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Research outputs:

Lift Factor Analysis of Multifilamentary Coated Conductor Produced Using Two Level Undercut-Profile Substrates
Research output: Research - peer-review › Journal article – Annual report year: 2019

Comparison of Levelized Cost of Energy of superconducting direct drive generators for a 10 MW offshore wind turbine
Research output: Research - peer-review › Journal article – Annual report year: 2018

Decomposing the Bragg glass and the peak effect in a Type-II superconductor
Research output: Research - peer-review › Journal article – Annual report year: 2018

Fabrication of a Scaled MgB2 Racetrack Demonstrator Pole for a 10-MW Direct-Drive Wind Turbine Generator
Research output: Research - peer-review › Journal article – Annual report year: 2018

Influence of system level parameters on the Fatigue life of jacket substructure fro 10 MW and 20 MW Wind Turbines
Research output: Research - peer-review › Article in proceedings – Annual report year: 2018

Influence of system level parameters on the fatigue life of jacket substructures for 10 MW and 20 MW wind turbines
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2018

Magnetoelastic phase diagram of TbNi2B2C
Research output: Research - peer-review › Journal article – Annual report year: 2018

Optimal design of cathodic protection systems for offshore wind turbine support structures
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2018

Optimal design of galvanic corrosion protection systems for offshore wind turbine support structures
Research output: Research - peer-review › Journal article – Annual report year: 2018

Two level undercut-profile substrate-based filamentary coated conductors produced using metal organic chemical vapor deposition
Research output: Research - peer-review › Journal article – Annual report year: 2018

Effects of Armature Winding Segmentation with Multiple Converters on the Short Circuit Torque of 10-MW Superconducting Wind Turbine Generators
Research output: Research - peer-review › Journal article – Annual report year: 2016
Hydrogen Decrepitation Press-Less Process Recycling of NdFeB sintered magnets
Research output: Research - peer-review › Journal article – Annual report year: 2017

Optimization and comparison of superconducting generator topologies for a 10 MW wind turbine application
Research output: Research - peer-review › Conference article – Annual report year: 2017

Potential of Partially Superconducting Generators for Large Direct-Drive Wind Turbines
Research output: Research - peer-review › Journal article – Annual report year: 2017

The Effect of Nano-TiC Addition on Sintered Nd-Fe-B Permanent Magnets
Research output: Research - peer-review › Journal article – Annual report year: 2016

The influence of carbon and oxygen on the magnetic characteristics of press-less sintered NdFeB magnets
Research output: Research - peer-review › Journal article – Annual report year: 2016

Topology Comparison of Superconducting Generators for 10-MW Direct-Drive Wind Turbines: Cost of Energy Based
Research output: Research - peer-review › Journal article – Annual report year: 2017

Comparison of superconducting generators and permanent magnet generators for 10-MW direct-drive wind turbines
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

Long-term research challenges in wind energy – a research agenda by the European Academy of Wind Energy
Research output: Research - peer-review › Journal article – Annual report year: 2016

New direct drive technologies of INNWIND.EU: Superconducting vs. Pseudo Direct Drive
Research output: Research › Sound/Visual production (digital) – Annual report year: 2016

Ripple Field AC Losses in 10-MW Wind Turbine Generators With a MgB2 Superconducting Field Winding
Research output: Research - peer-review › Journal article – Annual report year: 2016

Variation of Extreme and Fatigue Design Loads on the Main Bearing of a Front Mounted Direct Drive System
Research output: Research - peer-review › Conference article – Annual report year: 2016

Wind generator projects based on MgB2 superconductors
Research output: Research - peer-review › Book chapter – Annual report year: 2016

Comparison of 10 MW superconducting generator topologies for direct-drive wind turbines
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Design Aspects on Winding of an MgB2 Superconducting Generator Coil
Research output: Research - peer-review › Conference article – Annual report year: 2015

Effects of an electromagnetic shield and armature teeth on the short-circuit performance of a direct drive superconducting generator for 10 MW wind turbines
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Potential of MgB2 superconductors in direct drive generators for wind turbines
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015
Potential of MgB$_2$ superconductors on direct drive generators for wind turbines
Research output: Research > Sound/Visual production (digital) – Annual report year: 2015

Trends in energy supply integration: Wind power
Research output: Research > Book chapter – Annual report year: 2015

Two level undercut-profile substrate for filamentary YBa$_2$Cu$_4$O$_7$ coated conductors: Fast Track Communication
Research output: Research > Journal article – Annual report year: 2015

