sker der i et metal når det rekrystalliseres?

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Publication date: 1997
Event: Abstract from Risø ‘Road Show’ 1997 , Nordborg, Denmark.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 297314
Publication: Research › Conference abstract for conference – Annual report year: 1997

Karakterisering og modellering af rekrystallisation

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 105-120
Publication date: 1997

Host publication information
Title of host publication: Pladematerialer. Formgivning, struktur og egenskaber
Place of publication: Lyngby
Publisher: DMS
Modelling flow stress anisotropy caused by deformation induced dislocation boundaries

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Winther, G. (Intern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 2455-2465
Publication date: 1997
Main Research Area: Technical/natural sciences

Publication information
Volume: 45
Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 5.67 SJR 3.283 SNIP 2.674
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 3.542 SNIP 2.927 CiteScore 5.22
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 4.045 SNIP 3.348 CiteScore 5.16
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 3.29 SNIP 2.709 CiteScore 4.37
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 3.409 SNIP 2.917 CiteScore 4.28
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 3.247 SNIP 2.81 CiteScore 4.27
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 3.745 SNIP 2.724
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 3.677 SNIP 2.648
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 2
Scopus rating (2008): SJR 3.863 SNIP 2.787
Web of Science (2008): Indexed yes
Scopus rating (2007): SJR 3.298 SNIP 3.068
Web of Science (2007): Indexed yes
Nye karakteriseringsmetoder til materiale struktur og egenskaber

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Publication date: 1997
Event: Abstract from Materials processing, properties and modelling, Lyngby (DK), 19 Nov, .
Main Research Area: Technical/natural sciences
Source: orbit
Publication: Research › Journal article – Annual report year: 1997

Orientation aspects of growth during recrystallization

General information
State: Published
Authors: Juul Jensen, D. (Intern)
Publication date: 1997

Publication information
Place of publication: Roskilde
Publisher: Risø National Laboratory
Original language: English
Series: Denmark. Forskningscenter Risoe. Risoe-R
Number: 978(EN)
ISSN: 0106-2840
Main Research Area: Technical/natural sciences
Ris-R-978, Risa-R-978(EN)
Electronic versions:
Ris_R_978.pdf
Source: orbit
Source-ID: 312990
Publication: Research › Doctoral thesis – Annual report year: 1997
Three dimensional mapping of materials science properties using high energy synchrotron radiation

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Number of pages: 58
Publication date: 1997

Host publication information
Title of host publication: Seventeenth European crystallographic meeting. Programme. Book of abstracts
Place of publication: Lisboa
Publisher: Instituto Superior Técnico
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 296948
Publication: Research › Conference abstract in proceedings – Annual report year: 1997

Annealing behavior of dilute aluminum-alloys following hot deformation

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 897-903
Publication date: 1996
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science and Technology
Volume: 12
ISSN (Print): 0267-0836
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.43 SJR 0.814 SNIP 0.812
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.632 SNIP 0.764 CiteScore 1.1
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.788 SNIP 1.005 CiteScore 1.1
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Applications of EBSP technique

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Publication date: 1996
Event: Abstract from NorFa Workshop on Grain Boundaries and their Characterization by Electron Microscopy, Risø, Denmark.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 310521
Publication: Research - peer-review › Journal article – Annual report year: 1996

Applications of OIM in SEM and TEM

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Deformation induced changes in microstructure, local orientation and bulk texture

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern), Huang, X. (Intern), Bunsch, A. (Ekstern)
Pages: 1331-1338
Publication date: 1996

Host publication information
Title of host publication: Texture of materials. Proceedings of the eleventh international conference on textures of materials. Vol. 2
Place of publication: Beijing
Publisher: International Academic Publishers
Editors: Liang, Z., Zuo, L., Chu, Y.
Main Research Area: Technical/natural sciences
Conference: 11th International Conference on Textures of Materials, Xi'an, China, 16/09/1996 - 16/09/1996
Source: orbit
Source-ID: 295165
Publication: Research › Article in proceedings – Annual report year: 1996

Deformation microstructure and texture in hot worked aluminium alloys

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Vernon-Parry, K. (Ekstern), Furu, T. (Ekstern), Juul Jensen, D. (Intern), Humphreys, F. (Ekstern)
Pages: 889-896
Publication date: 1996
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science and Technology
Volume: 12
ISSN (Print): 0267-0836
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.43 SJR 0.814 SNIP 0.812
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.632 SNIP 0.764 CiteScore 1.1
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.788 SNIP 1.005 CiteScore 1.1
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.636 SNIP 0.868 CiteScore 0.92
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
Dislocation structures in deformed metals

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern), Godfrey, A. (Ekstern)
Pages: 225-234
Publication date: 1996

Host publication information
Title of host publication: The Johannes Weertman symposium. Proceedings
Place of publication: Warrendale, PA
Publisher: The Minerals, Metals and Materials Society
Main Research Area: Technical/natural sciences
Conference: 132nd TMS Annual Meeting, San Diego, CA, United States, 02/03/2003 - 02/03/2003
Source: orbit
Source-ID: 294954
Publication: Research › Article in proceedings – Annual report year: 1996

EBSP studies of growth rates during recrystallization
The use of the electron back scattering pattern (EBSP) technique to study effects of crystallographic orientation on growth is reviewed. The experimental set-up and data handling procedures are shortly introduced and two different approaches to
study orientation effects on growth are described. The potential of the EBSP technique for both these types of measurements is illustrated for recrystallization of heavily deformed aluminium. It is discussed how these approaches apply to grain growth. Finally, new possibilities for in-situ grain growth studies by 3D mapping of orientations in the bulk of a sample by synchrotron radiation techniques are briefly addressed.

**General information**

State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 713-722
Publication date: 1996

**Host publication information**

Title of host publication: Grain Growth in Polycrystalline Materials II
Volume: Parts 1-2
Publisher: Transtec Publications LTD
ISBN (Print): 0-87849-719-6

Series: Materials Science Forum
Volume: 204-206
ISSN: 0255-5476
Main Research Area: Technical/natural sciences
Conference: International Conference on Grain Growth in Polycrystalline Materials, Kitakyshu, Japan, 17/05/1995 - 17/05/1995

EBSP, growth rates, recrystallization, synchrotron

**Effect of texture on the development of grain size distribution during normal grain growth**

**General information**

State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Vogel, S. (Ekstern), Klimanek, P. (Ekstern), Juul Jensen, D. (Intern), Richter, H. (Ekstern)
Pages: 1225-1230
Publication date: 1996

Main Research Area: Technical/natural sciences

**Publication information**

Journal: Scripta Materialia
Volume: 34
ISSN (Print): 1359-6462

Ratings:
BFI (2018): BFI-level 2
BFI (2017): BFI-level 2
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 3.71 SJR 1.901 SNIP 1.696
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 2.3 SNIP 1.876 CiteScore 3.54
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 2.744 SNIP 2.124 CiteScore 3.55
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 2.347 SNIP 1.975 CiteScore 3.19
ISI indexed (2013): ISI indexed yes
Effects of anisotropic impingement on recrystallization texture, microstructure and kinetics

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Vandermeer, R. (Ekstern)
Pages: 490-496
Publication date: 1996

Host publication information
Title of host publication: Texture of materials. Proceedings of the eleventh international conference on textures of materials. Vol. 1
Place of publication: Beijing
Publisher: International Academic Publishers
Editors: Liang, Z., Zuo, L., Chu, Y.
Growth in heavily deformed FCC metals and effects hereof on microstructural and texture development

**General information**
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Publication date: 1996
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 295164
Publication: Research › Article in proceedings – Annual report year: 1996

High energy synchrotron radiation: a new tool for texture and strain determinations

**General information**
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Number of pages: 81
Publication date: 1996
Host publication information
Title of host publication: 45th annual Denver x-ray conference and powder diffraction satellite meeting of the 17. congress of the International Union of Crystallography. Abstracts
Place of publication: Denver, CO
Publisher: University of Denver. Engineering Department
Main Research Area: Technical/natural sciences
Conference: 45th Annual Denver X-ray Conference, Denver, CO, United States, 03/08/1996 - 03/08/1996
Source: orbit
Source-ID: 294564
Publication: Research › Conference abstract in proceedings – Annual report year: 1996

High energy synchrotron radiation: A new tool for texture and strain determinations

**General information**
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Number of pages: 26
Publication date: 1996
Host publication information
Title of host publication: First international conference on synchrotron radiation in materials science. Abstract booklet
Place of publication: Chicago, IL
Publisher: CSRRI Illinois Institute of Technology
Main Research Area: Technical/natural sciences
Conference: 1. International conference on synchrotron radiation in materials science, Chicago, IL (US), 29 Jul - 2 Aug, 01/01/1996
Source: orbit
Source-ID: 294582
Publication: Research › Conference abstract in proceedings – Annual report year: 1996

Investigation of local texture by high energy synchrotron radiation

**General information**
Local structure determination in polycrystalline materials using high energy synchrotron radiation

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Number of pages: 22
Publication date: 1996

Host publication information
Title of host publication: Synchrotron radiation satellite meeting. Advanced photon source. Program
Place of publication: Argonne, IL
Publisher: Argonne National Laboratory
Main Research Area: Technical/natural sciences
Conference: Synchrotron radiation satellite meeting, Argonne, IL (US), 4-7 Aug, 01/01/1996
Source: orbit
Source-ID: 294563
Publication: Research › Conference abstract in proceedings – Annual report year: 1996

Local texture analysis using high energy synchrotron radiation

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Garbe, S. (Ekstern), Poulsen, H. (Intern), Juul Jensen, D. (Intern)
Pages: 100-105
Publication date: 1996

Host publication information
Title of host publication: Texture of materials. Proceedings of the eleventh international conference on textures of materials. Vol. 1
Place of publication: Beijing
Publisher: International Academic Publishers
Editors: Liang, Z., Zuo, L., Chu, Y.
Main Research Area: Technical/natural sciences
Conference: 11th International Conference on Textures of Materials, Xi'an, China, 16/09/1996 - 16/09/1996
Source: orbit
Source-ID: 295159
Publication: Research › Article in proceedings – Annual report year: 1996

Materials science

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 109-119
Publication date: 1996

Host publication information
Orientation imaging microscopy (OIM) as a method to investigate deformation microstructure in cold rolled aluminium polycrystals

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Bunsch, A. (Ekstern), Juul Jensen, D. (Intern)
Pages: 195-198
Publication date: 1996

Host publication information
Title of host publication: Proceedings of the IX conference on electron microscopy of solids. EM '96
Place of publication: Krakow
Publisher: Fotobit
ISBN (Print): 83-904805-3-0
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 295428
Publication: Research › Article in proceedings – Annual report year: 1996

Quantification of microstructural evolution and texture development during recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Vandermeer, R. (Ekstern), Juul Jensen, D. (Intern)
Pages: 263-279
Publication date: 1996
Main Research Area: Technical/natural sciences

Publication information
Journal: Textures and Microstructures
Volume: 26/27
ISSN (Print): 0730-3300
Original language: English
Source: orbit
Source-ID: 295020
Publication: Research - peer-review › Journal article – Annual report year: 1996

The deformation behaviour of grain boundary regions in polycrystalline aluminium

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Randle, V. (Ekstern), Hansen, N. (Intern), Juul Jensen, D. (Intern)
Pages: 265-282
Publication date: 1996
Main Research Area: Technical/natural sciences

Publication information
Journal: Phil. Mag. A
Volume: 73
Original language: English
Axisymmetric textures in alumina

