Hans Nørgaard Hansen - DTU Orbit (17/02/2019)
Hansen, Hans Nørgaard
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Department of Mechanical Engineering - Head of Department, Professor, PhD

Research outputs:

A 5D DoF Parallel Kinematic Controller For Big Area Additive Manufacturing
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2018

A Beam Modulator and Galvanometer Controller for Metal Powder Bed Fusion
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2018

Accurate measurements in a production environment using dynamic length metrology (DLM)
Research output: Research - peer-review › Conference article – Annual report year: 2018

Additive Manufacturing of Mould Inserts with Mirror-like Surfaces
Research output: Research - peer-review › Conference article – Annual report year: 2018

Assessment of sub-mm features replication capability in injection moulding using a multi-cavity tool produced by additive manufacturing
Research output: Research - peer-review › Poster – Annual report year: 2018

Comparison of selected processes for surface microstructuring of complex mould for an implanted device
Research output: Research - peer-review › Journal article – Annual report year: 2018

Design for manufacturability of macro and micro products: a case study of heat exchanger design
Research output: Research - peer-review › Journal article – Annual report year: 2018

Effect of process parameters on flow length and flash formation in injection moulding of high aspect ratio polymeric micro features
Research output: Research - peer-review › Journal article – Annual report year: 2018

Evaluation of part consistency with photopolymer inserts in different injection moulding process parameters
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2018
**Applications of Fiber-Reinforced Polymers in Additive Manufacturing**
Research output: Research - peer-review › Journal article – Annual report year: 2017

**Challenges and opportunities of fibre-reinforced polymers in additive manufacturing with focus on industrial applications**
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

**Characterization of smearing patterns in ball nose end milling process**
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017

**Department of Mechanical Engineering - Annual Report 2016**
Research output: Communication › Report – Annual report year: 2017

**Dimensional accuracy of Acrylonitrile Butadiene Styrene injection molded parts produced in a pilot produc**
Research output: Research - peer-review › Paper – Annual report year: 2017

**Direct electroplating of plastic for advanced electrical applications**
Research output: Research - peer-review › Journal article – Annual report year: 2017

**Economic trade-offs of additive manufacturing integration in injection moulding process chain**
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

**Effect of TWD estimation error on the depth of machined cavities in micro-EDM milling**
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017

**Effects of carbon fibres on the life cycle assessment of additively manufactured injection moulding inserts for rapid prototyping**
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

**Effects of fast mold temperature evolution on micro features replication quality during injection molding**
Research output: Research - peer-review › Journal article – Annual report year: 2018

**Influence of Injection-Molding Process Parameters on Part Replication of Microstructures with Additively-Manufactured Soft Tooling Inserts WCMNM 2017 No.**
Research output: Research - peer-review › Paper – Annual report year: 2017

**Injection and injection-compression moulding replication capability for the production of polymer lab-on-a-chip with nano structures**
Calaon, M., Tosello, G., Garnaes, J. & Hansen, H. N. 2017 In : Journal of Micromechanics and Microengineering. 27, 10, 10 p., 105001
Research output: Research - peer-review › Journal article – Annual report year: 2017

Injection Moulding Pilot Production: Performance Assessment of Tooling Process Chains Based on Tool Inserts Made from Brass and A 3d Printed Photopolymer
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

Inner centering in parting line area of injection mould using side locks
Mahshid, R. & Hansen, H. N. 2017 Proceedings of the 17th International Conference of the European Society for Precision Engineering and Nanotechnology. The European Society for Precision Engineering and Nanotechnology, 2 p.
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

Integration of Fiber-Reinforced Polymers in a Life Cycle Assessment of Injection Molding Process Chains with Additive Manufacturing
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

Investigation of process parameters influence on flash formation in injection moulding of polymer micro features through design of experiments
Research output: Research - peer-review › Poster – Annual report year: 2017

Large scale additive manufacturing of thermosetting material
Research output: Research - peer-review › Article in proceedings – Annual report year: 2018

Life Cycle Assessment of Fiber-Reinforced Additive Manufacturing for Injection Molding Insert Production
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2017

Measurement noise of a point autofocus surface topography instrument
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017

Modeling of the effect of tool wear per discharge estimation error on the depth of machined cavities in micro-EDM milling
Research output: Research - peer-review › Journal article – Annual report year: 2017

Nanomanufacturing-Perspective and applications
Research output: Research - peer-review › Journal article – Annual report year: 2017

Performance Simulation and Verification of Vat Photopolymerization Based, Additively Manufactured Injection Molding Inserts with Micro-Features
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017
Replication assessment of surface texture at sub-micrometre scale
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

Replication quality assessment and uncertainty evaluation of a polymer precision injection moulded component
Baruffi, F., Calaon, M., Tosello, G., Hansen, H. N., Prantl, M. & Miller, N. 2017 Proceedings of the 17th International Conference of the European Society for Precision Engineering and Nanotechnology. The European Society for Precision Engineering and Nanotechnology, p. 495-496
Research output: Research - peer-review › Article in proceedings – Annual report year: 2017

Replication quality assessment and uncertainty evaluation of a polymer precision injection moulded component
Research output: Research - peer-review › Poster – Annual report year: 2017

Rheology of high melt strength polypropylene for additive manufacturing
Research output: Research - peer-review › Journal article – Annual report year: 2017

State-of-the-art of fiber-reinforced polymers in additive manufacturing technologies
Research output: Research - peer-review › Journal article – Annual report year: 2017

Thermal modelling of extrusion based additive manufacturing of composite materials
Research output: Research - peer-review › Paper – Annual report year: 2017

Tolerances in micro manufacturing
Research output: Research - peer-review › Paper – Annual report year: 2017

Accuracy assessment of an industrial actuator
Research output: Research - peer-review › Conference article – Annual report year: 2016

Adaptive Layer Height During DLP Materials Processing
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

A Model of Parallel Kinematics for Machine Calibration
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

An international comparison of surface texture parameters quantification on polymer artefacts using optical instruments
Tosello, G., Haitjema, H., Leach, R. K., Quagliotti, D., Gasparin, S. & Hansen, H. N. 2016 In : C I R P Annals. 65, 1, p. 529-532
Research output: Research - peer-review › Journal article – Annual report year: 2016
A self-calibrating robot based upon a virtual machine model of parallel kinematics
Research output: Research - peer-review › Journal article – Annual report year: 2016

A Self-Peeling Vat for Improved Release Capabilities During DLP Materials Processing
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

A simulation of the effect of TWD (tool wear per discharge) estimation error on the depth of machined surfaces in micro-EDM milling
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2016

A systematic approach applied in design of a micro heat exchanger
Research output: Research - peer-review › Journal article – Annual report year: 2015

Calibration of a Numerical Model for Heat Transfer and Fluid Flow in an Extruder
Research output: Research - peer-review › Journal article – Annual report year: 2015

Comparison of conventional Injection Mould Inserts to Additively Manufactured Inserts using Life Cycle Assessment
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Comparison of cutting edge characterization techniques applied to industrial tools with sub micrometer edge radius
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2016

Comparison of measurements from optical CMM and focus-variation microscope of a μPIM mechanical part
Research output: Research - peer-review › Poster – Annual report year: 2016

Correction of systematic behaviour in topographical surface analysis
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Distribution and Orientation of Carbon Fibers in Polylactic Acid Parts Produced by Fused Deposition Modeling
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016
Dynamic Length Metrology (DLM) for measurements with sub-micrometre uncertainty in a production environment
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Evolution of Surface Texture and Cracks During Injection Molding of Fiber-Reinforced, Additively-Manufactured, Injection Molding Inserts
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Experimental Investigation of Comparative Process Capabilities of Metal and Ceramic Injection Molding for Precision Applications
Research output: Research - peer-review › Journal article – Annual report year: 2016