Design of an MgB$_2$ race track coil for a wind generator pole demonstration
Research output: Research > Conference article – Annual report year: 2014

Design study of a 10 MW MgB$_2$ superconductor direct drive wind turbine generator
Research output: Research > Article in proceedings – Annual report year: 2014

Design study of a 10 MW MgB$_2$ superconductor direct drive wind turbine generator
Research output: Research > Poster – Annual report year: 2014

Emerging wind energy technologies
Research output: Research > Book chapter – Annual report year: 2014

Hysteresis losses in MgB$_2$ superconductors exposed to combinations of low AC and high DC magnetic fields and transport currents
Research output: Research > Journal article – Annual report year: 2014

Superconducting wind turbine generators

Calculation of alternating current losses in stacks and coils made of second generation high temperature superconducting tapes for large scale applications
Research output: Research > Journal article – Annual report year: 2013

Development of superconducting wind turbine generators
Research output: Research > Journal article – Annual report year: 2014

Rare materials - can we compete for them on the global market?
Research output: Research > Report chapter – Annual report year: 2013

Reducing Conductor Usage in Superconducting Machines by Multiple Power Supplies
Research output: Research > Journal article – Annual report year: 2013

Superconducting direct drive generators for large offshore wind turbines
Research output: Research > Sound/Visual production (digital) – Annual report year: 2013

Superleder tapes karakteriseret fra nanometer pinning til meter store spoler
Research output: Research > Sound/Visual production (digital) – Annual report year: 2013

Trends in Wind Turbine Generator Systems
Research output: Research > Journal article – Annual report year: 2013
Advantages and Challenges of Superconducting Wind Turbine Generators
Research output: Research - peer-review › Sound/Visual production (digital) – Annual report year: 2012

An HTS machine laboratory prototype
Research output: Research - peer-review › Journal article – Annual report year: 2012

Calculation of AC losses in HTS stacks and coils for large scale applications
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

Calculation of AC losses in large HTS stacks and coils
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Comparison of MgB2 and Coated Conductor Based 5 MW Superconducting Wind Turbine Generator
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

Critical current density measurement of thin films by AC susceptibility based on the penetration parameter h
Research output: Research - peer-review › Journal article – Annual report year: 2012

Design study of coated conductor direct drive wind turbine generator for small scale demonstration
Research output: Research - peer-review › Journal article – Annual report year: 2012

Development of Superconducting Wind Turbine Generators
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

In-Situ Synchrotron X-ray Study of the Phase and Texture Evolution of Ceria and Superconductor Films Deposited by Chemical Solution Method
Research output: Research - peer-review › Conference article – Annual report year: 2012

Large superconducting wind turbine generators
Research output: Research - peer-review › Journal article – Annual report year: 2012

Large superconducting wind turbine generators: Driving the cost down?
Research output: Research › Conference abstract for conference – Annual report year: 2012

Measurement of AC losses in a racetrack superconducting coil made from YBCO coated conductor
Research output: Research - peer-review › Conference article – Annual report year: 2012

Model and Simulation of a HTS Generator under transient response
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2012

Simulation of an HTS Synchronous Superconducting Generator
Research output: Research - peer-review › Journal article – Annual report year: 2012

Superconducting Direct Drive Wind Turbine Generators: Advantages and Challenges
Research output: Research - peer-review › Book chapter – Annual report year: 2012

AC Losses in Bi2Sr2Ca2Cu3O10+x Tapes and a 3.15-m-Long Single-Phase Cable
Research output: Research - peer-review › Journal article – Annual report year: 2011

A Course on Applied Superconductivity Shared by Four Departments
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011
Active materials for future wind turbine generators: From Copper to R2Fe14B and RBa2Cu3O6+x?
Research output: Research › Sound/Visual production (digital) – Annual report year: 2011

Coil Optimization for High Temperature Superconductor Machines
Research output: Research - peer-review › Journal article – Annual report year: 2011

Feasibility study of 5MW superconducting wind turbine generator
Research output: Research - peer-review › Journal article – Annual report year: 2011

High Temperature Superconducting (HTS) technology for wind generators
Research output: Research › Sound/Visual production (digital) – Annual report year: 2011

High Temperature Superconductor Machine Prototype
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

HTS machine laboratory prototype
Research output: Research › Sound/Visual production (digital) – Annual report year: 2011

Influence of Rare Earth Element Supply on Future Offshore Wind Turbine Generators
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