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Medendorp Jr., N. (Ekstern), Kruger, K. (Ekstern), Bowman, K. (Ekstern), Juul Jensen, D. (Intern), Toft Sørensen, O. (Ekstern)
Pages: 67-73
Publication date: 1995
Main Research Area: Technical/natural sciences

Publication information
Journal: Textures and Microstructures
Volume: 24
ISSN (Print): 0730-3300
Original language: English
Source: orbit
Source-ID: 293791
Publication: Research - peer-review › Journal article – Annual report year: 1995

EBSP studies of growth rates during recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Number of pages: 37
Publication date: 1995

Host publication information
Title of host publication: The second international conference on grain growth in polycrystalline materials. Abstracts
Place of publication: Tokyo
Publisher: The Iron and Steel Institute of Japan
Main Research Area: Technical/natural sciences
Conference: International Conference on Grain Growth in Polycrystalline Materials, Kitakyushu, Japan, 17/05/1995 - 17/05/1995
Source: orbit
Source-ID: 293261
Publication: Research › Conference abstract in proceedings – Annual report year: 1995

Effects of orientation on growth during recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 119-137
Publication date: 1995

Host publication information
Title of host publication: Microstructural and crystallographic aspects of recrystallization. Proceedings
Place of publication: Roskilde
Publisher: Risø National Laboratory
Editors: Hansen, N., Juul Jensen, D., Liu, Y., Ralph, B.
ISBN (Print): 87-550-2088-7
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 293749
Publication: Research › Article in proceedings – Annual report year: 1995
Growth rates and misorientation relationships between growing nuclei/grains and the surrounding deformed matrix during recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 4117-4129
Publication date: 1995
Main Research Area: Technical/natural sciences

Publication information
Journal: Acta Metallurgica et Materialia
Volume: 43
ISSN (Print): 0956-7151
Original language: English
Source: orbit
Source-ID: 293492
Publication: Research › Journal article – Annual report year: 1995

Influence of localised glide on the recrystallisation of a channel die deformed (211)[111] orientation aluminium single crystal

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Godfrey, A. (Ekstern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 365-370
Publication date: 1995

Host publication information
Title of host publication: Microstructural and crystallographic aspects of recrystallization. Proceedings
Place of publication: Roskilde
Publisher: Risø National Laboratory
Editors: Hansen, N., Juul Jensen, D., Liu, Y., Ralph, B.
ISBN (Print): 87-550-2088-7
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 293752
Publication: Research › Article in proceedings – Annual report year: 1995

Microstructural and crystallographic aspects of recrystallization. Proceedings

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern), Liu, Y. (Intern), Ralph, B. (Ekstern)
Number of pages: 620
Publication date: 1995

Publication information
Place of publication: Roskilde
Publisher: Risø National Laboratory
ISBN (Print): 87-550-2088-7
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 293746
Publication: Research - peer-review › Book – Annual report year: 1995
Microstructural subdivision during cold and hot deformation. A short overview

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Liu, Q. (Intern), Juul Jensen, D. (Intern)
Pages: 211-216
Publication date: 1995

Host publication information
Title of host publication: The 4th European conference on advanced materials and processes. Symposium F: Materials and processing control
Place of publication: Milano
Publisher: Associazione Italiana di Metallurgia
Main Research Area: Technical/natural sciences
Source-ID: 293314
Publication: Research › Article in proceedings – Annual report year: 1995

Microstructure and local crystallography of cold rolled aluminium

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Rosen, G. (Ekstern), Juul Jensen, D. (Intern), Hughes, D. (Ekstern), Hansen, N. (Intern)
Pages: 2563-2579
Publication date: 1995
Main Research Area: Technical/natural sciences

Publication information
Journal: Acta Metallurgica et Materialia
Volume: 43
ISSN (Print): 0956-7151
Original language: English
Source: orbit
Source-ID: 293762
Publication: Research - peer-review › Journal article – Annual report year: 1995

Modelling microstructure and texture development during recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Vandermeer, R. (Ekstern)
Publication date: 1995
Event: Abstract from 5th International Workshop on Computational Modelling of the Mechanical Behaviour of Materials, Aachen, Germany.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 293262
Publication: Research › Conference abstract for conference – Annual report year: 1995

Modern diffraction techniques for measurements of residual strain and texture

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Lorentzen, T. (Intern)
Pages: 249-278
Publication date: 1995

Host publication information
Title of host publication: Proceedings of the first international spring school and symposium on advances in materials science. Vol. 1. Invited lectures
Quantifying recrystallization nucleation and growth kinetics of cold-worked copper by microstructural analysis

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Vandermeer, R. (Ekstern), Juul Jensen, D. (Intern)
Pages: 2227-2235
Publication date: 1995
Main Research Area: Technical/natural sciences

Publication information
Journal: Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science
Volume: 26
ISSN (Print): 1073-5623
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.91 SJR 1.179 SNIP 1.179
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.231 SNIP 1.332 CiteScore 1.78
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.671 SNIP 1.877 CiteScore 2.06
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.481 SNIP 1.63 CiteScore 1.9
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.419 SNIP 1.706 CiteScore 1.76
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
BFI (2011): BFI-level 2
Scopus rating (2011): SJR 1.508 SNIP 1.703 CiteScore 1.78
ISI indexed (2011): ISI indexed yes
Web of Science (2011): Indexed yes
BFI (2010): BFI-level 2
Scopus rating (2010): SJR 1.688 SNIP 1.802
Web of Science (2010): Indexed yes
BFI (2009): BFI-level 2
Scopus rating (2009): SJR 1.608 SNIP 1.53
Web of Science (2009): Indexed yes
BFI (2008): BFI-level 1
Scopus rating (2008): SJR 1.505 SNIP 1.536
Recrystallization kinetics in copper: Comparison between techniques

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Woldt, E. (Ekstern), Juul Jensen, D. (Intern)
Pages: 1717-1724
Publication date: 1995
Main Research Area: Technical/natural sciences

Publication information
Journal: Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science
Volume: 26
ISSN (Print): 1073-5623
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 2
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 2
Scopus rating (2016): CiteScore 1.91 SJR 1.179 SNIP 1.179
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 2
Scopus rating (2015): SJR 1.231 SNIP 1.332 CiteScore 1.78
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 2
Scopus rating (2014): SJR 1.671 SNIP 1.877 CiteScore 2.06
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 2
Scopus rating (2013): SJR 1.481 SNIP 1.63 CiteScore 1.9
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 2
Scopus rating (2012): SJR 1.419 SNIP 1.706 CiteScore 1.76
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
Simulation of recrystallization microstructures and textures in multiple texture component materials

**General information**

State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Vandermeer, R. (Ekstern)
Pages: 177-186
Publication date: 1995

**Host publication information**

Title of host publication: The 4th European conference on advanced materials and processes. Symposium F: Materials and processing control
Place of publication: Milano
Publisher: Associazione Italiana di Metallurgia
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 293305
Publication: Research › Article in proceedings – Annual report year: 1995

Synchrotron radiation diffraction: A novel tool for recrystallization studies in bulk μm³ sized local areas

**General information**

State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Automated determination of crystal orientations from electron backscattering patterns

The electron backscattering pattern (EBSP) technique is widely accepted as being an extremely powerful tool for measuring the crystallographic orientation of individual crystallites in polycrystalline materials. Procedures which allow crystal orientations to be calculated on the bases of the position of the bands or the zone axes of EBSPs have existed for several years now. Until recently, however, the localization of either the bands or the zone axes of EBSPs has required the valuable time and attention of a human operator, thus obviously limiting the amounts of orientation data that can be collected by this method. This thesis describes the development and implementation of a system which enables crystallographic orientations to be obtained fully automatically through the use of computerized analysis and interpretation of EBSPs. More specifically, this thesis will describe the design of a pattern recognition procedure which enables 8 to 12 bands to be localized in typical EBSPs from a modern system. It will be described, how these automatically localized bands can be indexed and used for optimal estimation of the unknown crystal orientations. A necessary prerequisite for precise determination of crystallographic orientations from EBSPs is accurate knowledge of three calibration parameters which describe the position of the point from which the patterns are emitted relative to the phosphor screen on which they are recorded. This thesis will describe a novel method by which these calibration parameters can be estimated with high precision. The quality of EBSPs provides important information about the reliability of the measured crystal orientations and about the perfection of the lattice in which the pattern is generated. A measure which allows the quality of EBSPs to be evaluated quantitatively is therefore described. Presently, little is known about the uncertainty of the lattice orientations which can be measured from EBSPs. This subject will be discussed in detail in this thesis. With the application of newly developed statistical methods for analyzing orientation data it will be shown how the relative precision of lattice orientations measured from EBSPs can be described. By applying this methodology to a large number of EBSPs of varying quality it is demonstrated that the precision of automatically measured crystal orientations is comparable to the precision obtained, when the positions of four to five bands are supplied by an experienced and careful operator.

Annealing textures in aluminium deformed by hot plane strain compression

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Bolingbroke, R. (Ekstern), Shi, H. (Ekstern), Shahani, R. (Ekstern), Furu, T. (Ekstern)
Pages: 1991-1996
Publication date: 1994
Automated EBSP studies of deformation microstructures

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 612-613
Publication date: 1994

Host publication information
Title of host publication: Proceedings of the 52nd annual meeting Microscopy Society of America; Twenty-ninth annual meeting Microbeam Analysis Society
Place of publication: San Francisco, CA
Publisher: San Francisco Press Inc.
Editors: Bailey, G., Garratt-Reed, A.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 292473
Publication: Research › Article in proceedings – Annual report year: 1994

Automatic recognition of deformed and recrystallized regions in partly recrystallized samples using electron back scattering patterns

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Krieger Lassen, N. (Ekstern), Juul Jensen, D. (Intern), Conradsen, K. (Ekstern)
Pages: 149-158
Publication date: 1994

Host publication information
Title of host publication: Proceedings of the 10th International Conference on Textures of Materials : ICOTOM-10
Publisher: Transtec Publications LTD
ISBN (Print): 0-87849-681-5
Series: Materials Science Forum
Volume: 157/162
ISSN: 0255-5476
Main Research Area: Technical/natural sciences
Conference: 10th International Conference on Textures of Materials, Clausthal, Germany, 20/09/1993 - 20/09/1993
RECRYSTALLIZATION, ELECTRON BACK SCATTERING PATTERNS, IMAGE PROCESSING, GROWTH RATE, FOURIER TRANSFORM, CLASSIFICATION, AUTOMATION
DOIs:
Comparison of texture measurements on two phase α/β-brass obtained by x-ray and neutron diffraction

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Engler, O. (Ekstern), Juul Jensen, D. (Intern)
Pages: 25-30
Publication date: 1994
Main Research Area: Technical/natural sciences

Publication information
Volume: 30
Original language: English
Source: orbit
Source-ID: 292797
Publication: Research › Journal article – Annual report year: 1994

Deformation microstructures in channel-die compressed aluminium crystals

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Driver, J. (Ekstern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 227-234
Publication date: 1994

Host publication information
Title of host publication: Aluminum alloys. Their physical and mechanical properties (ICAA 4). Vol. 1
Place of publication: Atlanta, GA
Publisher: The Georgia Institute of Technology
Editors: Sanders Jr., T., Starke Jr., E.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 292319
Publication: Research › Article in proceedings – Annual report year: 1994

Flange thickness in a radial extruded tubular component - strain state, texture and strain models

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 249-254
Publication date: 1994

