Research outputs:

**Direct three-dimensional tomographic reconstruction and phase retrieval of far-field coherent diffraction patterns**
Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review

**Stable, carbon-free inks of Cu2ZnSnS4 nanoparticles synthesized at room temperature designed for roll-to-roll fabrication of solar cell absorber layers**
Research output: Contribution to journal › Journal article – Annual report year: 2019 › Research › peer-review

**Time-resolved X-ray Absorption Spectroscopy of Copper Zinc Tin Sulfide Nanoparticles**
Research output: Contribution to conference › Poster – Annual report year: 2018 › Research

**Time-resolved X-ray Absorption Spectroscopy of Copper Zinc Tin Sulfide Nanoparticles**
Research output: Contribution to conference › Poster – Annual report year: 2018 › Research

**Time-resolved X-ray Absorption Spectroscopy of Copper Zinc Tin Sulfide Nanoparticles**
Research output: Contribution to conference › Poster – Annual report year: 2018 › Research

**Time-resolved X-ray Absorption Spectroscopy of Copper Zinc Tin Sulfide Nanoparticles**
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 2018 › Research › peer-review

**Towards Molecular Dynamics Modelling of Mesoscale Bulk Heterojunction Morphologies**
Research output: Contribution to conference › Poster – Annual report year: 2018 › Research

**A facile approach to fabricate hierarchically structured poly(3-hexylthiophene-2,5-diy) films**
Research output: Contribution to journal › Journal article – Annual report year: 2017 › Research › peer-review

**Automated angular and translational tomographic alignment and application to phase-contrast imaging**
Research output: Contribution to journal › Journal article – Annual report year: 2017 › Research › peer-review
Thermoelectric Properties of Solution-Processed n-Doped Ladder-Type Conducting Polymers
Research output: Contribution to journal › Journal article – Annual report year: 2016 › Research › peer-review

Acido-basic control of the thermoelectric properties of poly(3,4-ethylenedioxythiophene)tosylate (PEDOT-Tos) thin films
Research output: Contribution to journal › Journal article – Annual report year: 2015 › Research › peer-review

Enabling Flexible Polymer Tandem Solar Cells by 3D Ptychographic Imaging
Research output: Contribution to journal › Journal article – Annual report year: 2014 › Research › peer-review

Enabling high-mobility, ambipolar charge-transport in a DPP-benzotriazole copolymer by side-chain engineering
Research output: Contribution to journal › Journal article – Annual report year: 2015 › Research › peer-review

Enhancement of the chemical stability in confined δ-Bi₂O₃
Research output: Contribution to journal › Letter – Annual report year: 2015 › Research › peer-review

Improving organic tandem solar cells based on water-processed nanoparticles by quantitative 3D nanoimaging
Research output: Contribution to journal › Journal article – Annual report year: 2015 › Research › peer-review

Porous poly(perfluorosulfonic acid) membranes for alkaline water electrolysis
Research output: Contribution to journal › Journal article – Annual report year: 2015 › Research › peer-review

Quantitative 3D X-ray imaging of densification, delamination and fracture in a micro-composite under compression
Research output: Contribution to journal › Journal article – Annual report year: 2015 › Research › peer-review

Reduction of a Ni/Spinel Catalyst for Methane Reforming
Research output: Contribution to journal › Journal article – Annual report year: 2014 › Research › peer-review

Significant Electronic Thermal Transport in the Conducting Polymer Poly(3,4-ethylenedioxythiophene)
Research output: Contribution to journal › Journal article – Annual report year: 2015 › Research › peer-review

Structure and crystallinity of water dispersible photoactive nanoparticles for organic solar cells
Research output: Contribution to journal › Journal article – Annual report year: 2015 › Research › peer-review

Biaxial stretching of poly(L-lactide) tubes for improvement of mechanical properties
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2014 › Research › peer-review

In situ monitoring of structure formation in the active layer of polymer solar cells during roll-to-roll coating
Research output: Contribution to journal › Journal article – Annual report year: 2014 › Research › peer-review