In-situ synchrotron x-ray study of the crystallization behavior of Ce0.9La0.1O2−x thin films deposited on NiW alloy substrates by chemical solution method
Research output: Research - peer-review › Journal article – Annual report year: 2011

Minimising the Usage of Superconducting Tape In Electrical Machine Applications
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2012

Modelling, Construction, and Testing of a Simple HTS Machine Demonstrator
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

Preparation of a Novel Ce0.9La0.1O2/Gd2Zr2O7 Buffer Layer Stack on NiW Alloy Substrates by the MOD Route
Research output: Research - peer-review › Journal article – Annual report year: 2011

Simulation of an HTS Synchronous Superconducting Generator
Research output: Research › Sound/Visual production (digital) – Annual report year: 2011

Superconducting generators for direct drive wind turbines
Research output: Research › Sound/Visual production (digital) – Annual report year: 2011

Superconducting Machines at the Technical University of Denmark
Research output: Research › Conference abstract in proceedings – Annual report year: 2011

Towards Faster FEM Simulation of Thin Film Superconductors: A Multiscale Approach
Research output: Research - peer-review › Journal article – Annual report year: 2011

AC loss in superconducting wires operating in a wind turbine like generator
Research output: Research - peer-review › Conference article – Annual report year: 2010
Anisotropy of the critical current in MgB$_2$ tapes made of high energy milled precursor powder
Research output: Research - peer-review › Journal article – Annual report year: 2010

Coil Optimization for HTS Machines
Research output: Research - peer-review › Poster – Annual report year: 2010

High energy synchrotron X-ray diffraction studies of lithium batteries
Research output: Research › Poster – Annual report year: 2010

Influence of the initial Bi2223 phase content on microstructure development in Bi2223/Ag tapes
Research output: Research - peer-review › Conference article – Annual report year: 2010

Multi-Pole HTS Generators for Direct Drive Wind Turbines
Research output: Research › Conference abstract for conference – Annual report year: 2010

Superconducting Generator for Wind Turbines – Possible Nacelle Mass Reductions for Direct Drive Offshore Turbines
Research output: Research › Conference abstract in proceedings – Annual report year: 2010

Superconducting generators for wind turbines: design considerations
Research output: Research - peer-review › Conference article – Annual report year: 2010

Superconducting wind turbine generators
Research output: Research - peer-review › Journal article – Annual report year: 2010

Superconducting wind turbine generators
Research output: Research › Conference abstract for conference – Annual report year: 2010

Superconducting wind turbines
Research output: Research › Conference abstract for conference – Annual report year: 2010

Texture induced anisotropy of critical current of MgB$_2$/Fe rolled superconducting tapes studied by synchrotron x-ray diffraction
Research output: Research › Poster – Annual report year: 2010

Towards faster FEM simulation of thin film superconductors
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Defining B-c, B* and B-phi for YBCO Thin Films
Research output: Research - peer-review › Journal article – Annual report year: 2009

Design study of 10 kW superconducting generator for wind turbine applications
Research output: Research - peer-review › Journal article – Annual report year: 2009

Fast 2D Simulation of Superconductors: a Multiscale Approach
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Fermi Surface and Order Parameter Driven Vortex Lattice Structure Transitions in Twin-Free YBa2Cu3O7
Research output: Research - peer-review › Journal article – Annual report year: 2009

Modeling flux pinning in thin undoped and BazRo3-doped YBCO films
Research output: Research - peer-review › Journal article – Annual report year: 2009
Structure and degeneracy of vortex lattice domains in pure superconducting niobium: A small-angle neutron scattering study
Research output: Research › peer-review › Journal article – Annual report year: 2009

Superconducting generators for wind turbines
Research output: Research › peer-review › Article in proceedings – Annual report year: 2009

Avoided crossing of rattler modes in thermoelectric materials
Research output: Research › peer-review › Journal article – Annual report year: 2008

Design study of superconducting 10 kW demonstration generator for wind turbine applications
Research output: Research › peer-review › Article in proceedings – Annual report year: 2008

Effects of Cu or Ag additions on the kinetics of MgB₂ phase formation in Fe-sheated wires
Research output: Research › peer-review › Journal article – Annual report year: 2008

FEM: a tool for designing a superconducting generator for a wind turbine
Research output: Research › Article in proceedings – Annual report year: 2008

In-situ synchrotron X-ray study of MgB₂ formation when doped by SiC
Research output: Research › peer-review › Conference article – Annual report year: 2008

Manufacture of (Bi,Pb)₂Sr₂Ca₂Cu₃O₁₀-based tapes with a composite sheath
Research output: Research › peer-review › Conference article – Annual report year: 2008