Host publication information
Title of host publication: Numerical predictions of deformation processes and the behaviour of real materials. Proceedings
Place of publication: Roskilde
Publisher: Risø National Laboratory
Editors: Andersen, S., Bilde-Sørensen, J., Lorentzen, T., Pedersen, O., Sørensen, N.
ISBN (Print): 87-550-1997-8
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 292358
Publication: Research › Article in proceedings – Annual report year: 1994
Flow stress anisotropy in coarse grained aluminium

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 231-234
Publication date: 1994

Host publication information
Title of host publication: Strength of materials. Fundamental physical aspects of the strength of crystalline materials. ICSMA 10
Place of publication: Sendai
Publisher: Japan Institute of Metals
Editors: Oikawa, H., Maruyama, K., Takeuchi, S., Yamaguchi, M.
Series: JIMIC-2
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 292347
Publication: Research › Article in proceedings – Annual report year: 1994

Flow stress of Al-SiC composites deformed to a large range of strains

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Liu, Y. (Intern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 385-388
Publication date: 1994

Host publication information
Title of host publication: Strength of materials. Fundamental physical aspects of the strength of crystalline materials. ICSMA 10
Place of publication: Sendai
Publisher: Japan Institute of Metals
Editors: Oikawa, H., Maruyama, K., Takeuchi, S., Yamaguchi, M.
Series: JIMIC-2
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 292352
Publication: Research › Article in proceedings – Annual report year: 1994

Grain subdivision during deformation of polycrystalline aluminium

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern)
Pages: 1211-1218
Publication date: 1994

Conference: 10th International Conference on Textures of Materials, Clausthal, Germany, 20/09/1993 - 20/09/1993
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science Forum
Volume: 157/162
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
Hardening behaviour of metal matrix composites coupled to numerical predictions

General information
State: Published
Large strain deformation structures in aluminium crystals with rolling texture orientations

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Driver, J. (Ekstern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 3105-3114
Publication date: 1994
Main Research Area: Technical/natural sciences

Publication information
Journal: Acta Metallurgica et Materialia
Volume: 42
ISSN (Print): 0956-7151
Original language: English
Source: orbit
Source-ID: 292464
Publication: Research - peer-review › Journal article – Annual report year: 1994

Microstructural modelling of industrial thermomechanical processing

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Sellars, C. (Ekstern), Humphreys, F. (Ekstern), Nes, E. (Ekstern), Juul Jensen, D. (Intern)
Pages: 109-133
Publication date: 1994
Main Research Area: Technical/natural sciences

Host publication information
Title of host publication: Numerical predictions of deformation processes and the behaviour of real materials. Proceedings
Place of publication: Roskilde
Publisher: Risø National Laboratory
Editors: Andersen, S., Bilde-Sørensen, J., Lorentzen, T., Pedersen, O., Sørensen, N.
ISBN (Print): 87-550-1997-8
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 292356
Publication: Research › Article in proceedings – Annual report year: 1994

Microstructural modelling of industrial thermomechanical processing of aluminium alloys

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Modeling microstructural evolution of multiple texture components during recrystallization

Models were formulated in an effort to characterize recrystallization in materials with multiple texture components. The models are based on a microstructural path methodology (MPM). Experimentally the microstructural evolution of commercial aluminum during recrystallization was characterized using stereological point and lineal measurements of microstructural properties in combination with EBSP analysis for orientation determinations. The potential of the models to describe the observed recrystallization behavior of heavily cold-rolled commercial aluminum was demonstrated. A successful MPM model was deduced which, for each texture component-random, rolling and cube orientations, was quantitatively consistent with the measured microstructural properties. Nucleation and growth rates were deduced for each texture component using the model.
Modern diffraction techniques for measurements of residual stress and texture

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Lorentzen, T. (Intern)
Publication date: 1994

Host publication information
Title of host publication: SAMS 94. Abstracts
Place of publication: Cairo
Publisher: Egyptian Society of Solid State Science
Main Research Area: Technical/natural sciences
Conference: 1st International Spring School and Symposium on Advances in Materials Science; 7th Conference on Solid State Science, Cairo, Egypt, 15/03/1994 - 15/03/1994

On the estimation of Cahn-Hagel interface migration rates

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Vandermeer, R. (Ekstern), Juul Jensen, D. (Intern)
Pages: 1575-1580
Publication date: 1994
Main Research Area: Technical/natural sciences

Publication information
Journal: Scripta Metallurgica et Materialia
Volume: 30
Issue number: 12
ISSN (Print): 0956-716X
Original language: English
DOI: 10.1016/0956-716X(94)90311-5
Source: orbit
Source-ID: 292643
Publication: Research › Journal article – Annual report year: 1994

On the statistical analysis of orientation data

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Krieger Lassen, N. (Ekstern), Juul Jensen, D. (Intern)
Pages: 741-748
Publication date: 1994
Main Research Area: Technical/natural sciences

Publication information
Volume: 50
Issue number: 6
ISSN (Print): 0108-7673
Ratings:
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Relations between microstructure texture and mechanical properties

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Number of pages: 1,257
Publication date: 1994

Host publication Information
Title of host publication: Frühjahrstagung der Arbeitskreises Festkörperphysik bei der DPG
Place of publication: Weinheim
Publisher: Deutsche Physikalische Gesellschaft

Series: Verhandlungen der Deutschen Physikalischen Gesellschaft, 5
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 292777
Publication: Research - peer-review › Book chapter – Annual report year: 1994
Textural and microstructural evolution during cold-rolling of pure nickel
High purity nickel (99.99%) with a grain size about 100 μm has deformed by cold-rolling from 37% to 98% reductions. The deformation microstructures and the crystallographic texture have been characterised using transmission electron microscopy and neutron diffraction, respectively. The microstructural evolution has been described within a general framework which consists of a grain subdivision by dislocation boundaries on a finer and finder scale with increasing strain. The influence of this deformation pattern on the texture development is discussed.

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern), Hughes, D. (Ekstern)
Pages: 693-700
Publication date: 1994

Host publication information
Title of host publication: Proceedings of the 10th International Conference on Textures of Materials
ISBN (Print): 0-87849-681-5

Series: Materials Science Forum
Volume: 157-162
ISSN: 0255-5476
Main Research Area: Technical/natural sciences
Conference: 10th International Conference on Textures of Materials, Clausthal, Germany, 20/09/1993 - 20/09/1993
Nickel, Cold-rolling, Microstructure, Texture, Deformation pattern, Geometrically necessary boundaries, Cell blocks
DOIs: 10.4028/www.scientific.net/MSF.157-162.693
Publication: Research - peer-review › Article in proceedings – Annual report year: 1994

Texture development in Al 3003 during hot plane strain compression

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Shi, H. (Ekstern), Bolingbroke, R. (Ekstern)
Pages: 745-752
Publication date: 1994
Conference: 10th International Conference on Textures of Materials, Clausthal, Germany, 20/09/1993 - 20/09/1993
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science Forum
Volume: 157/162
ISSN (Print): 0255-5476
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 0.28 SJR 0.186 SNIP 0.306
BFI (2015): BFI-level 1
Scopus rating (2015): SNIP 0.337 SJR 0.217 CiteScore 0.29
BFI (2014): BFI-level 1
Scopus rating (2014): SNIP 0.448 SJR 0.269 CiteScore 0.33
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SNIP 0.342 SJR 0.235 CiteScore 0.28
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Texture development in aluminium during hot working - experiment and simulation

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Richter, H. (Ekstern), Juul Jensen, D. (Intern)
Pages: 259-266
Publication date: 1994

Host publication information
Title of host publication: Aluminum alloys. Their physical and mechanical properties (ICAA 4). Vol. 1
Place of publication: Atlanta, GA
Publisher: The Georgia Institute of Technology
Editors: Sanders Jr., T., Starke Jr., E.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 292328
Publication: Research › Article in proceedings – Annual report year: 1994
Automatic recognition of deformed and recrystallized regions in partly recrystallized samples using electron back scattering patterns

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Krieger Lassen, N. (Ekstern), Juul Jensen, D. (Intern), Conradsen, K. (Ekstern)
Number of pages: 83
Publication date: 1993

Host publication information
Title of host publication: ICOTOM 10. Tenth international conference on textures of materials. Abstracts
Place of publication: Clausthal-Zellerfeld
Publisher: Institut für Metallkunde und Metallphysik
Main Research Area: Technical/natural sciences
Conference: 10th International Conference on Textures of Materials, Clausthal, Germany, 20/09/1993 - 20/09/1993
Source: orbit
Source-ID: 291103
Publication: Research › Conference abstract in proceedings – Annual report year: 1993

Avanceret materialeforskning og forskningsreaktor DR3 som fællesEuropæisk forskningsfacilitet

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Kjems, J. (Intern)
Publication date: 1993
Event: Abstract from Besøg af Folketingets Forskningsudvalg, Risø, Denmark.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 291389
Publication: Research › Conference abstract for conference – Annual report year: 1993

Comparison of texture measurements in two phase α/β-brass obtained by x-ray and neutron diffraction

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Engler, O. (Ekstern), Juul Jensen, D. (Intern)
Number of pages: 134
Publication date: 1993

Host publication information
Title of host publication: ICOTOM 10. Tenth international conference on textures of materials. Abstracts
Place of publication: Clausthal-Zellerfeld
Publisher: Institut für Metallkunde und Metallphysik
Main Research Area: Technical/natural sciences
Conference: 10th International Conference on Textures of Materials, Clausthal, Germany, 20/09/1993 - 20/09/1993
Source: orbit
Source-ID: 291104
Publication: Research › Conference abstract in proceedings – Annual report year: 1993

Deformation and recrystallization of metal matrix composites

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern), Liu, Y. (Intern)
Pages: 55-66
Publication date: 1993

Host publication information
Title of host publication: Recrystallization '92
Place of publication: Aedermannsdorf
Grain subdivision during deformation of polycrystalline aluminium

Modeling microstructural evolution of multiple texture components during recrystallization

Modelling of recrystallization in Al-2%SiC
Neutronspredning - et vigtigt værktøj i materialeforskningen

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Lorentzen, T. (Intern), Pedersen, J. (Intern)
Pages: 10-11
Publication date: 1993
Main Research Area: Technical/natural sciences

Publication information
Journal: Risønyt
Issue number: 1
Original language: Danish
Source: orbit
Source-ID: 291361
Publication: Communication › Journal article – Annual report year: 1993

Orientation aspects of growth during recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Publication date: 1993
Event: Abstract from TU Mining Academy Freiberg, Department of Materials Science, Freiberg (DE), 30 Sep, .
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 291075
Publication: Research › Conference abstract for conference – Annual report year: 1993

Recovery of cold rolled aluminium containing SiC whiskers

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Liu, Y. (Intern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 539-544
Publication date: 1993

Host publication information
Title of host publication: Recrystallization '92
Place of publication: Aedermannsdorf
Publisher: Trans Tech Publications
Editors: Fuentes, M., Gil Sevillano, J.

Series: Materials Science Forum
Volume: 113-115
ISSN: 0255-5476
Main Research Area: Technical/natural sciences
Recovery of deformation microstructures in pure aluminium

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Rosen, G. (Ekstern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 201-206
Publication date: 1993

Host publication information
Title of host publication: Recrystallization '92
Place of publication: Aedermannsdorf
Publisher: Trans Tech Publications
Editors: Fuentes, M., Gil Sevillano, J.