Fast Mold Temperature Evolution on Micro Features Replication Quality during Injection Molding
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Gate Design in Injection Molding of Microfluidic Components Using Process Simulations
Research output: Research - peer-review › Journal article – Annual report year: 2016

High accuracy and precision micro injection moulding of thermoplastic elastomers micro ring production
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Influence of Process Temperatures on Blister Creation in Micro Film Insert Molding of a Dual Layer Membrane
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Injection molding of micro pillars on vertical side walls using polyether-ether-ketone (PEEK)
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

In-Situ Monitoring in Additive Manufacturing Using Contact Image Sensors
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Investigation of digital light processing using fibre-reinforced polymers
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Length determination on industrial polymer parts from measurement performed under transient temperature conditions
Metrology of sub-micron structured polymer surfaces
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Molecular Gastronomy Meets 3D Printing: Layered Construction via Reverse Spherification
Research output: Research - peer-review › Journal article – Annual report year: 2016

Objectives comparison in a confocal microscope using pseudo-random roughness artefacts
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017

Performance verification of focus variation and confocal microscopes measuring tilted ultra-fine surfaces
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Rheology of High-Melt-Strength Polypropylene for Additive Manufacturing
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2017

Shrinkage calibration method for μPIM manufactured parts
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Strength analysis and modelling of cellular lattice structures manufactured using selective laser melting for tooling applications
Research output: Research - peer-review › Journal article – Annual report year: 2016

The effect of TWD estimation error on the geometry of machined surfaces in micro-EDM milling
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2016

The influence of cellular structures on flow stress of high strength components manufactured using SLM
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Topology Optimization for Additive Manufacturing
Towards in process control of polymer micro manufactured components
Research output: Research - peer-review › Article in proceedings – Annual report year: 2016

Two process chains for creating functional surfaces on mold for 3D geometry
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2016

A comparative study of metal and ceramic injection moulding for precision applications
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Additive manufacturing for the production of inserts for micro injection moulding
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

A Method for Dimensional and Surface Optical Measurements Uncertainty Assessment on Micro Structured Surfaces Manufactured by Jet-ECM
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

An investigation on the role of thermal fins in the design of micro heat exchangers
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Application of Functional Nano-Patterning to Polymer Medical Micro Implants
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Characterization method for blisters created in film insert moulding
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Characterization methods of nano-patterned surfaces generated by induction heating assisted injection molding
Research output: Research - peer-review › Journal article – Annual report year: 2015

Comparative analysis of different process simulation settings of a micro injection molded part featuring conformal cooling
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Comparison of 3 methods on fabricating micro-/nano- structured surface on 3D mold cavity
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015
Comparison of two setups for induction heating in injection molding
Research output: Research - peer-review › Journal article – Annual report year: 2015

Effect of Functional Nano Channel Structures Different Widths on Injection Molding and Compression Molding Replication Capabilities
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Elastic deflection and tilting effect in a multi-stage micro bulk former
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Electrochemical based processes enabling different replication steps for large area low cost surface nano structuring
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2015

Gate design in injection molding of microfluidic components using process simulations
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Hot embossing and mechanical punching of biodegradable microcontainers for oral drug delivery
Research output: Research - peer-review › Journal article – Annual report year: 2014

Investigation of air entrapment and weld line defects in micro injection moulded thermoplastic elastomer micro rings
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Metrological investigation of nanostructured polymer surfaces replication using atomic force microscopy: Uncertainty evaluation in the surface replication fidelity assessment of moulded specimens at the 100 nm scale
Research output: Research - peer-review › Book chapter – Annual report year: 2015

Microfluidic chip designs process optimization and dimensional quality control
Research output: Research - peer-review › Journal article – Annual report year: 2014

Micro injection moulding process validation for high precision manufacture of thermoplastic elastomer micro suspension rings
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2015
Replication of micro pillars by PEEK injection moulding with CrN coated Ni tool
Research output: Research - peer-review › Journal article – Annual report year: 2015

Replication of microstructures on three-dimensional geometries by injection moulding of liquid silicone rubber
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Simulation of a Downsized FDM Nozzle
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Spatial Accuracy of Embedded Surface Coloring in Color 3D Printing
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2015

Three-Dimensional Modeling of Glass Lens Molding
Research output: Research - peer-review › Journal article – Annual report year: 2015

Validation of precision powder injection molding process simulations using a spiral test geometry
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Weld line optimization on thermoplastic elastomer micro injection moulded components using 3D focus variation optical microscopy
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Applicability of chemical vapour polishing of additive manufactured parts to meet production-quality
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Assessment methods of injection moulded nano-patterned surfaces
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Assessment of injection moulded nano-patterned surfaces
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2014

A study on the surface roughness of a thin HSQ coating on a fine milled surface
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014
Bio-inspired solutions in design for manufacturing of micro fuel cell
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Challenges in Design of an Orientation free Micro Direct Methanol Fuel Cell (µDMFC)
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Challenges in high accuracy surface replication for micro optics and micro fluidics manufacture
Research output: Research - peer-review › Journal article – Annual report year: 2014

Characterization of precision of a handling system in high performance transfer press for micro forming
Research output: Research - peer-review › Journal article – Annual report year: 2014

Comparability of the performance of in-line computer vision for geometrical verification of parts, produced by Additive Manufacturing
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Development of a Parafin Wax deposition Unit for Fused Deposition Modelling (FDM)
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Estimation of measurement uncertainties in X-ray computed tomography metrology using the substitution method
Research output: Research - peer-review › Journal article – Annual report year: 2014

Evaluation of the viscoelastic behaviour and glass/mould interface friction coefficient in the wafer based precision glass moulding
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Experimental investigation on corrosion properties of LDS MID for Hearing Aid applications
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Experimental investigation on shrinkage and surface replication of injection moulded ceramic parts
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Grasping devices and methods in automated production processes
Research output: Research - peer-review › Journal article – Annual report year: 2014
High Performance Transfer Press for Precision Manufacturing of Micro Metal Parts: Micro Forming Technology, Precision Engineering
Research output: Research › Ph.D. thesis – Annual report year: 2015

Improvement of replication fidelity in injection moulding of nano structures using an induction heating system
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Induction Heating System Applied to Injection Moulding of Micro and Nano Structures
Research output: Research › Ph.D. thesis – Annual report year: 2015

Injection molding of nanopatterned surfaces in the sub-micrometer range with induction heating aid
Research output: Research - peer-review › Journal article – Annual report year: 2014

Integrated Design, an Approach Towards DfµMA
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Micro Injection Molding of Thin Walled Geometries with Induction Heating System
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Micro Insert Moulding for the Production of 8 Pin RIC Socket for Hearing Aid Applications
Research output: Research › Report – Annual report year: 2014

Performance verification of 3D printers
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Polymer Replication of a Randomly Nanostructured Insert with and without Induction Heating of the Mold
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2014

Precision Glass Molding: Validation of an FE Model for Thermo-Mechanical Simulation
Research output: Research - peer-review › Journal article – Annual report year: 2014

Process chain validation in micro and nano replication
Research output: Research › Ph.D. thesis – Annual report year: 2015

Process variations in surface nano geometries manufacture on large area substrates
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014
Quality assurance of CT scanning for industrial applications
Research output: Research › Ph.D. thesis – Annual report year: 2014

Rendering of surface-geometries at job-generation level for camouflaging the layered nature of Additively Manufactured parts
Research output: Research - peer-review › Article in proceedings – Annual report year: 2015

Replication of micro structured surface by injection moulding of PEEK
Zhang, Y., Hansen, H. N. & Sørensen, S. 2014
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2014

The Shrinkage Behavior and Surface Topographical Investigation for Micro Metal Injection Molding
Research output: Research - peer-review › Conference article – Annual report year: 2014