Superconductor based energy production
Research output: Research › Article in proceedings – Annual report year: 2008

Synchrotron radiation: A powerful tool for probing superconducting/metal composite wires and tapes
Research output: Research › peer-review › Article in proceedings – Annual report year: 2008

Uncovering flux line correlations in superconductors by reverse monte carlo refinement of neutron scattering data
Research output: Research › peer-review › Journal article – Annual report year: 2008

Kinetics of MgB₂ formation studied by in-situ synchrotron X-ray powder diffraction
Research output: Research › peer-review › Journal article – Annual report year: 2007

Kvantetornadoer i superledere studeret med neutroner
Research output: Communication › Journal article – Annual report year: 2007

Pauli paramagnetic effects on vortices in superconducting TmNi₂B₂C
Research output: Research › peer-review › Journal article – Annual report year: 2007

Pauli paramagnetic effects on vortices in superconducting TmNi₂B₂C
Research output: Research › Conference abstract for conference – Annual report year: 2007

The phase diagram of YBCo nano-particles
Research output: Research › Conference abstract for conference – Annual report year: 2007
Magnetic phase diagram of ErNi$_2$B$_2$C
Research output: Research - peer-review › Conference article – Annual report year: 2004

Neutron diffraction and theoretical model studies of the field induced magnetic phases of the ErNi$_2$B$_2$C superconductor
Research output: Research - peer-review › Book chapter – Annual report year: 2004

Neutron diffraction study of anomalous high-field magnetic phases in TmNi$_2$B$_2$C
Research output: Research - peer-review › Journal article – Annual report year: 2004

Superconducting properties of Zn and Al double-doped Mg$_1-x$(Zn$_{0.5}$Al$_{0.5}$)$_x$B$_2$
Research output: Research - peer-review › Journal article – Annual report year: 2004

Influence of magnetism on flux line lattice in TmNi$_2$B$_2$C superconductor
Research output: Research › Conference abstract in proceedings – Annual report year: 2003

Possible magnetism in vortex cores of superconducting TmNi$_2$B$_2$C studied by small angle neutron scattering
Research output: Research › Ph.D. thesis – Annual report year: 2003

Structure and superconductivity of double-doped Mg$_{1-x}$(Al$_{0.5}$Li$_{0.5}$)$_x$B$_2$
Research output: Research - peer-review › Journal article – Annual report year: 2003

Structure and transport properties of double doped Mg$_{1-x}$(Al$_{0.5}$Li$_{0.5}$)$_x$B$_2$ (poster)
Research output: Research › Conference abstract in proceedings – Annual report year: 2003

The magnetic state of ErNi$_2$B$_2$C in an in-plane field
Research output: Research › Conference abstract in proceedings – Annual report year: 2003

Flux line lattice symmetries in the borocarbide superconductor LuNi$_2$B$_2$C
Research output: Research › Conference article – Annual report year: 2002

Microstructural dynamics of Bi-2223/Ag tapes annealed in 8% O$_2$
Research output: Research - peer-review › Journal article – Annual report year: 2002

Neutron scattering studies of the ErNi$_2$B$_2$C magnetic phase diagram (poster)
Research output: Research › Conference abstract in proceedings – Annual report year: 2002

Strong interaction between magnetism and superconductivity in ErNi$_2$B$_2$C
Research output: Research › Conference abstract in proceedings – Annual report year: 2002

Flux line lattice reorientation in the borocarbide superconductors with H$_{||}$ parallel to a$_{||}$
Research output: Research - peer-review › Journal article – Annual report year: 2001

Neutron scattering studies of the flux line lattice and magnetic ordering in TmNi$_2$B$_2$C
Research output: Research › Article in proceedings – Annual report year: 2001

Relation between texture and critical current density of textured YBa$_2$Cu$_3$O$_x$ plates
Research output: Research - peer-review › Journal article – Annual report year: 2001

Strong interaction between superconductivity and magnetism in ErNi$_2$B$_2$C
Research output: Research › Conference abstract for conference – Annual report year: 2001
Superconducting bearings for flywheel applications
Research output: Research › peer-review › Report – Annual report year: 2001

Temperature dependence of hexagonal to square flux line lattice symmetry transition in LuNi$_2$B$_2$C superconductor
Research output: Research › Conference abstract in proceedings – Annual report year: 2001

Temperature dependence of the flux line lattice transition into square symmetry in superconducting LuNi$_2$B$_2$C
Research output: Research › peer-review › Journal article – Annual report year: 2001