In situ X-ray ptychography imaging of high-temperature CO₂ acceptor particle agglomerates
Research output: Contribution to journal › Journal article – Annual report year: 2014 › Research › peer-review

Morphology Changes of Co Catalyst Nanoparticles at the Onset of Fischer-Tropsch Synthesis
Research output: Contribution to journal › Journal article – Annual report year: 2014 › Research › peer-review

Orientation of PLLA tubes under simultaneous biaxial strain
Research output: Contribution to journal › Conference abstract in journal – Annual report year: 2015 › Research › peer-review

Scalable, ambient atmosphere roll-to-roll manufacture of encapsulated large area, flexible organic tandem solar cell modules
Semi-metallic polymers
Research output: Contribution to journal › Journal article – Annual report year: 2014 › Research › peer-review

Spatial degradation mapping and componentwise degradation tracking in polymer-fullerene blends
Research output: Contribution to journal › Journal article – Annual report year: 2014 › Research › peer-review

Structural instability and electrical properties in epitaxial Er₂O₃-stabilized Bi₂O₃ thin films
Research output: Contribution to journal › Journal article – Annual report year: 2014 › Research › peer-review

Structure–property relationships of oligothiophene–isoindigo polymers for efficient bulk-heterojunction solar cells
Research output: Contribution to journal › Journal article – Annual report year: 2013 › Research › peer-review

The influence of additives on the morphology and stability of roll-to-roll processed polymer solar cells studied through ex situ and in situ X-ray scattering
Research output: Contribution to journal › Journal article – Annual report year: 2014 › Research › peer-review

2D to 3D crossover of the magnetic properties in ordered arrays of iron oxide nanocrystals
Research output: Contribution to journal › Journal article – Annual report year: 2013 › Research › peer-review

Probing the Relation Between Charge Transport and Supramolecular Organization Down to Ångström Resolution in a Benzothiadiazole-Cyclopentadithiophene Copolymer
Research output: Contribution to journal › Journal article – Annual report year: 2013 › Research › peer-review

Ptychographic X-ray Tomography of Silk Fiber Hydration
Research output: Contribution to journal › Journal article – Annual report year: 2013 › Research › peer-review

Dynamical Properties of a Ru/MgAl₂O₄ Catalyst during Reduction and Dry Methane Reforming
Research output: Contribution to journal › Journal article – Annual report year: 2012 › Research › peer-review

High-throughput roll-to-roll X-ray characterization of polymer solar cell active layers
Research output: Contribution to journal › Journal article – Annual report year: 2012 › Research › peer-review

Influence of processing and intrinsic polymer parameters on photochemical stability of polythiophene thin films
Research output: Contribution to journal › Journal article – Annual report year: 2012 › Research › peer-review

Large area, soft crystalline thin films of N,N',N''-trialkyltriazatriangulenium salts with homeotropic alignment of the discotic cores in a lamellar lattice
Research output: Contribution to journal › Journal article – Annual report year: 2012 › Research › peer-review

Removal of Solubilizing Side Chains at Low Temperature: A New Route to Native Poly(thiophene)
Research output: Contribution to journal › Journal article – Annual report year: 2012 › Research › peer-review

Roll-to-roll processed polymer tandem solar cells partially processed from water
Research output: Contribution to journal › Conference article – Annual report year: 2011 › Research › peer-review

Simultaneous multilayer formation of the polymer solar cell stack using roll-to-roll double slot-die coating from water
Research output: Contribution to journal › Conference article – Annual report year: 2011 › Research › peer-review

Aqueous Processing of Low-Band-Gap Polymer Solar Cells Using Roll-To-Roll Methods
Research output: Contribution to journal › Journal article – Annual report year: 2011 › Research › peer-review
A tensile stage for high-stress low-strain fibre studies
Research output: Contribution to journal › Journal article – Annual report year: 2011 › Research › peer-review

Generation of native polythiophene/PCBM composite nanoparticles via the combination of ultrasonic micronization of droplets and thermocleaving from aqueous dispersion
Research output: Contribution to journal › Journal article – Annual report year: 2011 › Research › peer-review