Towards Mass Production by High Performance Transfer Press in Micro Bulk Forming
Research output: Research - peer-review › Conference article – Annual report year: 2014

A capability study of micro moulding for nano fluidic system manufacture
Research output: Research - peer-review › Conference article – Annual report year: 2013

Accuracy of transferring microparts in a multi stage former
Research output: Research - peer-review › Journal article – Annual report year: 2013

A comparative study on life cycle assessment of micro and macro components
Research output: Research - peer-review › Journal article – Annual report year: 2012

Advancements on the simulation of the micro injection moulding process
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013

A motion study of a manipulator for transferring microparts in a multi stage former
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013

A new capillary gripper for mini and micro parts
Fantoni, G., Hansen, H. N. & Santochi, M. 2013 In : C I R P Annals. 62, 1, p. 17-20
Research output: Research - peer-review › Journal article – Annual report year: 2013

An explanation of the mechanism for laser induced selective activation using diffusion theory
Research output: Research - peer-review › Journal article – Annual report year: 2013
A non-contact 3D method to characterize the surface roughness of castings
Research output: Research - peer-review › Journal article – Annual report year: 2013

Application of nanometrology to polymer production
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Bio-inspired functional surfaces for advanced applications
Research output: Research - peer-review › Journal article – Annual report year: 2013

Capability Handbook- offline metrology
Research output: Research - peer-review › Book – Annual report year: 2013

Dimensional verification of high aspect micro structures using FIB-SEM
Research output: Research - peer-review › Article in proceedings – Annual report year: 2014

Dimensional verification of high aspect ratio micro structures using FIB-SEM
Research output: Research › Poster – Annual report year: 2014

Effects of holding pressure and process temperatures on the mechanical properties of moulded metallic parts
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013

Improving the accuracy of micro injection moulding process simulations
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Influence of process parameters on edge replication quality of lab-on-a-chip micro fluidic systems geometries
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013

Initial verification of an induction heating set-up for injection molding
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013

Injection moulding of large structured area with functional geometries in the sub-100 nanometer meter range
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2013

In-process 3D geometry reconstruction of objects produced by direct light projection
Research output: Research - peer-review › Journal article – Annual report year: 2013
Performance Evaluation of a Software Engineering Tool for Automated Design of Cooling Systems in Injection Moulding
Research output: Research - peer-review › Conference article – Annual report year: 2013

Preliminary format design guidelines: PolyNano Project, Report Milestone 6.3.2, (WP6 Process Chain Validation, Task 6.3 Specifications for OEM service)
Research output: Research - peer-review › Report – Annual report year: 2013

Process chain for nano surface texture of metal and polymer micro structures
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2013

Process validation and standardization: PolyNano Project Report Milestone 6.2.2 (WP6 Process Chain Validation, Task 6.2 standards)
Research output: Research › Report – Annual report year: 2013

Quality control and process capability assessment for injection-moulded micro mechanical parts
Research output: Research - peer-review › Journal article – Annual report year: 2012

Reliability of electrode wear compensation based on material removal per discharge in micro EDM milling
Research output: Research - peer-review › Journal article – Annual report year: 2013

Replication fidelity at μm-nm scale: PolyNano Project Report Milestone 6.3.1 (WP6 Process Chain Validation, Task 6.1 Metrology and Inspection)
Research output: Research › Report – Annual report year: 2013

Surface replication assessment of sub-µm structures by atomic force microscopy
Research output: Research - peer-review › Conference abstract for conference – Annual report year: 2013

Surface roughness characterization of cast components using 3D optical methods.
Research output: Research › Paper – Annual report year: 2013

Two-component injection moulding simulation of ABS-POM micro structured surfaces
Tosello, G., Hansen, H. N. & Islam, A. 2013 Proceedings of the 13th euspen International Conference. The European Society for Precision Engineering and Nanotechnology, p. 47-50
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013

Verification of a characterization method of the laser-induced selective activation based on industrial lasers
Research output: Research - peer-review › Journal article – Annual report year: 2013

Verification of thickness and surface roughness of a thin film transparent coating
Research output: Research - peer-review › Article in proceedings – Annual report year: 2013
8 Pin RIC Socket for Hearing Aid Applications
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

A New Approach for Handling of Micro Parts in Bulk Metal Forming
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Characterization and analysis of micro channels and sub-micron surface roughness of injection moulded microfluidic systems using optical metrology
Research output: Research - peer-review › Journal article – Annual report year: 2012

Characterization of large area nanostructured surfaces using AFM measurements
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Dimensional measurement of micro-moulded parts by computed tomography: Paper
Research output: Research - peer-review › Journal article – Annual report year: 2012

Experimental investigation of new manufacturing process chains to create micro-metal structures on polymer substrates for lab-on-chip sensors
Research output: Research - peer-review › Journal article – Annual report year: 2011

Measurement capability overview in PolyNano: Final
Research output: Research › Report – Annual report year: 2012

Modelling injection moulding machines for micro manufacture applications through functional analysis
Research output: Research - peer-review › Conference article – Annual report year: 2012

Numerical modeling of the conduction and radiation heating in precision glass moulding
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Packing parameters effect on injection molding of polypropylene nanostructured surfaces
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

PolyNano M.6.1.1 Process validation state-of-the-art: Final
Research output: Research - peer-review › Report – Annual report year: 2012
PolyNano M6.2.1 First generation process finger print – design, test and validation: Draft.
Research output: Research › Report – Annual report year: 2012

Production Quality Control Of Microfluidic Chip Designs
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Replica casting technique for micro Fresnel lenses characterization
Research output: Research - peer-review › Article in proceedings – Annual report year: 2012

Surface wear of TiN coated nickel tool during the injection moulding of polymer micro Fresnel lenses
Research output: Research - peer-review › Journal article – Annual report year: 2012

The COTECH knowledge database: assessment of critical factors in micro moulding
Research output: Research › Article in proceedings – Annual report year: 2012

Thermal modelling of the multi-stage heating system with variable boundary conditions in the wafer based precision glass moulding process
Research output: Research - peer-review › Journal article – Annual report year: 2012

Two-component micro injection moulding for hearing aid applications
Research output: Research - peer-review › Journal article – Annual report year: 2012

Verification of Tolerance Chains in Micro Manufacturing
Research output: Research › Ph.D. thesis – Annual report year: 2012

A new pair of hard-soft plastic combination for precision manufacturing of two component plastic parts.
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

An Explanation of the Selective Plating of Laser Machined Surfaces using Surface Tension Components
Zhang, Y., Kontogeorgis, G. & Hansen, H. N. 2011 In : Journal of Adhesion Science and Technology. 25, p. 2101-2111
Research output: Research - peer-review › Journal article – Annual report year: 2011

Characterization of ultra-fine surfaces produced by robot assisted polishing
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011
Dimensional metrology for process and part quality control in micro manufacturing
Research output: Research - peer-review › Journal article – Annual report year: 2011

Effects of glass fibers on the properties of micro molded plastic parts
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

Establishment of sub-µm structured polymer surfaces texture using a non-conventional approach
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

Feasibility of wear compensation in micro EDM milling based on discharge counting and discharge population characterization
Research output: Research - peer-review › Journal article – Annual report year: 2011

Graduate and Ph.D. Course on Design and Manufacture of Micro Mechanical Systems
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

High Accuracy Three-dimensional Simulation of Micro Injection Moulded Parts
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

Measurement of micro moulded parts by Computed Tomography and comparison to optical and tactile techniques
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

Replication of micro and nano surface geometries
Hansen, H. N., Hocken, R. J. & Tosello, G. 2011 In : C I R P Annals. 60, 2, p. 695-714
Research output: Research - peer-review › Journal article – Annual report year: 2011