Series: Materials Science Forum
Volume: 113-115
ISSN: 0255-5476
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 291461
Publication: Research - peer-review › Article in proceedings – Annual report year: 1993

Textural and microstructural evolution during cold-rolling of pure nickel

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern), Hughes, D. (Ekstern)
Number of pages: 70
Publication date: 1993

Host publication information
Title of host publication: ICOTOM 10. Tenth international conference on textures of materials. Abstracts
Place of publication: Clausthal-Zellerfeld
Publisher: Institut für Metallkunde und Metalphysik
Main Research Area: Technical/natural sciences
Conference: 10th International Conference on Textures of Materials, Clausthal, Germany, 20/09/1993 - 20/09/1993
Source: orbit
Source-ID: 291112
Publication: Research › Conference abstract in proceedings – Annual report year: 1993

Texture development during hot plane strain compression in Al 3003

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Heying Shi (Ekstern), Bolingbroke, R. (Ekstern)
Number of pages: 213
Publication date: 1993

Host publication information
Title of host publication: ICOTOM 10. Tenth international conference on textures of materials. Abstracts
Place of publication: Clausthal-Zellerfeld
Publisher: Institut für Metallkunde und Metalphysik
Main Research Area: Technical/natural sciences
Conference: 10th International Conference on Textures of Materials, Clausthal, Germany, 20/09/1993 - 20/09/1993
Source: orbit
Thermomechanical behaviour and finite element modelling of metal matrix composites

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern), Liu, Y. (Intern), Sørensen, N. (Ekstern)
Pages: 1705-1710
Publication date: 1993
Main Research Area: Technical/natural sciences

Publication information
Journal: Journal de Physique IV
Volume: 3
Issue number: C7
ISSN (Print): 1155-4339
Ratings:
BFI (2008): BFI-level 1
Web of Science (2005): Indexed yes
Web of Science (2004): Indexed yes
Web of Science (2003): Indexed yes
Web of Science (2002): Indexed yes
Web of Science (2000): Indexed yes
Original language: English
Source: orbit
Source-ID: 291468
Publication: Research - peer-review › Journal article – Annual report year: 1994

Thermomechanical experiments and 3-D finite element modelling of metal matrix composites

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern), Liu, Y. (Intern), Sørensen, N. (Ekstern)
Publication date: 1993

Host publication information
Title of host publication: The 3. European conference on advanced materials and processes. Abstracts
Place of publication: Paris
Publisher: Les Éditions de Physique
Main Research Area: Technical/natural sciences
Conference: EUROMAT 93, Paris (FR), 8-10 Jun, 01/01/1993
Source: orbit
Source-ID: 291301
Publication: Research › Conference abstract in proceedings – Annual report year: 1993

Automatic indexing of EBSPs and their use for studies of deformation and recrystallisation

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Publication date: 1992
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 290364
Publication: Research › Conference abstract for conference – Annual report year: 1992
Flow stress anisotropy caused by geometrically necessary boundaries

The microstructural anisotropy of deformed metal is related to the formation of geometrically necessary boundaries such as dense dislocation walls and microbands. These boundaries have a macroscopic orientation with respect to the sample axes and they can resist slip due to a high concentration of dislocations. A model has been proposed for this microstructural anisotropy based on the assumptions that (i) the average slip plane is at an angle of 45-degrees to the direction of the applied stress and that (ii) a strengthening parameter is the mean distance in the slip plane between the geometrically necessary boundaries. For different macroscopic arrangements of such boundaries, the model predictions are in good qualitative and quantitative agreement with experiments.
Image processing procedures for analysis of electron back scattering patterns

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Krieger Lassen, N. (Ekstern), Juul Jensen, D. (Intern), Conradsen, K. (Ekstern)
Pages: 115-121
Publication date: 1992
Main Research Area: Technical/natural sciences

Implementation and application of a PSD set-up for neutron diffraction strain measurements

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Lorentzen, T. (Intern), Leffers, T. (Intern), Juul Jensen, D. (Intern)
Pages: 313-327
Publication date: 1992
Main Research Area: Technical/natural sciences

Kinetic texture measurements

General information
Measurement of texture in zirconium with a line-focus acoustic microscope

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Kielczynski, P. (Ekstern), Bussiere, J. (Ekstern), Root, J. (Ekstern), Juul Jensen, D. (Intern)
Pages: 497-506
Publication date: 1992
Main Research Area: Technical/natural sciences

Publication Information
Journal: Nondestructive Testing and Evaluation
Volume: 8/9
ISSN (Print): 1058-9759
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): SJR 0.563 SNIP 0.706 CiteScore 1.11
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.427 SNIP 0.934 CiteScore 1.14
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.389 SNIP 1.054 CiteScore 0.99
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.421 SNIP 1.083 CiteScore 1.14
ISI indexed (2013): ISI indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.42 SNIP 0.808 CiteScore 0.67
ISI indexed (2012): ISI indexed yes
BFI (2011): BFI-level 1
Scopus rating (2011): SJR 0.74 SNIP 1.36 CiteScore 1.01
Microstructure development during recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Publication date: 1992
Event: Abstract from Workshop on Fundamentals of recrystallization, Zeltingen (DE), 23-26 Mar,
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 290362
Publication: Research › Conference abstract for conference – Annual report year: 1992

Modelling of microstructure development during recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 1551-1556
Publication date: 1992
Main Research Area: Technical/natural sciences

Publication information
Journal: Scripta Metallurgica et Materialia
Volume: 27
Issue number: 11
ISSN (Print): 0956-716X
Original language: English
DOIs: 10.1016/0956-716X(92)90143-3
Source: orbit
Source-ID: 289856
Publication: Research › Journal article – Annual report year: 1992

Modelling of plastic deformation and its engineering applications

General information
State: Published
Modelling the effect of microstructure on yield anisotropy

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Rollett, A. (Ekstern), Juul Jensen, D. (Intern), Stout, M. (Ekstern)
Pages: 93-109
Publication date: 1992

Host publication information
Title of host publication: Modelling of plastic deformation and its engineering applications
Place of publication: Roskilde
Publisher: Risø National Laboratory
Editors: Andersen, S., Bilde-Sørensen, J., Hansen, N., Juul Jensen, D., Leffers, T., Lilholt, H., Lorentzen, T., Pedersen, O., Ralph, B.
ISBN (Print): 87-550-1826-2
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 290156
Publication: Research › Article in proceedings – Annual report year: 1992

Neutron diffraction texture and residual stress measurements

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Publication date: 1992
Event: Abstract from F3 Seminar. Paul Scherrer Institute, Würenlingen, Switzerland.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 290356
Publication: Research › Conference abstract for conference – Annual report year: 1992

Orientation of platelet reinforcements in ceramic matrix composites produced by pressure filtration

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 172-179
Publication date: 1992

Host publication information
Quantitative simulation of the copper-type rolling texture

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Leffers, T. (Intern), Juul Jensen, D. (Intern)
Pages: 323-329
Publication date: 1992

Host publication information
Title of host publication: Modelling of plastic deformation and its engineering applications
Place of publication: Roskilde
Publisher: Risø National Laboratory
Editors: Andersen, S., Bilde-Sørensen, J., Hansen, N., Juul Jensen, D., Leffers, T., Liholt, H., Lorentzen, T., Pedersen, O., Ralph, B.
ISBN (Print): 87-550-1826-2
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 290158
Publication: Research › Article in proceedings – Annual report year: 1992

Recovery and recrystallization in cold-rolled Al-SiCw composites

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Liu, Y. (Intern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 807-819
Publication date: 1992
Main Research Area: Technical/natural sciences

Publication information
Journal: Metallurgical Transactions A
Volume: 23
ISSN (Print): 0360-2133
Ratings:
Scopus rating (2016): SJR 0.259 SNIP 0.513
Scopus rating (2010): SJR 0.121 SNIP 13.846
Scopus rating (2009): SJR 0.289 SNIP 3.549
Scopus rating (2008): SJR 0.122 SNIP 4.613
Scopus rating (2006): SJR 0.557 SNIP 5.245
Scopus rating (2005): SJR 1.199 SNIP 2.594
Scopus rating (2004): SJR 1.412 SNIP 2.796
Scopus rating (2003): SJR 1.381 SNIP 1.83
Scopus rating (2002): SJR 1.046 SNIP 1.465
Recrystallization and texture transformation kinetics in isothermaly annealed cold rolled copper

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Bunsch, A. (Ekstern), Juul Jensen, D. (Intern)
Pages: 157-173
Publication date: 1992
Main Research Area: Technical/natural sciences

Publication information
Volume: 37
Issue number: 2
Original language: English
Source: orbit
Source-ID: 289994
Publication: Research › Journal article – Annual report year: 1992

Residual stress and texture measurements: Practical applicability

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Lorentzen, T. (Intern)
Pages: 201-219
Publication date: 1992

Host publication information
Title of host publication: Industrial and technological applications of neutrons
Place of publication: Amsterdam
Publisher: North-Holland
Editors: Fontana, M., Rustichelli, F., Coppola, R.
Main Research Area: Technical/natural sciences
Conference: International school of physics Enrico Fermi. Course 114, Villa Marigola (IT), 19-29 Jun, 01/01/1990
Source: orbit
Source-ID: 289943
Publication: Research › Article in proceedings – Annual report year: 1992

Residual stress evaluation in a welded tube assembly using neutron diffraction

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 241-246
Publication date: 1992

Host publication information
Title of host publication: Residual stresses - III. Science and technology. Vol. 1
Place of publication: London
Publisher: Elsevier Applied Science Publishers
Editors: Fujiwara, H., Abe, T., Tanaka, K.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 289769
Publication: Research › Article in proceedings – Annual report year: 1992
The DR3 Risø reactor as a user facility for applied neutron scattering experiments: Texture, internal strain and applied small angle scattering

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Lorentzen, T. (Intern), Pedersen, J. (Intern)
Pages: 420-425
Publication date: 1992

Host publication information
Title of host publication: Proceedings of the 2. European conference on advanced materials and processes. Vol. 3: Advanced devices and techniques
Place of publication: London
Publisher: Institute of Materials
Editors: Clyne, T., Withers, P.
Main Research Area: Technical/natural sciences
Conference: EUROMAT 91, Cambridge (GB), Jul, 01/01/1991
Source: orbit
Source-ID: 289614
Publication: Research › Article in proceedings – Annual report year: 1992

The influence of grain size and texture on the flow stress of pure copper

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern), Tang, Y. (Ekstern), Ralph, B. (Ekstern)
Pages: 285-290
Publication date: 1992

Host publication information
Title of host publication: Modelling of plastic deformation and its engineering applications
Place of publication: Roskilde
Publisher: Risø National Laboratory
Editors: Andersen, S., Bilde-Sørensen, J., Hansen, N., Juul Jensen, D., Leffers, T., Lilholt, H., Lorentzen, T., Pedersen, O., Ralph, B.
ISBN (Print): 87-550-1826-2
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 290157
Publication: Research › Article in proceedings – Annual report year: 1992

An ODF study of the deformation and recrystallization textures of rolled and channel-die compacted high purity copper

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 165-187
Publication date: 1991
Main Research Area: Technical/natural sciences

Publication information
Journal: Textures and Microstructures
Volume: 13
ISSN (Print): 0730-3300
Original language: English
Source: orbit
Source-ID: 289295
Publication: Research - peer-review › Journal article – Annual report year: 1991
Band positions used for on-line crystallographic orientation determination from electron back scattering patterns

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Schmidt, N. (Ekstern), Bilde-Sørensen, J. (Intern), Juul Jensen, D. (Intern)
Pages: 637-643
Publication date: 1991
Main Research Area: Technical/natural sciences