Roll-to-Roll Processing of Inverted Polymer Solar Cells using Hydrated Vanadium(V)Oxide as a PEDOT:PSS Replacement
Research output: Contribution to journal › Journal article – Annual report year: 2011 › Research › peer-review

Thermally reactive Thiazolo[5,4-d]thiazole based copolymers for high photochemical stability in polymer solar cells
Research output: Contribution to journal › Journal article – Annual report year: 2011 › Research › peer-review

Analysing the nanoporous structure of aramid fibres
Research output: Contribution to journal › Journal article – Annual report year: 2010 › Research › peer-review

Combined in situ small and wide angle X-ray scattering studies of TiO2 nano-particle annealing to 1023 K
Research output: Contribution to journal › Journal article – Annual report year: 2010 › Research › peer-review

Low band gap polymers based on 1,4-dialkoxybenzene, thiophene, bithiophene donors and the benzothiadiazole acceptor
Research output: Contribution to journal › Journal article – Annual report year: 2010 › Research › peer-review

Strain-induced internal fibrillation in looped aramid filaments
Research output: Contribution to journal › Journal article – Annual report year: 2010 › Research › peer-review

Biaxially Oriented CdSe Nanorod
Research output: Contribution to journal › Journal article – Annual report year: 2009 › Research › peer-review

Crystallization in diblock copolymer thin films at different degrees of supercooling
Research output: Contribution to journal › Journal article – Annual report year: 2009 › Research › peer-review

Grazing Incidence small and wide angle scattering studies on TiO2 nanorods and nanotubes for photocatalysis
Research output: Contribution to conference › Poster – Annual report year: 2009 › Research

Homeotropic Alignment of a Discotic Liquid Crystal Induced by a Sacrificial Layer
Research output: Contribution to journal › Journal article – Annual report year: 2009 › Research › peer-review

Investigation of optical spacer layers from solution based precursors for polymer solar cells using X-ray reflectometry
Research output: Contribution to journal › Journal article – Annual report year: 2009 › Research › peer-review

Managing Structure and Light Polymer Solar Cells
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 2009 › Research

Nanostructures in High-Performance Polymer Filaments
Research output: Contribution to conference › Poster – Annual report year: 2009 › Research

Small and wide angle in situ scattering with a rotating anode X-ray source
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2009 › Research
Strain-Induced Internal Fibrillation of Aramid Filaments
Research output: Chapter in Book/Report/Conference proceeding – Conference abstract in proceedings – Annual report
year: 2009 › Research

The Influence of Morphology on High-Performance Polymer Field-Effect Transistors
Research output: Contribution to journal › Journal article – Annual report
year: 2009 › Research › peer-review

Applicability of X-ray reflectometry to studies of polymer solar cell degradation
Research output: Contribution to journal › Journal article – Annual report
year: 2008 › Research › peer-review

A simple nanostructured polymer/ZnO hybrid solar cell - preparation and operation in air
Research output: Contribution to journal › Journal article – Annual report
year: 2008 › Research › peer-review

Crystallization of Organic Semiconductor Molecules in Nanosized Cavities: Mechanism of Polymorphs Formation Studied by in Situ XRD
Research output: Contribution to journal › Journal article – Annual report
year: 2008 › Research › peer-review

High-Mobility Aligned Pentacene Films Grown by Zone-Casting
Research output: Contribution to journal › Journal article – Annual report
year: 2008 › Research › peer-review

Order - disorder transitions in poly(3,4-ethylenedioxythiophene)
Research output: Contribution to journal › Journal article – Annual report
year: 2008 › Research › peer-review

Organic thin film transistors with polymer brush gate dielectrics synthesized by atom transfer radical polymerization
Research output: Contribution to journal › Journal article – Annual report
year: 2008 › Research › peer-review

Oriented Poly(dialkylstannane)s
Research output: Contribution to journal › Journal article – Annual report
year: 2008 › Research › peer-review