Critical current in high-$\alpha T_C$ superconducting BiSCCO-tapes in Ag-clad
Research output: Research › Conference abstract in proceedings – Annual report year: 2000

Morphology of flux line lattice in the borocarbide superconductors
Research output: Research › Conference abstract for conference – Annual report year: 2000

Oxygen-ordering superstructures in NdBa$_2$Cu$_3$O$_6.5$ single crystals investigated by hard-X-ray diffraction
Research output: Research › peer-review › Journal article – Annual report year: 2000

Flux line lattice reorientation in TmNi$_2$B$_2$C studied by Bitter decoration
Research output: Research › Conference abstract for conference – Annual report year: 1999

Flux line lattice symmetries in the borocarbide superconductors
Research output: Research › Conference abstract for conference – Annual report year: 1999

In situ study of equilibrium phenomena and kinetics in a BiSCCO Ag tape
Research output: Research › Journal article – Annual report year: 1999

Temperature dependence of the flux line lattice hexagonal to square symmetry transition in LuNi$_2$B$_2$C: A crossover from London to Ginzburg-Landau behaviour
Research output: Research › Conference abstract for conference – Annual report year: 1999

Temperature dependence of the flux line lattice square to hexagonal symmetry transition in LuNi$_2$B$_2$C: A crossover from London to Ginzburg-Landau behaviour
Research output: Research › Conference abstract in proceedings – Annual report year: 1999

In-situ synchrotron studies of the annealing behaviour of high Tc BSCCO/Ag-tapes
Research output: Research › Conference abstract in proceedings – Annual report year: 1998

Intertwined symmetry of the magnetic modulation and the flux-line lattice in the superconducting state of TmNi$_2$B$_2$C
Research output: Research › peer-review › Journal article – Annual report year: 1998

Annealing of Ag-clad BiSCCO tapes studied in-situ by high-energy synchrotron x-ray
Research output: Research › Article in proceedings – Annual report year: 1997

In-situ synchrotron x-ray diffraction on BiSCCO-tapes during annealing
Research output: Research › Conference abstract for conference – Annual report year: 1996

Projects:

Positioning of Danish offshore wind farms until 2030 – using Levelized Cost of Energy (LCoE)
Project: Research › Dissertation project
Superconducting thin-film neutron detector  
Project: Research

Lindebjergskolens CO2 fodaftryk  
Project: Research

Vind i ROSkilde  
Project: Research

Design af bæredygtige energisystemer i Grønland  
Project: PhD

Magnetfeltsegenskaber af superledere  
Project: PhD

Superconducting Wind Turbine Generators  
Project: PhD

Funktionelle superledende og magnetiske materialer til energianvendelser  
Project: PhD

Manufacture of 2nd generation high-temperature superconducting tapes with a green processing technology  
Project: PhD

Direct drive High Temperature Superconducting generators for wind turbine  
Project: PhD

Investigating the Feasibility of Direct Drive Wind Turbine Generator Topologies that are Independent of Rare Earth Elements  
Project: PhD

Modelling environmentally friendly materials for magnetic refrigeration  
Project: PhD

Innovative wind conversion systems (10-20MW) for offshore applications  
Project: Research

Activities:

12th World Congress of Structural and Multidisciplinary Optimization  
Activity: Attending an event › Participating in or organising a conference

Wind Energy Denmark  
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Workshop: Current and future generator-converter systems  
Activity: Attending an event › Participating in or organising workshops, courses, seminars etc.

Superconductor based fusion energy  
Activity: Talks and presentations › Conference presentations
Feasibility of 5MW superconducting wind turbine generator
Activity: Talks and presentations › Conference presentations

Superconducting wind turbines
Activity: Talks and presentations › Conference presentations

Superconducting generators for wind turbines
Activity: Talks and presentations › Conference presentations

Cutting-edge clean-tech and energy technologies in Denmark: Superledning
Activity: Talks and presentations › Conference presentations

Press clippings:

The Troubled Quest for the Superconducting Wind Turbine
Press/Media: Press / Media

Drømmen får vinger
Press/Media: Press / Media

Forskere foreslår plads til vindmøler i Roskilde
Press/Media: Press / Media

Skype dialog på web-tv – Grøn omstilling: Panel diskusstion af den grønne omstilling med spørgsmål fra gymnasie elever
Press/Media: Press / Media

Superconductors to boost wind power
Press/Media: Press / Media

Ice-cold physics
Press/Media: Press / Media