Replication quality control of metal and polymer micro structured optical surfaces
Report on tolerancing guidelines for micro manufacturing: Final. COTECH EU FP7 Integrated Project (Grant Agreement no.: CP-IP 214491-2)
Research output: Research - peer-review › Report – Annual report year: 2011

Selective metallization of polymers using laser induced surface activation (LISA)—characterization and optimization of porous surface topography
Research output: Research - peer-review › Journal article – Annual report year: 2011

Surface Nano Structures Manufacture Using Batch Chemical Processing Methods for Tooling Applications
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

Towards the first generation micro bulk forming system
Arentoft, M., Eriksen, R. S., Hansen, H. N. & Paldan, N. A. 2011 In : C I R P Annals. 60, 1, p. 335-338
Research output: Research - peer-review › Journal article – Annual report year: 2011

Traceable surface characterization using replica moulding technology
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

Validation of three-dimensional micro injection molding simulation accuracy
Research output: Research - peer-review › Article in proceedings – Annual report year: 2011

3D-SEM Metrology for Coordinate Measurements at the Nanometer Scale
Research output: Research › Ph.D. thesis – Annual report year: 2011

Accuracy optimization of high-speed AFM measurements using Design of Experiments
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

An analytical model for force prediction in ball nose micro milling of inclined surfaces
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Cavity Pressure Behaviour in Micro Injection Moulding
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Characterization of Laser Machined Polymer Surface Using Bearing Area Curve Parameters for Future Plating
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010
Electroless Plating on Plastic Induced by Selective Laser Activation
Research output: Research - peer-review › Conference article – Annual report year: 2010

End of life environmental assessment of micro technologies: the need for the carrot or the stick?
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Experimental investigation of the factors influencing the polymer-polymer bond strength during two-component injection moulding
Research output: Research - peer-review › Journal article – Annual report year: 2010

Influence of annealing and deformation on optical properties of ultra precision diamond turned and anodized 6080 aluminium alloy
Research output: Research - peer-review › Journal article – Annual report year: 2010

In-line monitoring and reverse 3D model reconstruction in additive manufacturing
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Integrating measuring uncertainty of tactile and optical coordinate measuring machines in the process capability assessment of micro injection moulding
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Micro-Injection Moulding
Research output: Research - peer-review › Book chapter – Annual report year: 2010

Micro Mechanical Assembly
Research output: Research - peer-review › Book chapter – Annual report year: 2010

Process Condition Monitoring of Micro Moulding Using a Two-plunger Micro Injection Moulding Machine
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010

Process control and product evaluation in micro molding using a screwless/two-plunger injection unit
Research output: Research - peer-review › Article in proceedings – Annual report year: 2010
Replication and dimensional quality control of industrial nanoscale surfaces using calibrated AFM measurements and SEM image processing
Research output: Research - peer-review ; Journal article – Annual report year: 2010

Report on best practice for improved μ-IM injection moulding simulation: Final. COTECH EU FP7 Integrated Project (Grant Agreement no.: CP-IP 214491-2)
Research output: Research - peer-review ; Report – Annual report year: 2010

Report on non-destructive traceable measuring technologies for micro systems metrology: Final. COTECH EU FP7 Integrated Project (Grant Agreement no.: CP-IP 214491-2)
Research output: Research - peer-review ; Report – Annual report year: 2010

Report on tool transfer and alignment methods: Final. COTECH EU FP7 Integrated Project (Grant Agreement no.: CP-IP 214491-2)
Research output: Research - peer-review ; Report – Annual report year: 2010

Study of process parameters effect on the filling phase of micro injection moulding using weld lines as flow markers
Research output: Research - peer-review ; Journal article – Annual report year: 2010

Surface texture metrology for high precision surfaces
Research output: Research - peer-review ; Article in proceedings – Annual report year: 2010

Sustainability of Micro-Manufacturing Technologies
Research output: Research - peer-review ; Book chapter – Annual report year: 2010

Tolerance Verification of Micro and Nano Structures on Polycarbonate Substrates
Research output: Research - peer-review ; Article in proceedings – Annual report year: 2010

Towards the effective tool wear control in micro-EDM milling
Research output: Research - peer-review ; Journal article – Annual report year: 2010

Tribological influence of tool surface roughness within microforming
Research output: Research - peer-review ; Journal article – Annual report year: 2010

Tribological influence of tool surface topography within microforming
Research output: Research - peer-review ; Conference article – Annual report year: 2010
Two-component microinjection moulding for MID fabrication
Research output: Research - peer-review › Journal article – Annual report year: 2010

2k micro moulding for MID fabrication
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Applications of dimensional micro metrology to the product and process quality control in manufacturing of precision polymer micro components
Tosello, G., Hansen, H. N. & Gasparin, S. 2009 In : C I R P Annals. 58, 1, p. 467-472
Research output: Research - peer-review › Journal article – Annual report year: 2009

A profiling platform at 915, 1075, and 1090nm
Research output: Research › Article in proceedings – Annual report year: 2009

Characterization and analysis of micro channels and sub-micron surface roughness of injection moulded microfluidic systems using optical metrology
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Characterization and analysis of sub-micron surface roughness of injection moulded microfluidic systems using White Light Interferometry
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Characterization and analysis of weld lines on micro-injection moulded parts using atomic force microscopy (AFM)
Research output: Research - peer-review › Journal article – Annual report year: 2009

éalisation de micro systèmes passifs par technologies non silicium
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

EcoDesign and LCA approach toward sustainable micro products development
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Electroless Plating on Plastic Induced by Selective Laser Activation
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Examining the influence of injection speed and mould temperature on the tensile strength of polypropylene and ABS
Research output: Research - peer-review › Report – Annual report year: 2009

Experimental validation of viscous and viscoelastic simulations of micro injection molding process
Influence of different process settings conditions on the accuracy of micro injection molding simulations: an experimental validation
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Influence of measuring parameters on the accuracy of atomic force microscope in industrial applications
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Integration of micro milling highspeed spindle on a microEDM-milling machine set-up
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

LASER INDUCED SELECTIVE ACTIVATION UTILIZING AUTO-CATALYTIC ELECTROLESS PLATING ON POLYMER SURFACE
Zhang, Y., Nielsen, J. S., Tang, P. T. & Hansen, H. N. 2009 LASER INDUCED SELECTIVE ACTIVATION UTILIZING AUTO-CATALYTIC ELECTROLESS PLATING ON POLYMER SURFACE.
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Mechanical properties test and microstructure analysis of polyoxymethylene (POM) micro injection moulded standard parts
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Microfactories - Implications on automation of micro manufacturing processes
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Micro tooling technologies for polymer micro replication: direct, indirect and hybrid process chains
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Multi-scale optical metrology for the quality control of polymer microfluidic systems
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Physical masking process for integrating micro metallic structures on polymer substrate: Physical mask
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Process chains for the manufacturing of moulded interconnect devices
Research output: Research - peer-review › Journal article – Annual report year: 2009

Quality control of injection moulded micro mechanical parts
Report on COTECH test procedure and characterization techniques: COTECH Deliverable
Research output: Research - peer-review › Report – Annual report year: 2009

Report on process requirements: COTECH D1.1.2
Research output: Research - peer-review › Report – Annual report year: 2009

Size effects in manufacturing of metallic components
Research output: Research - peer-review › Conference article – Annual report year: 2009

Sub-µm structured lotus surfaces manufacturing
Research output: Research - peer-review › Journal article – Annual report year: 2009

Tooling Process Chains and Concepts
Research output: Education - peer-review › Book chapter – Annual report year: 2009

Two component injection moulding: Present and future perspectives
Islam, A. & Hansen, H. N. 2009
Research output: Research - peer-review › Net publication - Internet publication – Annual report year: 2009

Two component micro injection molding for MID fabrication
Research output: Research - peer-review › Article in proceedings – Annual report year: 2009

Two component micro injection moulding for moulded interconnect devices
Research output: Research › Ph.D. thesis – Annual report year: 2008