Simulating X-ray diffraction of textured films
Research output: Contribution to journal › Journal article – Annual report
year: 2008 › Research › peer-review

Structural and chemical investigation of CdSe crystals deposited in a nanoporous sol-gel: Effect of chemistry and defects on photovoltaic properties
Research output: Contribution to journal › Journal article – Annual report
year: 2008 › Research › peer-review

The role of iron in tetrahedrite and tennantite determined by Rietveld refinement of neutron powder diffraction data
Research output: Contribution to journal › Journal article – Annual report
year: 2008 › Research › peer-review

X-ray diffraction study of directionally grown perylene crystallites
Research output: Contribution to journal › Journal article – Annual report
year: 2008 › Research › peer-review

A route to stable nanostructures in conjugated polymers
Research output: Contribution to journal › Journal article – Annual report
year: 2007 › Research › peer-review

Detrimental effect of inert atmospheres on hybrid solar cells based on semiconductor oxides
Research output: Contribution to journal › Journal article – Annual report
year: 2007 › Research › peer-review

High current density and drift velocity in templated conducting polymers
Research output: Contribution to journal › Journal article – Annual report
year: 2007 › Research › peer-review
Influence of 1,2-PB matrix cross-linking on structure and properties of selectively etched 1,2-PB-b-PDMS block copolymers
Research output: Contribution to journal › Journal article – Annual report year: 2007 › Research › peer-review

Nanoscale structural characterization of Mg(NH3)6Cl2 during NH3 desorption: An in situ small angle X-ray scattering study
Research output: Contribution to journal › Journal article – Annual report year: 2007 › Research › peer-review

Self-Assembly of Uracil-PAMAM Dendrimer Systems into Domains of Micrometer Length Scale
Research output: Contribution to journal › Journal article – Annual report year: 2007 › Research › peer-review

Studies of solid state hydrogen storage materials by SAXS and QENS
Research output: Contribution to conference › Paper – Annual report year: 2007 › Research

Tough, semiconducting polyethylene-poly(3-hexylthiophene) diblock copolymers
Research output: Contribution to journal › Journal article – Annual report year: 2007 › Research › peer-review

Dehydrogenation kinetics of pure and nickel-doped magnesium hydride investigated by in situ time-resolved powder X-ray diffraction
Research output: Contribution to journal › Journal article – Annual report year: 2006 › Research › peer-review

Activation of a Cu/ZnO catalyst for methanol synthesis
Research output: Contribution to journal › Journal article – Annual report year: 2006 › Research › peer-review

Designing solution-processable air-stable liquid crystalline crosslinkable semiconductors
Research output: Contribution to journal › Journal article – Annual report year: 2006 › Research › peer-review

Enhancement of charge-transport characteristics in polymeric films using polymer brushes
Research output: Contribution to journal › Journal article – Annual report year: 2006 › Research › peer-review

Molecular-weight dependence of interchain polaron delocalization and exciton bandwidth in high-mobility conjugated polymers
Research output: Contribution to journal › Journal article – Annual report year: 2006 › Research › peer-review

Multicomponent semiconducting polymer systems with low crystallization-induced percolation threshold
Research output: Contribution to journal › Journal article – Annual report year: 2006 › Research › peer-review

Oxygen release and exchange in niobium oxide MEHPPV hybrid solar cells
Research output: Contribution to journal › Journal article – Annual report year: 2006 › Research › peer-review

ASAXS in situ study of particle sintering in a catalyst for methanol synthesis (poster)
Research output: Contribution to conference › Poster – Annual report year: 2005 › Research

Catalysts for alcohol production from natural gas studied by resonant powder diffraction (invited talk)
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 2005 › Research

Co precipitate sites in Cu_{0.90}Co_{0.10} and their relation to magnetoresistance (poster)
Research output: Contribution to conference › Poster – Annual report year: 2005 › Research

Effects of Packing Structure on the Optoelectronic and Charge Transport Properties in Poly(9,9-di-n-octyfluorene-alt-benzothiadiazole)
Field-effect transistors based on self-organized molecular nanostripes
Research output: Contribution to journal › Journal article – Annual report year: 2005 › Research › peer-review