Publication information
Journal: Scanning Microscopy
Volume: 5
ISSN (Print): 0891-7035
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
Scopus rating (1999): SJR 0.28 SNIP 0.56
Original language: English
Source: orbit
Source-ID: 288996
Publication: Research - peer-review › Journal article – Annual report year: 1991

Effect of dispersion parameters and cold deformation on recrystallisation of Al-SiC composites

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Liu, Y. (Intern), Hansen, N. (Intern), Juul Jensen, D. (Intern)
Pages: 270-275
Publication date: 1991
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science and Technology
Volume: 7
ISSN (Print): 0267-0836
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.43 SJR 0.814 SNIP 0.812
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.632 SNIP 0.764 CiteScore 1.1
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): SJR 0.788 SNIP 1.005 CiteScore 1.1
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): SJR 0.636 SNIP 0.868 CiteScore 0.92
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): SJR 0.683 SNIP 0.979 CiteScore 0.86
ISI indexed (2012): ISI indexed yes
Web of Science (2012): Indexed yes
Effect of recrystallisation temperature on texture and grain size of Al-SiC composite

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Hansen, N. (Intern), Liu, Y. (Intern)
Pages: 369-375
Publication date: 1991
Main Research Area: Technical/natural sciences

Publication information
Journal: Materials Science and Technology
Volume: 7
ISSN (Print): 0267-0836
Ratings:
BFI (2018): BFI-level 1
BFI (2017): BFI-level 1
Web of Science (2017): Indexed Yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 1.43 SJR 0.814 SNIP 0.812
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): SJR 0.632 SNIP 0.764 CiteScore 1.1
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Effect of whiskers and small particles on the deformation and recrystallization texture of aluminium

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern), Liu, Y. (Intern)
Pages: 835-840
Publication date: 1991
Main Research Area: Technical/natural sciences

Publication information
Journal: Textures and Microstructures
Volume: 14/18
ISSN (Print): 0730-3300
Original language: English
Source: orbit
Publication: Research - peer-review › Journal article – Annual report year: 1991
F2-P4 the DR3 Risø reactor as a user facility for applied neutron scattering experiments: Texture, internal strain and applied small angle scattering

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Lorentzen, T. (Intern), Pedersen, J. (Intern), Clausen, K. (Ekstern)
Pages: 421-423
Publication date: 1991

Host publication information
Title of host publication: 2. European conference on advanced materials and processes. Abstracts
Place of publication: London
Publisher: The Institute of Metals
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 289358
Publication: Research › Article in proceedings – Annual report year: 1991

Flow stress anisotropy in cross rolled aluminium

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 179-186
Publication date: 1991

Host publication information
Title of host publication: Strength of metals and alloys. Vol. 1
Place of publication: London
Publisher: Freund Publishing Company
Editors: Brandon, D., Chaim, R., Rosen, A.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 289357
Publication: Research › Article in proceedings – Annual report year: 1991

Hot extrusion of Al-SiC. Texture and microstructure

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Liu, Y. (Intern), Hansen, N. (Intern)
Pages: 417-422
Publication date: 1991

Host publication information
Title of host publication: Metal matrix composites - processing, microstructure and properties
Place of publication: Roskilde
Publisher: Risø National Laboratory
Editors: Hansen, N., Juul Jensen, D., Leffers, T., Litholt, H., Lorentzen, T., Schrøder Pedersen, A., Pedersen, O., Ralph, B.
ISBN (Print): 87-550-1750-9
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 289290
Influence of texture and microstructure on flow stress

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern)
Pages: 953-960
Publication date: 1991

Host publication information
Title of host publication: Strength of metals and alloys. Vol. 2
Place of publication: London
Publisher: Freund Publishing Company
Editors: Brandon, D., Chaim, R., Rosen, A.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 289335
Publication: Research › Article in proceedings – Annual report year: 1991

Local texture measurements by EBSP. New computer procedures

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Schmidt, N. (Ekstern)
Pages: 97-102
Publication date: 1991
Main Research Area: Technical/natural sciences

Publication information
Journal: Textures and Microstructures
Volume: 14/18
ISSN (Print): 0730-3300
Original language: English
Source: orbit
Source-ID: 289479
Publication: Research - peer-review › Journal article – Annual report year: 1992

Mechanisms of deformation, recovery and recrystallization of aluminium

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern)
Pages: 3-19
Publication date: 1991

Host publication information
Title of host publication: Hot deformation of aluminium alloys
Place of publication: Warrendale, PA
Publisher: The Minerals, Metals and Materials Society
Editors: Langdon, T., Merchant, H., Morris, J., Zaidi, M.
Main Research Area: Technical/natural sciences
Conference: 1990 TMS fall meeting, Detroit, MI, United States, 07/10/1990 - 07/10/1990
Source: orbit
Source-ID: 289092
Publication: Research › Article in proceedings – Annual report year: 1991

Metal matrix composites - processing, microstructure and properties
General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy, Materials Research Division
Number of pages: 750
Publication date: 1991

Publication information
Place of publication: Roskilde
Publisher: Risø National Laboratory
ISBN (Print): 87-550-1750-9
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 289283
Publication: Research - peer-review › Book – Annual report year: 1991

Microscopic and crystallographic aspects of flow stress anisotropy

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern)
Pages: 131-134
Publication date: 1991

Host publication information
Title of host publication: Anisotropy and localization of plastic deformation
Place of publication: London
Publisher: Elsevier Applied Science Publishers
Editors: Boehler, J., Khan, A.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 289333
Publication: Research › Article in proceedings – Annual report year: 1991

Plastic anisotropy in aluminium - effect of texture and microstructure

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 93-100
Publication date: 1991
Main Research Area: Technical/natural sciences

Publication information
Journal: Metallurgical Science & Technology
Volume: 9
Issue number: 2
ISSN (Print): 0393-6074
Ratings:
ISI indexed (2013): ISI indexed no
ISI indexed (2012): ISI indexed no
ISI indexed (2011): ISI indexed no
Original language: English
Source: orbit
Source-ID: 288953
Publication: Research - peer-review › Journal article – Annual report year: 1991
Texture and grain size control during annealing of an Al-SiC composite material

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 853-858
Publication date: 1991
Main Research Area: Technical/natural sciences

Publication information
Journal: Textures and Microstructures
Volume: 14/18
ISSN (Print): 0730-3300
Original language: English
Source: orbit
Source-ID: 289502
Publication: Research - peer-review › Journal article – Annual report year: 1992

Texture in neodymium-iron-boron permanent magnets

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Bøjsøe-Jørgensen, P. (Ekstern), Juul Jensen, D. (Intern), Clausen, K. (Ekstern), Thorsen, K. (Ekstern), Hirosawa, S. (Ekstern)
Pages: 277-282
Publication date: 1991

Host publication information
Title of host publication: Metal matrix composites - processing, microstructure and properties
Place of publication: Roskilde
Publisher: Risø National Laboratory
Editors: Hansen, N., Juul Jensen, D., Leffers, T., Lilholt, H., Lorentzen, T., Schröder Pedersen, A., Pedersen, O., Ralph, B.
ISBN (Print): 87-550-1750-9
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 289289
Publication: Research › Article in proceedings – Annual report year: 1991

The relation between texture and microstructure in rolled FCC materials

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Leffers, T. (Intern), Juul Jensen, D. (Intern)
Pages: 933-952
Publication date: 1991
Main Research Area: Technical/natural sciences

Publication information
Journal: Textures and Microstructures
Volume: 14/18
ISSN (Print): 0730-3300
Original language: English
Source: orbit
Source-ID: 289506
Publication: Research - peer-review › Journal article – Annual report year: 1992

Thermomechanical processing of Al-SiC composites. Microstructure and texture

General information
Effect of recrystallization temperature on texture and grain size of an Al-SiC composite

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Liu, Y. (Intern), Hansen, N. (Intern), Juul Jensen, D. (Intern)
Number of pages: 40
Publication date: 1990

Host publication information
Title of host publication: Microstructure and mechanical processing. Abstracts
Place of publication: London
Publisher: The Institute of Metals
Main Research Area: Technical/natural sciences
Conference: Microstructure and Mechanical Processing, Cambridge, United Kingdom, 28/03/1990 - 28/03/1990
Source: orbit
Source-ID: 288849
Publication: Research › Article in proceedings – Annual report year: 1990
Flow stress anisotropy in aluminium

The plastic anisotropy of cold-rolled high purity aluminum (99.996%) and commercially pure aluminum (99.6%) has been investigated. Sample parameters were the initial grain size and the degree of plastic strain ( < 3.00). Flow stresses (0.2% offset) were measured at room temperature by uniaxial tension as a function of the angle between the tensile axis and the rolling direction. Textures were determined by neutron diffraction, and Taylor M-factors were calculated. The microstructures were studied by TEM. It was found that the flow stress varies significantly with orientation both at low and high strains. It is shown that for most experimental conditions, texture effects alone cannot explain the observed anisotropy, and microstructural anisotropy effects have to be taken into account. In those cases, a correlation between the microstructural anisotropy and the development of microbands is discussed.

Modelling of recrystallization texture and microstructure

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 661-666
Publication date: 1990

Host publication information
Title of host publication: International conference on recrystallization in metallic materials. Proceedings
Place of publication: Warrendale, PA
Publisher: The Minerals, Metals and Materials Society
Editor: Chandra, T.
Main Research Area: Technical/natural sciences
Conference: 1st International Conference on Recrystallization in Metallic Materials, Wollongong, Australia, 22/01/1990 - 22/01/1990
Source: orbit
Source-ID: 288743
Publication: Research › Article in proceedings – Annual report year: 1990
Nucleation and growth in cold-rolled aluminium containing silicon carbide whiskers and aluminium oxide particles

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Liu, Y. (Intern), Hansen, N. (Intern), Juul Jensen, D. (Intern)
Pages: 529-534
Publication date: 1990

Host publication information
Title of host publication: Proceedings of the 7. international conference on composite materials. Vol. 1
Place of publication: Beijing
Publisher: International Academic Publishers
Editors: Wu Yunshu, Gu Zhenlong, Wu Renjie
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 288462
Publication: Research › Article in proceedings – Annual report year: 1990

Phase transformations in MMC reinforcements

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 313-324
Publication date: 1990

Host publication information
Title of host publication: Fundamental relationships between microstructures and mechanical properties of metal matrix composites
Place of publication: Warrendale, PA
Publisher: Minerals, Metals and Materials Society
Editors: Liaw, P., Gungor, M.
Main Research Area: Technical/natural sciences
Conference: Symposium on fundamental relationships between microstructures and mechanical properties of metal matrix composites, Indianapolis, IN, 1-5 Oct, 01/01/1989
Source: orbit
Source-ID: 288589
Publication: Research › Article in proceedings – Annual report year: 1990

Recrystallization of metals containing particles and fibres

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern)
Pages: 79-88
Publication date: 1990

Host publication information
Title of host publication: International conference on recrystallization in metallic materials. Proceedings
Place of publication: Warrendale, PA
Publisher: The Minerals, Metals and Materials Society
Editor: Chandra, T.
Main Research Area: Technical/natural sciences
Conference: 1st International Conference on Recrystallization in Metallic Materials, Wollongong, Australia, 22/01/1990 - 22/01/1990
Source: orbit
Source-ID: 288741
Publication: Research › Article in proceedings – Annual report year: 1990
The effect of bending and straightening on rolling texture and microstructure in brass

General information
Combined Advanced Techniques in the Study of Annealing Processes

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Randle, V. (Ekstern)
Pages: 103-126
Publication date: 1989