4M Progress Report 2006-2008
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Alignment procedure for pallet and robot coordinate system in micro assembly operations
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

An Experimental Investigation of Diffusion within Electroplated Lead-free Solder Alloy Stacks Combining Elements such as Sn, Cu, Au and/or Zn onto a Ni UBM
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008
Characterization of nano-scale finished surfaces
Hansen, H. N. & De Chiffre, L. 2008
Research output: Research › Conference abstract for conference – Annual report year: 2008

Direct dynamic calibration of dynamometers for micro milling operations
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Establishment of traceability in measurement of micro components
Hansen, H. N. 2008
Research output: Research › Conference abstract for conference – Annual report year: 2008

Force analysis in micro milling Al 6082 T6 in various engagement conditions
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

High aspect ratio micro tool manufacturing for polymer replication using mu EDM of silicon, selective etching and electroforming
Research output: Research - peer-review › Journal article – Annual report year: 2008

Hot embossing of high aspect ratio sub-μm structured surfaces for micro fluidic applications
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Implementation strategies for the optimization of micro injection moulding simulations
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

In-cavity pressure and injection time measurements during the micro injection moulding process
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Influence of microstructure of 6083 aluminium alloy on the appearance of anodized layer
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Research output: Research › Article in proceedings – Annual report year: 2008

Laser induced selective activation utilizing auto-catalytic electroless plating on polymer surfaces
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2008

Microfactories for micro bulk metal forming
Micro Factory - design and realisation
Hansen, H. N. 2008

Micro-MID Manufacturing By Two-Shot Injection Moulding

Modelling the cutting edge radius size effect for force prediction in micro milling

Mode profiling of optical fibers at high laser powers

Moulded interconnect device fabrication by two shot molding and lasert induced selective activation

Multidisciplinary graduate course and PhD summerschool in micromechanical system design and manufacture
Hansen, H. N., De Grave, A. & Bissacco, G. 2008 proceedings of the EUSPEN. The European Society for Precision Engineering and Nanotechnology

On the use of industrial robots in microfactories

Preparation of a polymer article for selective metallization

Process and part filling control in micro injection molding

Quality control of micro objects
Hansen, H. N. 2008

Selective micro metallization of polymers for biomedical and medical application

Sub-µm structured surfaces manufacturing using e-beam machining, X-Ray lithography, electroforming and polymer replication for micro fluidics applications
Sub-µ structured Lotus Surfaces Manufacturing
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Surface tension of polymer melts - experimental investigations of its effect on polymer-polymer adhesion
Research output: Research - peer-review › Poster – Annual report year: 2008

Technology review about micro technology and related subject: visiting University and Industries in Japan
Research output: Research › Report – Annual report year: 2008

The use of “games” in teaching mechanical design
De Grave, A. & Hansen, H. N. 2008
Research output: Education › Sound/Visual production (digital) – Annual report year: 2008

Tolerancing issues in micro manufacturing
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Tooling process chains for polymer replication of micro fluidic devices
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Torque measurements for micro screws
Research output: Research - peer-review › Article in proceedings – Annual report year: 2008

Two component injection moulding: an interface quality and bond strength dilemma
Research output: Research › Article in proceedings – Annual report year: 2008

Two component micro injection moulding for moulded interconnect devices: 2k moulding for MIDs
Islam, M. A. & Hansen, H. N. 2008
Research output: Research › Sound/Visual production (digital) – Annual report year: 2008

A new approach for the validation of filling simulations in micro injection moulding
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

An uncertainty model for thermal effects on axial depth of cut in micro milling
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007
A screwing device for handling and assembly of micro screws
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Automation of 3D micro object handling process
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Characterization and analysis of weld lines on micro injection moulded parts using Atomic Force Microscope
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Characterization of pulses in micro EDM milling based on wear and material removal
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Complex process chains for manufacturing of invisible displays integrated in bulk metal panels
Research output: Research - peer-review › Journal article – Annual report year: 2007

Demouldability of microstructures in polymer moulding
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Development and analysis of a software tool for stitching three dimensional surface topography data sets
Research output: Research - peer-review › Journal article – Annual report year: 2007

Developments in nanometrology at IPL
Research output: Research - peer-review › Poster – Annual report year: 2007

Dimensional metrology in micro manufacturing
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Experimental investigation of the factors influencing the polymer-polymer bond strength during two component injection moulding
Research output: Research › Article in proceedings – Annual report year: 2007

Factors influencing the polymer-polymer adhesion-strength during two shot moulding
Research output: Research › Poster – Annual report year: 2007
Filling analysis in micro injection moulding using weld lines as flow markers
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Handling of micro objects: investigation of mechanical gripper functional surfaces
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Handlingsplan for det metrologiske område Længde
Kühle, A., Carneiro, K., De Chiffre, L., Hansen, H. N. & Eldam, K. 2007 DFM.
Research output: Research › Report – Annual report year: 2007

Influence of process parameters on the weld lines of a micro injection molded component
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

In-line measurement of transparent micro membranes
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

In-situ Investigation of Lead-free Solder Alloy Formation Using a Hot-plate Microscope
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Laser Beam Focus Analyser
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Life Cycle Assessment of micro manufacturing process chains - Application to the micro factory concept
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Measuring uncertainty applied to design of experiment analysis: a micro injection moulding case study
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Micro-and Nanostructured Surfaces for the Liquid and Gas Management in Microstructured Flowfields
Research output: Research - peer-review › Poster – Annual report year: 2007
Micro-electrochemical machining of aluminium
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Micro-Nano integrated manufacturing metrology for the characterization of micro injection moulded parts
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Micro tools manufacturing for polymer replication with high aspect ratio structures using µEDM of silicon, selective etching and electroforming
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Mikrometal, Cold forging of industrial micro components
Research output: Research › Article in proceedings – Annual report year: 2007

Precision tooling technologies for micro forming
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Pre-industrial aspects of microforming related to process, machine and tool
Arentoft, M. & Hansen, H. N. 2007
Research output: Research › Conference abstract for conference – Annual report year: 2007

Selected process chains for manufacturing of moulded interconnect devices (MID)
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

Surface tension of polymer melts - experimental investigations of its effects on polymer-polymer adhesion.
Research output: Research › Poster – Annual report year: 2007

Thermal behaviour of micro EDM milling machine and influence on electrode wear compensation
Research output: Research - peer-review › Article in proceedings – Annual report year: 2007

A cutting force model for micromilling applications
Research output: Research - peer-review › Article in proceedings – Annual report year: 2006

Automated assembly of micro mechanical parts in a Microfactory setup
Research output: Research - peer-review › Article in proceedings – Annual report year: 2006

Bond strength of two component injection moulded MID
Case Study in Biomimetic Design: Handling and Assembly of Microparts

Design and manufacture of micro mechanical systems

Design rules for Microfactory Solutions

Development of a gripper for handling and assembly of microscrews

Dimensional micro and nano metrology
Hansen, H. N. 2006

Establishment of integrated information displays in aluminium surfaces using nanomanufacturing

Indirect tooling based on micromilling, electroforming and selective etching

In-process assembly of micro metal inserts in a polymer matrix

Investigation of over-moulded hybrid metal/polymer devices

Manufacturing and characterisation of water repellent surfaces
Micromechanical systems design and manufacture
Hansen, H. N. 2006
Research output: Research › Conference abstract for conference – Annual report year: 2006

Micro-production using Bits-out technologies
Hansen, H. N. 2006
Research output: Research › Conference abstract for conference – Annual report year: 2006

Realization and characterization of high precision micro grooves on green ceramic
Research output: Research - peer-review › Article in proceedings – Annual report year: 2006

Residual stress in Ni-W electrodeposits
Research output: Research - peer-review › Journal article – Annual report year: 2006

Selective anodising technologies for obtaining translucent micro structures
Research output: Research - peer-review › Article in proceedings – Annual report year: 2006

Size Effects on Surface Generation in Micro Milling Hardened Tool Steel
Bissacco, G., Hansen, H. N. & De Chiffre, L. 2006 In : C I R P Annals. 55, 1, p. 593-596
Research output: Research - peer-review › Conference article – Annual report year: 2006

Surface microstructure replication in injection molding
Research output: Research - peer-review › Journal article – Annual report year: 2006

Sustainability of Products Based on Micro and Nano Technologies
Research output: Research - peer-review › Article in proceedings – Annual report year: 2006

The Danish Microfactory
Hansen, H. N. 2006
Research output: Research › Poster – Annual report year: 2006

A MEANS FOR CALIBRATING A MICROSCOPE, A METHOD OF PREPARING THE MEANS AND A METHOD OF CALIBRATING A MICROSCOPE
Research output: Research › Patent – Annual report year: 2005

A methodology for characterization and categorization of solutions for micro handling
Research output: Research - peer-review › Article in proceedings – Annual report year: 2005

Automation of microfactories: towards using small industrial robots
Research output: Research - peer-review › Article in proceedings – Annual report year: 2005
Biomimetics approach for methods to release microobjects from the gripping tool
Research output: Research - peer-review › Report – Annual report year: 2005

CIRP Interlaboratory Comparison of Coordinate Measuring Machines using an Optomechanical Hole Plate
Research output: Research - peer-review › Report – Annual report year: 2005

CIRP Interlaboratory Comparison of Coordinate Measuring Machines using an Optomechanical Hole Plate - Final Report
Research output: Research - peer-review › Journal article – Annual report year: 2005

Classification of assembly techniques for micro products
Research output: Research - peer-review › Article in proceedings – Annual report year: 2005

Comparison of Coordinate Measuring Machines using an Optomechanical Hole Plate
De Chiffre, L., Hansen, H. N. & Morace, R. E. 2005 In : CIRP Annals. 54/1, p. 479-482
Research output: Research - peer-review › Journal article – Annual report year: 2005

Comparison of two different methods for the uncertainty estimation of circle diameter measurements using an optical coordinate measuring machine
Research output: Research - peer-review › Article in proceedings – Annual report year: 2005

Development of a new electrolyte for deposition of Ni-W alloys
Research output: Research - peer-review › Journal article – Annual report year: 2005

Development of a new electroplating process for Ni-W alloy deposits
Research output: Research - peer-review › Journal article – Annual report year: 2005

Establishment of Integrated Information Displays in Aluminium Surfaces Using Nanomanufacturing
Research output: Research - peer-review › Article in proceedings – Annual report year: 2005

Geometrical characterization of micro end milling tools
Research output: Research - peer-review › Article in proceedings – Annual report year: 2005

Investigation on a procedure for optimal axial depth of cut accuracy in micromilling
Research output: Research - peer-review › Article in proceedings – Annual report year: 2005

Investigation on the traceability of three dimensional scanning electron microscope measurements based on the stereopair technique
Bariani, P., De Chiffre, L., Hansen, H. N. & Horsewell, A. 2005 In : Precision Engineering. 29, p. 219-228
Research output: Research - peer-review › Journal article – Annual report year: 2005

Invisible Display in Aluminum

Invisible Display in Aluminum
Koordinatmåling i den nye verden: Hvordan måler man dimensioner og form på mikroemner?
Research output: Research › Article in proceedings – Annual report year: 2005

Micromilling of hardened tool steel for mould making applications
Research output: Research - peer-review › Journal article – Annual report year: 2005

Micro Nano PMP (Product-Method-Process) Graduate Course
Research output: Research - peer-review › Article in proceedings – Annual report year: 2005

Micro product development methods - how do we focus on the right issues?
Research output: Research - peer-review › Article in proceedings – Annual report year: 2005

Modelling and Measurement Uncertainty Estimation for Integrated AFM-CMM Instrument
Hansen, H. N., Bariani, P. & De Chiffre, L. 2005 In : CIRP Annals - Manufacturing Technology. 54, 1, p. 531-534
Research output: Research - peer-review › Journal article – Annual report year: 2005

Precision manufacturing methods of inserts for injection molding of microfluidic systems.
Research output: Research - peer-review › Article in proceedings – Annual report year: 2005

Residual Stress in Ni-W Deposits
Research output: Research - peer-review › Conference abstract in proceedings – Annual report year: 2005

Roughness measurements with an AFM-CMM Instrument
Research output: Research - peer-review › Article in proceedings – Annual report year: 2005

Surface Microstructure Replication in Injection Moulding
Research output: Research - peer-review › Article in proceedings – Annual report year: 2005

Surface Micro Topography Replication in Injection Moulding
Research output: Research - peer-review › Article in proceedings – Annual report year: 2005

Verification of optical coordinate measuring machines along the vertical measurement axis
Research output: Research - peer-review › Article in proceedings – Annual report year: 2005

Wear of micro end mills
Research output: Research - peer-review › Article in proceedings – Annual report year: 2005
Automatic quality control in the production of ceramic substrates by pulsed laser cutting
Research output: Research - peer-review › Article in proceedings – Annual report year: 2004

CIRP Interlaboratory Comparison
De Chiffre, L., Hansen, H. N. & Morace, R. E. 2004 IPL: IPL.
Research output: Research › Report – Annual report year: 2004

Development and design of micro products
Research output: Research › Report – Annual report year: 2004

Development of a new electrolyte for Ni-W electroforming with combinations of complexing agents
Research output: Research › Conference abstract in proceedings – Annual report year: 2004

Effect of Cutting Parameters on Microhardness in 2 mm Slot Milling Hardened Tool Steel
Research output: Research › Article in proceedings – Annual report year: 2004

Experimental assesment of optical uncertainty components in the measurement of an optomechanical hole plate
Research output: Research › Article in proceedings – Annual report year: 2004

Experimental characterization of micromilled surfaces by large range AFM
Research output: Research › Article in proceedings – Annual report year: 2004

Research output: Research › Book – Annual report year: 2004

Improving axial depth of cut accuracy in micromilling
Research output: Research › Article in proceedings – Annual report year: 2004

Micro Injection Moulding Challenges Connected to the Realisation of Process Chains for Micro Injection Moulding
Research output: Research › Book – Annual report year: 2004

Mikro- og nanoteknologi - udvikling og industriel fremstilling af fremtidens produkter
Research output: Research › Book – Annual report year: 2004

Nano Manufacturing - Products and Technologies
Research output: Research › Article in proceedings – Annual report year: 2004

Participant report for DiaMetroLogic (Denmark) Hole Plate No. 137
Participant report for Warsaw University of Technology (Poland) Hole Plate No. 137
Research output: Research › Report – Annual report year: 2004

Surface Mapping with an AFM-CMM Integrated System and Stitching Software
Research output: Research › peer-review › Article in proceedings – Annual report year: 2004

Traceability of Dimensional Measurements using the Scanning Electron Microscope
Research output: Research › peer-review › Article in proceedings – Annual report year: 2004

Uncertainty budget for optical coordinate measurements of circle diameter
Research output: Research › peer-review › Article in proceedings – Annual report year: 2004

Biomimetics applied to centring in micro-assembly
Research output: Research › peer-review › Journal article – Annual report year: 2003

Comparative investigation of optical techniques for topography measurement of rough plastic surfaces
Research output: Research › peer-review › Article in proceedings – Annual report year: 2003

Creation of Micro Products in the future - joining of materials as a key technology
Research output: Research › peer-review › Article in proceedings – Annual report year: 2003

Fremtidens produktion - på mikro og nano niveau
Research output: Research › peer-review › Book – Annual report year: 2003