Host publication information
Title of host publication: Materials Architecture
Place of publication: Roskilde
Publisher: Risø National Laboratory
Editors: Bilde-Sørensen, J., Hansen, N., Juul Jensen, D., Leffers, T., Liiholt, H., Pedersen, O.
ISBN (Print): 87-550-1551-4
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 288318
Publication: Research › Article in proceedings – Annual report year: 1989

Fast Texture Measurements by Neutron Diffraction Technique and Applications

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 521-526
Publication date: 1989
Main Research Area: Technical/natural sciences

Publication information
Volume: 81
Original language: English
Source: orbit
Source-ID: 288074
Publication: Research › Journal article – Annual report year: 1989

Fast Texture Measurements using a Position Sensitive Detector

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Recrystallization Microstructure in Cold-Rolled Aluminum Composites Reinforced by Silicon Carbide Whiskers

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Liu, Y. (Intern), Hansen, N. (Intern), Juul Jensen, D. (Intern)
Pages: 1743-1753
Publication date: 1989
Main Research Area: Technical/natural sciences

Publication information
Journal: Metallurgical Transactions A
Volume: 20
ISSN (Print): 0360-2133
Ratings:
Scopus rating (2016): SJR 0.259 SNIP 0.513
Scopus rating (2010): SJR 0.121 SNIP 13.846
Scopus rating (2009): SJR 0.289 SNIP 3.549
Scopus rating (2008): SJR 0.122 SNIP 4.613
Scopus rating (2006): SJR 0.557 SNIP 5.245
Scopus rating (2005): SJR 1.199 SNIP 2.594
Scopus rating (2004): SJR 1.412 SNIP 2.796
Scopus rating (2003): SJR 1.381 SNIP 1.83
Scopus rating (2002): SJR 1.046 SNIP 1.465
Scopus rating (2001): SJR 0.395 SNIP 1.19
Original language: English
Source: orbit
Source-ID: 288132
Publication: Research - peer-review › Journal article – Annual report year: 1989

Texture Development during Recrystallization of an Al-SiC Composite

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Hansen, N. (Intern), Liu, Y. (Intern)
Pages: 409-414
Publication date: 1989

Host publication information
Title of host publication: Materials Architecture
Place of publication: Roskilde
Publisher: Risø National Laboratory
Editors: Bilde-Sørensen, J., Hansen, N., Juul Jensen, D., Leffers, T., Lilholt, H., Pedersen, O.
ISBN (Print): 87-550-1551-4
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 288320
Publication: Research › Article in proceedings – Annual report year: 1989
Determination of Fibre Orientations in Composites with Short Fibres

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Lilholt, H. (Intern), Withers, P. (Ekstern)
Pages: 413-420
Publication date: 1988

Host publication information
Title of host publication: Mechanical and Physical Behaviour of Metallic and Ceramic Composites
Place of publication: Roskilde
Publisher: Risø National Laboratory
Editors: Andersen, S., Lilholt, H., Pedersen, O.
ISBN (Print): 87-550-1451-8
Main Research Area: Technical/natural sciences

Early-Stage Differences between the Copper-Type and the Brass-Type Texture

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Leffers, T. (Intern), Juul Jensen, D. (Intern), Major, B. (Ekstern)
Pages: 461-466
Publication date: 1988

Host publication information
Title of host publication: ICOTOM. 8. International Conference on Textures of Materials. Proceedings
Place of publication: Warrendale
Publisher: The Metallurgical Society Inc.
Editors: Kallend, J., Gottstein G.
ISBN (Print): 0-87339-035-0
Main Research Area: Technical/natural sciences
Conference: Unknown, Santa Fe, 20-25 Sep, 01/01/1987

Effect of Metallurgical Parameters on the Microstructure, Texture and Flow Stress of FCC Metals and Alloys

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern)
Pages: 279-283
Publication date: 1988

Host publication information
Title of host publication: L'Innovazione per la qualita. Innovation for Quality. 22. International Metallurgy Congress. Vol. 1
Place of publication: Milano
Publisher: Associazione Italiana di Metallurgia
Main Research Area: Technical/natural sciences
Effect of Metallurgical Parameters on the Textural Development in FCC Metals and Alloys

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Hansen, N. (Intern), Humphreys, F. (Ekstern)
Pages: 431-444
Publication date: 1988

Host publication information
Title of host publication: ICOTOM. 8. International Conference on Textures of Materials. Proceedings
Place of publication: Warrendale
Publisher: The Metallurgical Society Inc.
Editors: Kallend, J., Gottstein G.
ISBN (Print): 0-87339-035-0
Main Research Area: Technical/natural sciences
Conference: Unknown, Santa Fe, 20-25 Sep, 01/01/1987
Source: orbit
Source-ID: 287680
Publication: Research › Article in proceedings – Annual report year: 1988

Fast Texture Measurements by Neutron Diffraction Technique and Applications

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern)
Pages: 469-483
Publication date: 1988

Host publication information
Title of host publication: L'Innovazione per la qualita. Innovation for Quality. 22. International Metallurgy Congress. Vol. 1
Place of publication: Milano
Publisher: Associazione Italiana di Metallurgia
Main Research Area: Technical/natural sciences
Conference: Unknown, Bologna, 17-19 May, 01/01/1988
Source: orbit
Source-ID: 287701
Publication: Research › Article in proceedings – Annual report year: 1988

Flow Stress Anisotropy in Commercially Pure Aluminium

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 373-378
Publication date: 1988

Host publication information
Title of host publication: Strength of Metals and Alloys. ICSMA 8. Vol. 1
Place of publication: Oxford
Publisher: Pergamon Press
Editors: Kettunen, P., Lepistö, T., Lehtonen, M.
ISBN (Print): 0-08-034804-1 (set)
Series: International Series on the Strength and Fracture of Materials and Structures
Main Research Area: Technical/natural sciences
In-Situ Measurement of Phase Transformation Kinetics using Neutron Diffraction

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Damkroger, B. (Ekstern), Juul Jensen, D. (Intern), Edwards, G. (Ekstern)
Publication date: 1988
Main Research Area: Technical/natural sciences

Publication information
Journal: Scripta Metallurgica
ISSN (Print): 0036-9748
Original language: English
Source: orbit
Source-ID: 287719
Publication: Research › Journal article – Annual report year: 1988

Microstructure and Creep Strength of an Aluminium Composite with Silicon Carbide Fibres

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern), Liu, Y. (Intern)
Pages: 365-371
Publication date: 1988

Host publication information
Title of host publication: Mechanical and Physical Behaviour of Metallic and Ceramic Composites
Place of publication: Roskilde
Publisher: Risø National Laboratory
Editors: Andersen, S., Lilholt, H., Pedersen, O.
ISBN (Print): 87-550-1451-8
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 287890
Publication: Research › Article in proceedings – Annual report year: 1988

Texture and Flow Stress of Cold-drawn Aluminium Alloys

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern)
Pages: 475-480
Publication date: 1988

Host publication information
Title of host publication: Strength of Metals and Alloys. ICSMA 8. Vol. 1
Place of publication: Oxford
Publisher: Pergamon Press
Editors: Kettunen, P., Lepistö, T., Lehtonen, M.
ISBN (Print): 0-08-034804-1 (set)
Series: International Series on the Strength and Fracture of Materials and Structures
Main Research Area: Technical/natural sciences
Source: orbit
Texture and Microstructure Development during Grain Growth in Copper

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Grant, E. (Ekstem), Hansen, N. (Intern), Juul Jensen, D. (Intern), Ralph, B. (Ekstem), Stobbs, W. (Ekstem)
Pages: 711-716
Publication date: 1988

Host publication information
Title of host publication: ICOTOM. 8. International Conference on Textures of Materials. Proceedings
Place of publication: Warrendale
Publisher: The Metallurgical Society Inc.
Editors: Kallend, J., Gottstein G.
ISBN (Print): 0-87339-035-0
Main Research Area: Technical/natural sciences
Conference: Unknown, Santa Fe, 20-25 Sep, 01/01/1987
Source: orbit
Source-ID: 287694

The Early Stages of the Development of Rolling Texture in Copper and Brass

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Leffers, T. (Intern), Juul Jensen, D. (Intern)
Publication date: 1988
Main Research Area: Technical/natural sciences

Publication information
Journal:Textures and Microstructures
ISSN (Print): 0730-3300
Original language: English
Source: orbit
Source-ID: 287715
Publication: Research - peer-review › Journal article – Annual report year: 1988

Various Effects of Grain Size on F.C.C. Rolling Textures

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Leffers, T. (Intern), Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 449-454
Publication date: 1988

Host publication information
Title of host publication: ICOTOM. 8. International Conference on Textures of Materials. Proceedings
Place of publication: Warrendale
Publisher: The Metallurgical Society Inc.
Editors: Kallend, J., Gottstein G.
ISBN (Print): 0-87339-035-0
Main Research Area: Technical/natural sciences
Conference: Unknown, Santa Fe, 20-25 Sep, 01/01/1987
Source: orbit
Source-ID: 287681
Publication: Research › Article in proceedings – Annual report year: 1988
New Neutron Scattering Instruments at Risø National Laboratory: A Multipurpose Spectrometer and the SANS Facility

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 281-297
Publication date: 1987

Host publication information
Title of host publication: Research Reactor Activities in Support of National Nuclear Programmes. Proceedings
Volume: IAEA-TECDOC-409
Place of publication: Vienna
Publisher: IAEA
Main Research Area: Technical/natural sciences
Conference: Research Reactor Activities in Support of National Nuclear Programmes, Budapest, 10-13 Dec 1985 and, Copenhagen, 9-13 Sep, 01/01/1985
Source: orbit
Source-ID: 287493
Publication: Research › Article in proceedings – Annual report year: 1987

Relations between Texture and Flow Stress in Commercially Pure Aluminium

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 353-360
Publication date: 1987

Host publication information
Title of host publication: Constitutive Relations and Their Physical Basis
Place of publication: Roskilde
Publisher: Risø National Laboratory
Editors: Andersen, S., Bilde-Sørensen, J., Hansen, N., Leffers, T., Lilholt, H., Pedersen, O., Ralph, B.
ISBN (Print): 87-550-1331-7
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 287578
Publication: Research › Article in proceedings – Annual report year: 1987

The Effect of Small Particles on the Flow Stress-Strain Behaviour of Aluminium

General information
State: Published
The Evaluation of Internal Stresses in a Short Fibre Metal Matrix Composite by Neutron Diffraction

A determination of the texture of a directionally solidified sample of high-purity copper

A study making a combined use of neutron diffraction and selected-area electron channelling to determine the solidification texture in a high-purity copper sample is described. Good correlation between the techniques is shown with both demonstrating a strong [100] fibre texture in the directionally solidified rod.