Injection Moulding of Plastic Parts with Surface Microstructures
Research output: Research › peer-review › Article in proceedings – Annual report year: 2003

Integrated Micro Product and Technology Development
Research output: Research › peer-review › Article in proceedings – Annual report year: 2003

Investigation on influence parameters in measurements of the optomechanical hole plate using an optical coordinate measuring machine
Research output: Research › peer-review › Article in proceedings – Annual report year: 2003

Manufacture of Nano Structures in Polymer Material
Research output: Research › peer-review › Article in proceedings – Annual report year: 2003
Micro Engineering
Research output: Research - peer-review › Journal article – Annual report year: 2003

Micro Factory Systems and Tooling
Research output: Research - peer-review › Article in proceedings – Annual report year: 2003

Micro Manufacturing
Research output: Research - peer-review › Article in proceedings – Annual report year: 2003

Micro Products - Product Development and Design
Research output: Research - peer-review › Article in proceedings – Annual report year: 2003

Research output: Research - peer-review › Book – Annual report year: 2003

Mikroteknologi – et tværfagligt satsningsområde på Institut for Produktion og Ledelse
Research output: Research - peer-review › Book – Annual report year: 2003

Proceedings of the 1st CIRP Seminar on Micro and Nano Technology
Research output: Research › Conference abstract in proceedings – Annual report year: 2003

Product Development in Micro and Nano Manufacturing - The Challenge of the Future
Research output: Research - peer-review › Article in proceedings – Annual report year: 2003

Quality of topographical micro replication in injection moulding
Research output: Research - peer-review › Article in proceedings – Annual report year: 2003

Research in surface roughness for injection moulded parts
Research output: Research - peer-review › Journal article – Annual report year: 2003

The effect of mold surface topography on plastic parat in-process shrinkage in injection molding
Research output: Research - peer-review › Article in proceedings – Annual report year: 2003

Uncertainty contributions due to different measurement strategies applied to optomechanical hole plate
Research output: Research - peer-review › Article in proceedings – Annual report year: 2003

Approaches to the Calibration of Freeform Artefacts on Coordinate Measuring Machines
MM96.60 Kalibrering af kugle- og hulplader samt kalibrering og verifikation af koordinatmålemaskiner med kugle- og hulplader hos CGM.
Research output: Research - peer-review › Report – Annual report year: 1996

MM96.61 Resultater fra projektet "Nordisk audit af koordinatmålemaskiner"
Research output: Research - peer-review › Report – Annual report year: 1996

MM96.62 Koordinatmåling: Kalibrering og anvendelse på plastemner. 4. temadag indenfor koordinatmåling.
Research output: Research - peer-review › Report – Annual report year: 1996

MM96.71 Nordisk audit af koordinatmålemaskiner
Research output: Research - peer-review › Article in proceedings – Annual report year: 1996

MM96.90 Results from an industrial comparison of coordinate measuring machines in Scandinavia
Research output: Research - peer-review › Report – Annual report year: 1996

MM96.91 Pladenormal til optisk koordinatmåling.
Research output: Research - peer-review › Report – Annual report year: 1996

MM96.93 Optisk ruhedsmåling på hudreplika. Slutrapport.
Research output: Research - peer-review › Report – Annual report year: 1996

Projects:

End-of-Life-Tires Rubber Recycling and Powder Injection Moulding
Basso, A., Zhang, Y., Hansen, H. N. & Linnemann, L.
01/01/2019 → 31/12/2021
Project: PhD

Powder Technologies for Additive Manufacturing
Andersen, S. A., Hansen, H. N. & Pedersen, D. B.
Samfinansieret - Andet
01/06/2017 → 31/05/2020
Project: PhD

Integrated processchains based on additive manufacturing precision processes and technologies for production of high accuracy mould components
Eksternt finansieret virksomhed
01/04/2017 → 31/03/2020
Project: PhD

Værktøjsteknologier til massefremstilling af metalliske komponenter
Eriksen, R. S., Hansen, H. N., Arentoft, M., Bissacco, G., Bay, N. O., Engel, U. & Groenbaek, J.
DTU-lånnet stipendie
01/10/2006 → 29/09/2010
Project: PhD
In-process kvalitetskontrol og måling af mikrokomponenter
Offentlig finansiering
01/09/2004 → 13/05/2008
Project: PhD

Mekanismer for overfladedannelse ved sprøjtestøbning
DTU-lønnet stipendie
01/02/1999 → 01/11/2004
Project: PhD

Kalibrering af koordinatmålemaskiner
DTU-Su Stipendium, Eksperiment
01/02/1994 → 30/05/1997
Project: PhD

Electrocatalytic Materials
Samfinansieret - Andet
15/09/2016 → 14/09/2019
Project: PhD

Cutting Force Modelling and Error Compensation in Large Structure Machining
Checchi, A., Bissacco, G. & Hansen, H. N.
Samfinansieret - Andet
01/06/2016 → 31/05/2019
Project: PhD

Additive Manufacturing of Fibre-Reinforced Polymers
Hofstätter, T., Tosello, G., Hansen, H. N., De Chiffre, L., Zeidler, H. & Fleischer, J.
Institut stipendie (DTU)
01/01/2016 → 27/05/2019
Project: PhD

Precision Injection Moulding of Micro Features using Integrated Process/Product Quality Assurance
Samfinansieret - Andet
01/01/2016 → 28/02/2019
Project: PhD

New production paradigms for wind turbines
Industrial PhD
01/09/2015 → 14/02/2019
Project: PhD

Process chains for advanced tooling based on additive manufacturing
Biondani, F. G., Bissacco, G., Hansen, H. N., De Chiffre, L., Beaucamp, A. & Lauwers, B.
Forskningsrådsfinansiering
01/11/2014 → 06/03/2018
Project: PhD

Sensing for dynamic length metrology in accurate manufacture
Multi Scale Micro and Nano Metrology for Advanced Precision Moulding Technologies
Quagliotti, D., Tosello, G., Hansen, H. N., De Chiffre, L., Balsamo, A. & Bosse, H.
Samfinansieret - Andet
01/02/2014 → 20/04/2017
Project: PhD

Advanced Anodising Technology (Avanceret Anodiserings Teknologi)
ErhvervsPhD-ordningen VTU
01/09/2006 → 06/01/2010
Project: PhD

Manufacture of Aluminium Displays Based on Micro Technology
ErhvervsPhD-ordningen VTU
01/01/2004 → 31/08/2007
Project: PhD

Microfluidic Systems for drug delivery
ErhvervsPhD-ordningen VTU
01/04/2003 → 06/09/2006
Project: PhD

Reagentless dissolved Oxygen-sensor for Microfluidic Applications (water/blood analysis)
Jensen, M. F., Geschke, O., Christensen, L. H., Hansen, H. N., Drese, K. S., Schou, J. & Christensen, L.
Erhvervsforskerordningen
01/10/2001 → 02/02/2005
Project: PhD

Validering og industriel anvendelse af metrologisk atomic force microscope
Erhvervsforskerordningen
01/01/1999 → 21/03/2002
Project: PhD

Micro metal forming
Mahshid, R., Hansen, H. N., Arentoft, M., Bissacco, G., Andreasen, J. L. & Vollertsen, F.
Privatist
15/03/2011 → 19/12/2014
Project: PhD

Two component micro injection moulding for moulded interconnect devices
Offentlig finansiering
01/03/2005 → 04/07/2008
Project: PhD

Polymer-Microsystems Fabricated in Cyclic Olefine Copolymer (COC)
Institut/centerfinansieret
01/11/2003 → 01/03/2007
Project: PhD
Process validation in micro and nano replication
Calaon, M., Hansen, H. N., Tosello, G., da Costa Carneiro, K., Whiteside, B. R. & Worgull, M.
Forskningsrådsfinansiering
01/08/2011 → 03/12/2014
Project: PhD

Handling and Assembly of Microproducts
Forskningsrådsfinansiering
01/05/2004 → 21/12/2007
Project: PhD

Topology optimization for additive manufacturing
Institut, samfinansiering
01/03/2013 → 09/12/2016
Project: PhD

Multi material additive manufacturing
Institut, samfinansiering
01/11/2012 → 07/04/2016
Project: PhD

Characterization and testing of multifunctional surfaces
Institut, samfinansiering
01/05/2010 → 27/08/2013
Project: PhD

Modelling selective Laser Melting
1/3 FUU, 1/3 inst 1/3 Andet
01/05/2012 → 11/12/2015
Project: PhD

Modelling induction heating in the surface of injection moulding tools
1/3 FUU, 1/3 inst 1/3 Andet
01/04/2012 → 24/09/2015
Project: PhD

Tooling process chains for micro injection moulding
1/3 FUU, 1/3 inst 1/3 Andet
01/12/2011 → 19/03/2015
Project: PhD

Quality Assurance and Akutomation of Industrial CT Scanning
1/3 FUU, 1/3 inst 1/3 Andet
01/08/2010 → 25/08/2014
Project: PhD

Modelling the deformation process of flexible stamps for nanoimprint lithography
Integrated modelling of the glass moulding process
Sarhadi, A., Hattel, J. H., Hansen, H. N., Tutum, C. C., Thorborg, J., Yan, J. & Yi, A.
1/3 FUU, 1/3 inst 1/3 Andet
01/04/2011 → 03/12/2014
Project: PhD

Coordinate metrology by traceable CT scanning
1/3 FUU, 1/3 inst 1/3 Andet
01/01/2010 → 04/04/2013
Project: PhD

Tolerance chains and their verification in micro-manufacturing
1/3 FUU, 1/3 inst 1/3 Andet
01/02/2009 → 25/06/2012
Project: PhD

Laser Induce Selective Activation For Subsequent Autocatalytic Electroless Plating
DTU-lønnet stipendie
01/10/2007 → 02/02/2011
Project: PhD

Universal and Flexible 3D Coordinate Metrology for Micro and Nano Components Production
DTU-lønnet stipendie
01/09/2007 → 02/02/2011
Project: PhD

Micro insert moulding
DTU-lønnet stipendie
01/03/2005 → 29/08/2008
Project: PhD

High temperature solder for MEMS packaging
ErhvervsPhD-ordningen VTU
01/02/2006 → 02/09/2009
Project: PhD

New Plastics and Processes for Disposable Delivery Systems
ErhvervsPhD-ordningen VTU
15/12/2005 → 24/06/2009
Project: PhD

Tailoring the Mechanical and Thermal Properties of Electrodeposited Micro Components by Controlling the Internal Micro- and Nano-structure
DTU-lønnet stipendie
01/04/2003 → 11/06/2007
Metrology of Microtechnological Components
DTU-lønnet stipendie
01/01/2002 → 10/06/2005
Project: PhD

Modelling and optimisation of high speed milled surfaces
DTU-lønnet stipendie
01/08/2001 → 09/02/2005
Project: PhD

Design and Manufacture of micro Products Using Concurrent Engineering
Institut stipendie (DTU) Samf.
01/02/2013 → 28/04/2016
Project: PhD

Fabrication and characterization of drug delivery vehicles
Programbevilling
01/01/2010 → 18/04/2013
Project: PhD

Micro Injection Moulding for Micro Fuel cells Production
Institut, samfinansiering
15/12/2012 → 25/11/2016
Project: PhD

Design for micro manufacturing
Institut, samfinansiering
15/06/2012 → 30/10/2015
Project: PhD

Additive manufactoring technology - process and product quality control
DTU, Samfinansiering
01/01/2010 → 04/04/2013
Project: PhD

From Nanostructure to Micro Morphology in Polymers
Institut stipendie (DTU) Samf.
01/04/2008 → 30/11/2011
Project: PhD

Advanced Process Chains for Prototyping and Pilot Production based on Additive Manufacturing
Mischkot, M., Tosello, G., Hansen, H. N., Pedersen, D. B., Islam, A., Qian, J. & Hadar, R.
Institut stipendie (DTU)
01/11/2013 → 06/09/2018
Project: PhD
Micro punching of micro containers for oral drug delivery
Petersen, R. S., Mahshid, R. & Hansen, H. N.
21/01/2013 → 13/11/2014
Project: Research

Center for udfældning, modelleior og karakterisering af højsmeltende blyfri mikrolod
Hansen, H. N., Hattel, J. H., Hald, J. & Somers, M. A. J.
01/01/2007 → 30/06/2010
Project: Research

CIRP inter-laboratory comparison of coordinate measurements using an
De Chiffre, L., Hansen, H. N., Sobiecki, R., Larsen, E. & Morace, R. E.
01/12/2002 → 01/11/2005
Project: Research

Nanotribology
Hansen, H. N., Tosello, G., De Grave, A. & Sivebæk, I. M.
01/07/2007 → 30/11/2009
Project: Research

Plasmonic optical sensors
Hansen, H. N. & Islam, A.
01/01/2006 → 30/06/2009
Project: Research

Nordic audit of coordinate measuring machines
De Chiffre, L. & Hansen, H. N.
01/10/1994 → 31/12/1997
Project: Research

Validation and industrial use of an metrology atomic force microscope
De Chiffre, L., Kofod, N. & Hansen, H. N.
01/01/1999 → 17/01/2002
Project: Research
Uncertainty estimation in coordinate metrology
Hansen, H. N.
Ukendt
01/09/1997 → 31/08/1998
Project: Research

Procedures for calibration of gauges
De Chiffre, L., Hansen, H. N. & Sobiecki, R.
Ukendt
01/01/1996 → 30/06/1996
Project: Research

Verification and Calibration of Coordinate Measuring Machines
De Chiffre, L. & Hansen, H. N.
01/02/1994 → 27/01/1997
Project: Research

COTECH: Converging technologies for micro systems manufacturing
Forsk, EU - Rammeprogram
01/10/2008 → 30/09/2012
Project: Research

Micro Poduct Development
Hansen, H. N.
Ukendt
01/11/2004 → 01/10/2007
Project: Research

Centre for applied laser micro manufacture (CALM)
Forsk. Andre statslige danske i øvrigt
01/09/2004 → 01/08/2007
Project: Research

4M
Hansen, H. N., Bissacco, G., Tang, P. T., De Grave, A., Eriksson, T. G. & Tosello, G.
Ukendt
01/10/2004 → 30/06/2009
Project: Research

Selective micro metallization of polymers
Ukendt
01/01/2005 → 30/06/2009
Project: Research

Center for mikrosystemer til Kemisk og Biokemisk analyse baseret på Polymerer
Geschke, O., Tang, P. T. & Hansen, H. N.
Forsk. Andre offentlige og private - Udenlandske
17/09/2002 → 30/06/2006
Project: Research

Danish Micro Factory
Forskningsprojekter - Andre ministerier og styrelser
01/01/2004 → 01/12/2007
Project: Research

In-process quality assurance of micro components
Fugl, J. & Hansen, H. N.
Forsk. Andre statslige danske i øvrigt
01/09/2004 → 01/08/2007
Project: Research

Micromanufacturing of aluminium
Hansen, H. N.
Samarb.aftaler, Private danske - Andre virksomheder
01/01/2004 → 01/12/2006
Project: Research

Biopack
Kjær, E. M., Hansen, H. N. & Gegeckaite, A.
Forsk. EU - Rammeprogram
01/08/2001 → 01/07/2004
Project: Research

Micro/Nano Manufacturing
Hansen, H. N., Alting, L., Gegeckaite, A. & Bissacco, G.
Gaver, Private danske Andre private
01/05/2002 → 01/05/2007
Project: Research