A determination of the texture of a directionally solidified sample of high-purity copper

A study making a combined use of neutron diffraction and selected-area electron channelling to determine the solidification texture in a high-purity copper sample is described. Good correlation between the techniques is shown with both demonstrating a strong [100] fibre texture in the directionally solidified rod.
A Kinetic Model for the Recrystallization of Commercially Pure Aluminium
Deformation and recrystallization textures in commercially pure aluminum
The deformation and recrystallization textures of commercially pure aluminum (99.6 pct) containing large intermetallic particles (FeAl3) are measured by neutron diffraction, and the orientation distribution functions (ODF’s) are calculated. Sample parameters are the initial grain size (50 and 350 μm) and the degree of deformation (15 to 95 pct reduction in thickness by cold-rolling). The textural results are compared with microstructural observations and good correlations are found. The intermetallic particles may act as nucleation sites giving nuclei with a wide spread of orientations. Thereby the particles can have a randomizing effect on the textural development during recrystallization. In specimens deformed at medium degrees of deformation the randomizing effect of particles is maximum. At lower and higher degrees of deformation the effect of particles is less as other nucleation sites become more effective. In general, the randomizing effect of particles is limited due to a low growth rate of nuclei of random orientation compared with nuclei of other orientations.
Effect of Small Particles on Deformation and Recrystallization Textures of Aluminium

General information
State: Published
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern)
Publication date: 1986

Host publication information
Place of publication: Roskilde, Denmark
Publisher: Risø National Laboratory
Editor: Hansen, N.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 279272
Publication: Research - peer-review › Article in proceedings – Annual report year: 1986

Evaluation of the effect of initial texture on the development of deformation texture
The authors describe a computer procedure which allows them to introduce experimental initial textures as starting conditions for texture simulation (instead of a theoretical random texture). They apply the procedure on two batches of copper with weak initial textures and on fine-grained and coarse-grained aluminium with moderately strong initial textures. In copper the initial texture turns out to be too weak to have any significant effect. In aluminium the initial texture has a very significant effect on the simulated textures-similar to the effect it has on the experimental textures. However, there are differences between the simulated and the experimental aluminium textures that can only be explained as a grain-size effect. Possible future applications of the procedure are discussed

General information
State: Published
Authors: Leffers, T. (Intern), Juul Jensen, D. (Intern)
Pages: 231-254
Publication date: 1986
Main Research Area: Technical/natural sciences
Fast Texture Measurement by Neutron Diffraction using a Linear Position Sensitive Detector

General information
State: Published
Authors: Juul Jensen, D. (Intern)
Pages: 217-228
Publication date: 1986

Host publication information
Title of host publication: Experimental Techniques of Texture Analysis
Place of publication: Oberursel
Publisher: Deutsche Gesellschaft für Metallkunde
Editor: Bunge, H. J.
ISBN (Print): 3883551015
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 279279
Publication: Research - peer-review › Book chapter – Annual report year: 1986

Grain Growth in Single-Phase and Particle-Containing Materials

General information
State: Published
Organisations: Metal Structures in Four Dimensions, Materials Research Division, Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Soliman, S. E. (Ekstern), Juul Jensen, D. (Intern)
Publication date: 1986

Host publication information
Title of host publication: High Temperature Materials. Bi-National Denmark-Israel Symposium, Jerusalem, 14-15 April 1986
Place of publication: Jerusalem
Publisher: Israel Academy of Sciences and Humanities
Editor: Kaufman, A.
Main Research Area: Technical/natural sciences
Conference: Bi-National Denmark-Israel Symposium : High Temperature Material, Jerusalem, 01/01/1986
Source: orbit
Source-ID: 279273
Publication: Research - peer-review › Article in proceedings – Annual report year: 1986

Hurtig teksturmåling med neutronspredning

General information
State: Published
Authors: Juul Jensen, D. (Intern)
Pages: 135-154
Publication date: 1986

Host publication information
Måling af indre spændinger med neutondiffraktion

General information
State: Published
Authors: Leffers, T. (Intern), Juul Jensen, D. (Intern)
Pages: 239-247
Publication date: 1986

Host publication information
Title of host publication: Måling af Materialeegenskaber. Dansk Metallurgisk Selskabs Vintermøde, Risø, 6-8 Januar 1986
Place of publication: Lyngby
Publisher: Dansk Metallurgisk Selskab
Editors: Lilholt, H., Skjelsager, G.
Main Research Area: Technical/natural sciences
Conference: Dansk Metallurgisk Selskabs Vintermøde 1986, Risø, Denmark, 06/01/1986 - 06/01/1986
Source: orbit
Source-ID: 279326
Publication: Research - peer-review › Article in proceedings – Annual report year: 1986

Neutron Diffraction for the Measurement of Texture Development during Grain Growth

General information
State: Published
Organisations: Materials Research Division. Management, Materials Research Division, Risø National Laboratory for Sustainable Energy, Metal Structures in Four Dimensions
Authors: Grant, E. (Ekstern), Juul Jensen, D. (Intern), Hansen, N. (Intern), Ralph, B. (Ekstern), Stobbs, W. M. (Ekstern)
Pages: 329-336
Publication date: 1986

Host publication information
Publisher: Risø National Laboratory
ISBN (Print): 8755012507
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 279251
Publication: Research - peer-review › Article in proceedings – Annual report year: 1986

Structure and Texture Evolution during the Recrystallisation of Particle Containing Materials

General information
State: Published
Authors: Humphreys, F. J. (Ekstern), Juul Jensen, D. (Intern)
Pages: 93-106
Publication date: 1986

Host publication information
Effect of Grain Size on the Microstructure and Texture of Cold-Rolled Aluminium

**General information**
State: Published
Authors: Hansen, N. (Intern), Bay, B. (Ekstern), Juul Jensen, D. (Intern), Leffers, T. (Intern)
Pages: 317-322
Publication date: 1985

**Host publication information**
Place of publication: Oxford
Publisher: Pergamon Press
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 280168
Publication: Research - peer-review › Article in proceedings – Annual report year: 1985

Effect of Thermal Processing on the Texture and Microstructure of Aluminium

**General information**
State: Published
Organisations: Materials Research Division. Management, Materials Research Division, Risø National Laboratory for Sustainable Energy, Metal Structures in Four Dimensions
Authors: Juul Jensen, D. (Intern), Hansen, N. (Intern)
Pages: 263-268
Publication date: 1985

**Host publication information**
Volume: 1
Place of publication: Oxford
Publisher: Pergamon Press
Editor: McQueen, H. J.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 280128
Publication: Research - peer-review › Article in proceedings – Annual report year: 1985

New Neutron Scattering Instruments at Risø National Laboratory: A Multi Purpose Spectrometer and the Sans Facility

**General information**
State: Published
Texture development during recrystallization of aluminium containing large particles

The recrystallization process in heavily deformed commercially pure aluminium containing large intermetallic particles was studied by in situ neutron diffraction texture measurements and various microscopical techniques including texture measurements in local areas and simultaneous determination of size and orientation of individual grains. The formation and growth of recrystallization nuclei at the particles and in the matrix were examined by correlating the measured change in texture to the observed change in microstructure. It was found that prolific nucleation of grains having a wide spread of orientations takes place close to larger particles or clusters of particles early in the recrystallization process. The texture of fully recrystallized material, however, contains only a relatively weak random component showing that the randomisation effect of the particles was limited. This was ascribed to a slower growth of randomly oriented grains compared with those with other orientations.

General information

State: Published
Organisations: Materials Research Division. Management, Materials Research Division, Risø National Laboratory for Sustainable Energy, Metal Structures in Four Dimensions, Imperial College London
Authors: Juul Jensen, D. (Intern), Hansen, N. (Intern), Humphreys, F. J. (Ekstern)
Pages: 2155-2162
Publication date: 1985
Main Research Area: Technical/natural sciences

Publication information

Journal: ACTA METALLURGICA
Volume: 33
Issue number: 12
ISSN (Print): 0001-6160
Original language: English
DOIs:
A Quantitative Comparison between the Texture and the Microstructure Developing during Recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Hansen, N. (Intern), Juul Jensen, D. (Intern), Humphreys, F. (Ekstern)
Pages: 267-272
Publication date: 1984

Host publication information
Publisher: Danmarks Tekniske Universitet, Risø Nationallaboratoriet for Bæredygtig Energi
Editor: Andersen, N. H.
Main Research Area: Technical/natural sciences
Conference: 5th Risø International Symposium on Metallurgy and Materials Science, Risø, Denmark, 03/09/1984 - 03/09/1984
Source: orbit
Source-ID: 279986
Publication: Research › Article in proceedings – Annual report year: 1984

Calorimetric Studies of Recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Andersen, N. H. (Intern), Juul Jensen, D. (Intern)
Pages: 181-186
Publication date: 1984

Host publication information
Publisher: Danmarks Tekniske Universitet, Risø Nationallaboratoriet for Bæredygtig Energi
Editor: Andersen, N. H.
Main Research Area: Technical/natural sciences
Conference: 5th Risø International Symposium on Metallurgy and Materials Science, Risø, Denmark, 03/09/1984 - 03/09/1984
Source: orbit
Source-ID: 279906
Publication: Research › Article in proceedings – Annual report year: 1984

Correlation between Texture and Line Width in fcc. Materials with Deformation Twin Lamellae

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Leffers, T. (Intern), Juul Jensen, D. (Intern)
Pages: 805-810
Publication date: 1984

Host publication information
Title of host publication: 7. International Conference on Textures of Materials
Publisher: Netherlands Society for Material Science
Editor: Brakman, C.
Main Research Area: Technical/natural sciences
Conference: 7th International Conference on Textures of Materials, Noordwijkerhout, Netherlands, 17/09/1984 - 17/09/1984
Source: orbit
In-Situ Texture Measurements by Neutron Diffraction used in a Study of Recrystallization Kinetics

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Hansen, N. (Intern), Kjems, J. (Intern), Leffers, T. (Intern)
Pages: 325-332
Publication date: 1984

Host publication information
Title of host publication: Microstructural Characterization of Materials by Non-Microscopical Techniques: Proceedings of the 5th Risø International Symposium on Metallurgy and Materials Science
Publisher: Danmarks Tekniske Universitet, Risø Nationallaboratoriet for Bæredygtig Energi
Editor: Andersen, N. H.
Main Research Area: Technical/natural sciences
Conference: 5th Risø International Symposium on Metallurgy and Materials Science, Risø, Denmark, 03/09/1984 - 03/09/1984
Source: orbit
Source-ID: 280026
Publication: Research - peer-review › Article in proceedings – Annual report year: 1984


General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Number of pages: 605
Publication date: 1984

Publication information
Publisher: Danmarks Tekniske Universitet, Risø Nationallaboratoriet for Bæredygtig Energi
Original language: English
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 279895
Publication: Research - peer-review › Book – Annual report year: 1984

On-Line Registration of ODF Changes during Recrystallization

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Hansen, N. (Intern), Kjems, J. (Intern), Leffers, T. (Intern)
Pages: 777-782
Publication date: 1984

Host publication information
Title of host publication: Proceedings of the 7th International Conference on Textures of Materials
Publisher: Netherlands Society for Materials Science
Editor: Brakman, C.
Main Research Area: Technical/natural sciences
Conference: 7th International Conference on Textures of Materials, Noordwijkerhout, Netherlands, 17/09/1984 - 17/09/1984
Source: orbit
Source-ID: 280028
Publication: Research - peer-review › Article in proceedings – Annual report year: 1984
Small Angle Neutron Scattering Study of γ-Precipitation in NiAlTi

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Pages: 279-284
Publication date: 1984

Host publication information
Publisher: Danmarks Tekniske Universitet, Risø Nationallaboratoriet for Bæredygtig Energi
Editor: Andersen, N. H.
Main Research Area: Technical/natural sciences
Conference: 5th Risø International Symposium on Metallurgy and Materials Science, Risø, Denmark, 03/09/1984 - 03/09/1984
Source: orbit
Source-ID: 279987
Publication: Research - peer-review › Article in proceedings – Annual report year: 1984

Texture Development during Grain Growth in Pure Copper

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Grant, E. (Ekstern), Juul Jensen, D. (Intern), Ralph, B. (Ekstern), Hansen, N. (Intern)
Pages: 239-244
Publication date: 1984

Host publication information
Title of host publication: Proceedings of the International Conference on Textures of Materials
Publisher: Netherlands Society for Materials Science
Editor: Brakman, C.
Main Research Area: Technical/natural sciences
Conference: 7th International Conference on Textures of Materials, Noordwijkerhout, Netherlands, 17/09/1984 - 17/09/1984
Source: orbit
Source-ID: 279982
Publication: Research - peer-review › Article in proceedings – Annual report year: 1984

The Development of Recrystallization Textures in Aluminium Containing Large Intermetallic Particles followed by Neutron and Electron Diffraction Measurements

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Hansen, N. (Intern), Humphreys, F. (Ekstern)
Pages: 251-256
Publication date: 1984

Host publication information
Title of host publication: Proceedings of the 7th International Conference on Textures of Materials
Publisher: Netherlands Society for Materials Science
Editor: Brakman, C.
Main Research Area: Technical/natural sciences
Conference: 7th International Conference on Textures of Materials, Noordwijkerhout, Netherlands, 17/09/1984 - 17/09/1984
Source: orbit
Source-ID: 280027
Publication: Research - peer-review › Article in proceedings – Annual report year: 1984

Apparatus for Dynamical Texture Measurements by Neutron Diffraction using a Position Sensitive-Detector
Neutron Diffraction Texture Measurements as a Tool for the Investigation of Recrystallization Kinetics

General information
State: Published
Organisations: Risø National Laboratory for Sustainable Energy
Authors: Juul Jensen, D. (Intern), Hansen, N. (Intern), Kjems, J. (Intern), Leffers, T. (Intern)
Number of pages: 1,450
Pages: 1179-1191
Publication date: 1982

Host publication information
Title of host publication: Proceedings of The sixth International Conference on Textures of Materials
Volume: Vol. 2
Place of publication: Tokyo
Publisher: The Iron and Steel Institute of Japan
Editor: Nagashima, S.
Main Research Area: Technical/natural sciences
Source: orbit
Source-ID: 313454
Publication: Research › Article in proceedings – Annual report year: 1982

Projects:

Microstructure and Fatigue Properties of Railway Steels for Switches and Crossings

Department of Wind Energy
Period: 15/12/2015 → 14/12/2018
Number of participants: 3
Phd Student:
Dhar, Somrita (Intern)
Supervisor:
Juul Jensen, Dorte (Intern)
Main Supervisor:
Danielsen, Hilmar Kjartansson (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Samfinansieret - Andet
Project: PhD
Intelligent Quality Assessment of Railway Switches and Crossings

This project aims at significantly improving the safety, reliability and operational lifetime of the 3500 switches and crossings (S&Cs) in the Danish railway network. The project is a close cooperation between the Technical University of Denmark (DTU), the Danish rail infrastructure provider Rail Net Denmark and four affiliated European partners with significant expertise within this field. An inter-disciplinary scientific effort is employed to obtain enhanced rail transport reliability and regularity simultaneously with significant savings in S&Cs maintenance costs. The project results will make maintenance based on intelligent fault prediction tools, instead of the presently used regular planned inspections, and it will provide sophisticated tools to prevent hidden faults from developing to failure in the future. In a novel approach, the project will install state-of-the-art sensor technology in selected S&Cs and correlate dynamic parameters during train passage with static geometry data from conventional measurement vehicles. Monitoring of the dynamic responses will provide diagnosis of patterns that indicate when components or ballast begin to deviate from fully functional conditions. Modelling of dynamics will identify root causes to signs of degradation. Damage assessment of components identified by anomalous readings will be done by metallurgical examinations. Data and results will be processed by a holistic model that can produce Maintenance Performance Indicators (MPI) for the S&C condition. The correlation of sensor data to measuring vehicle data will allow existing data to be used reliably as input for the MPI model. It is expected that this project will enable optimisation of maintenance procedures, by which appropriate maintenance can be predicted in advance, thus avoiding unscheduled repairs and delays in the railway traffic.

Department of Wind Energy
Materials science and characterization

Department of Electrical Engineering
Automation and Control
Department of Mechanical Engineering
Solid Mechanics

Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Banedanmark

Period: 01/03/2015 → 28/02/2019
Number of participants: 14
Acronym: INTELLISWITCH
Number of related Ph.D. students: 1

Project participant:
Galeazzi, Roberto (Intern)
Blanke, Mogens (Intern)
Hansen, Søren (Intern)
Barkhordari, Pegah (Intern)
Asadzadeh, Seyed Mohammad (Intern)
Santos, Ilmar (Intern)
Tejada, Alejandro de Miguel (Intern)
Danielsen, Hilmar Kjartansson (Intern)
Dhar, Somrita (Intern)
Ersbøll, Bjarne Kjaer (Intern)
Kulahci, Murat (Intern)
Thyregod, Camilla (Intern)
Hovad, Emil (Intern)

Project Manager, academic:
Juul Jensen, Dorte (Intern)

Financing sources
Source: Public research council
Name of research programme: Innovationsfonden
Web address: http://innovationsfonden.dk/da
Amount: 12,700,000.00 Danish Kroner
Year of approval: 2014
Project
Intelligent Quality Assessment of Railway Switches and Crossings (INTELLISWITCH)

Department of Electrical Engineering
Department of Mechanical Engineering
Department of Applied Mathematics and Computer Science
Statistics and Data Analysis
Department of Wind Energy

Materials science and characterization

Banedanmark
Period: 01/03/2015 → 31/12/2019
Number of participants: 3
Project participant:
Thyregod, Camilla (Intern)
Ersbøll, Bjarne Kjær (Intern)

Project Manager, organisational:
Juul Jensen, Dorte (Intern)

Financing sources
Source: Public research council
Name of research programme: Innovation Fund Denmark
Amount: 12.70 Danish Kroner

Nucleation of recrystallization at selected sites in deformed fcc metals

Department of Wind Energy
Period: 01/01/2014 → 20/04/2017
Number of participants: 7
PhD Student:
Xu, Chaoling (Ekstern)
Supervisor:
Wu, Guilin (Ekstern)
Zhang, Yubin (Intern)
Main Supervisor:
Juul Jensen, Dorte (Intern)
Examiner:
Huang, Xiaoxu (Intern)
Quey, Romain (Ekstern)
Zhang, Hongwang (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: Stipendie fra udlandet
Project: PhD

Statistical characterization of metal microstructures

Department of Wind Energy
Period: 01/09/2013 → 09/12/2016
Number of participants: 6
PhD Student:
Sun, Jun (Intern)
Supervisor:
Zhang, Yubin (Intern)
Main Supervisor:
Juul Jensen, Dorte (Intern)
Examiner:
Faester, Søren (Intern)
Lauridsen, Erik Mejdal (Intern)
Moelans, Nele (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden

Relations
Publications:
Quantitative Characterization of Boundary Roughness in Metals
Project: PhD

Thermomechanical modelling of casting large wind turbine parts
Department of Mechanical Engineering
Period: 01/09/2013 → 07/12/2017
Number of participants: 7
Phd Student:
Bjerre, Mathias Karsten (Intern)
Supervisor:
Thorborg, Jesper (Intern)
Tiedje, Niels Skat (Intern)
Main Supervisor:
Hattel, Jesper Henri (Intern)
Examiner:
Juul Jensen, Dorte (Intern)
Lacaze, Jacques (Ekstern)
Sándor Diószegi, Attila (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: 1/3 FUU, 1/3 inst 1/3 Andet
Project: PhD

Electromechanical Drivetrain Simulation
Department of Wind Energy
Period: 15/03/2012 → 24/08/2015
Number of participants: 8
Phd Student:
Gallego Calderon, Juan Felipe (Intern)
Supervisor:
Branner, Kim (Intern)
Hansen, John Michael (Intern)
Cutululis, Nicolaos Antonio (Intern)
Main Supervisor:
Natarajan, Anand (Intern)
Examiner:
Juul Jensen, Dorte (Intern)
Bottasso, Carlo L. (Ekstern)
Muljadi, Eduard (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Project: PhD

Thermal Stability of Tungsten
Department of Mechanical Engineering
Period: 15/12/2011 → 24/09/2015
Number of participants: 7
Phd Student:
Alfonso Lopez, Angel (Intern)
Supervisor:
Juul Jensen, Dorte (Intern)
Luo, Guanganan (Ekstern)
Main Supervisor:
Pantleon, Wolfgang (Intern)
Examiner:
Huang, Xiaoxu (Intern)
Godfrey, Andrew William (Intern)
Zöllner, Dana (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: Programbevilling
Project: PhD

Kinetics of coarsening during annealing
Department of Wind Energy
Period: 01/12/2009 → 24/04/2013
Number of participants: 6
Phd Student:
Lin, Fengxiang (Intern)
Supervisor:
Pantleon, Wolfgang (Intern)
Main Supervisor:
Juul Jensen, Dorte (Intern)
Examiner:
Huang, Xiaoxu (Intern)
Delannay, Laurent (Ekstern)
Rollett, Anthony David (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Development of long cube textured metal substrates suitable for reel-to-reel processing and applications under both ac and dc conditions
Department of Energy Conversion and Storage
Period: 01/09/2009 → 28/01/2013
Number of participants: 7
Phd Student:
Wulff, Anders Christian (Intern)
Supervisor:
Andersen, Niels Hessel (Intern)
Mishin, Oleg (Intern)
Main Supervisor:
Grivel, Jean-Claude (Intern)
Examiner:
Juul Jensen, Dorte (Intern)
Glowacki, Bartek A. (Ekstern)
Holzapfel, Bernhard (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: Forskningsrådsfinansiering
Structural and textural control in high strength dual phase steels

Department of Wind Energy
Period: 01/09/2009 → 24/04/2013
Number of participants: 6
Phd Student:
Azuma, Masafumi (Intern)
Supervisor:
Winther, Grethe (Intern)
Main Supervisor:
Huang, Xiaoxu (Intern)
Examiner:
Juul Jensen, Dorte (Intern)
Furuhara, Tadashi (Ekstern)
Withers, Philip John (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: Eksternt finansieret virksomhed
Project: PhD

3D Studies of Coarsening Kinetics of Individual Grains

Department of Energy Conversion and Storage
Period: 01/09/2008 → 29/03/2012
Number of participants: 6
Phd Student:
Poulsen, Stefan Othmar (Intern)
Supervisor:
Juul Jensen, Dorte (Intern)
Main Supervisor:
Lauridsen, Erik Mejdal (Intern)
Examiner:
Poulsen, Henning Friis (Intern)
Moelans, Nele (Ekstern)
Rollett, Anthony David (Ekstern)

Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Synchrotron studies and modelling of the dynamics of dislocation structures

Risø National Laboratory for Sustainable Energy
Period: 01/03/2008 → 31/08/2011
Number of participants: 6
Phd Student:
Wejdemann, Christian (Intern)
Supervisor:
Poulsen, Henning Friis (Intern)
Main Supervisor:
Pantleon, Wolfgang (Intern)
Examiner:
Juul Jensen, Dorte (Intern)
Bouvier, Salima (Ekstern)
Ungár, Tamás (Ekstern)
Financing sources
Source: Internal funding (public)
Name of research programme: Grundforskningsfonden
Project: PhD

Fysisk metallurgi/digital billedbehandling
Administration
Period: 01/05/1991 → 16/09/1994
Number of participants: 3
Phd Student:
Lassen, Niels Christian Krieger (Intern)
Supervisor:
Juul Jensen, Dorte (Intern)
Main Supervisor:
Conradsen, Knut (Intern)

Financing sources
Source: Internal funding (public)
Name of research programme: Gammel ordning u/skema-SU
Project: PhD