In situ studies of phase transitions in thin discotic films
Research output: Contribution to journal › Journal article – Annual report year: 2005 › Research › peer-review

Interaction of hydrogen with an Mg-Al alloy
Research output: Contribution to journal › Conference article – Annual report year: 2005 › Research › peer-review

Investigation of chromophore-chromophore interaction by electro-optic measurements, linear dichroism, x-ray scattering, and density-functional calculations
Research output: Contribution to journal › Journal article – Annual report year: 2005 › Research › peer-review

New small angle X-ray scattering facility at Risø National Laboratory
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 2005 › Research

New X-ray scattering facility at Risø National Laboratory
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 2005 › Research

Structural dynamics of the competing forces of light and matter
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 2005 › Research

Structural order of self-assembled liquid crystalline solution processable semiconductors (poster)
Research output: Contribution to conference › Poster – Annual report year: 2005 › Research

WAXS simulations
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 2005 › Research

Activation of a Cu/ZnO methanol catalyst studied with in situ ASAXS
Research output: Chapter in Book/Report/Conference proceeding › Book chapter – Annual report year: 2004 › Research › peer-review

Co precipitate sizes in Cu_{0.90}Co_{0.10} and their relation to magnetoresistance (poster)
Research output: Contribution to conference › Poster – Annual report year: 2004 › Research

Dependence of magnetoresistance on the particle size distribution of Co clusters in phase-separated Cu_{90}Co_{10}
Research output: Chapter in Book/Report/Conference proceeding › Book chapter – Annual report year: 2004 › Communication

Interaction of hydrogen with an Mg-Al alloy (poster)
Research output: Chapter in Book/Report/Conference proceeding › Conference abstract in proceedings – Annual report year: 2004 › Research

An in situ cell for small-angle scattering experiments on nano-structured catalysts
Research output: Contribution to journal › Conference article – Annual report year: 2003 › Research › peer-review

Dehydrogenation kinetics of pure and nickel doped magnesium hydrid: In situ time-resolved powder X-ray diffraction
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 2003 › Research
Dehydrogenation kinetics of pure and nickel doped magnesium hydride; In-situ time resolved powder X-ray diffraction
Research output: Contribution to conference › Poster – Annual report year: 2003 › Research

In situ ASAXS investigations of dynamic nano-scale structural changes in a Cu/ZnO based methanol catalyst
Research output: Chapter in Book/Report/Conference proceeding › Book chapter – Annual report year: 2003 › Research › peer-review

Reduction of a nano crystalline heterogeneous catalyst studied by resonant powder diffraction
Research output: Contribution to conference › Conference abstract for conference – Annual report year: 2003 › Research

Projects:

Machine Learning Orchestrated Discovery and Synthesis of Organic Materials
Project: PhD

Roll-to-roll (R2R) coating of 3rd generation solar cells with optimal nano-structure
Project: PhD

Three-dimensional inversion of X-ray phase contrast tomography data
Project: PhD

In situ structural characterization of multilayer formation during large-scale processing of 3rd generation solar cells
Project: PhD

Mesoscale modelling of morphologies, charge carrier generation, and charge transport in third generation solar cells
Project: PhD

High Resolution X-ray Diffraction Contrast Tomography
Project: PhD

Modelling of ultrafast scattering experiments probing electronic dynamics in solar cells
Project: PhD

X-ray phase contrast nano-tomography of 3rd generation solar cells
Project: PhD

Miljøvenlige, organiske solceller med kontrolleret nanostruktur, baseret på partikler i vandig dispersion
Project: PhD

Nano-scale 3D reconstruction of phase contrast X-ray projections
Project: PhD

Structural dynamics of water solvation, studied with theoretical approaches and ultrafast X-ray methods
Project: PhD

In-situ 3D microstructure characterisation of solid oxide fuel cells using X-ray tomography methods
Project: PhD

Roll-to-roll X-ray scattering and analysis
Project: PhD
Inks for fast processing of recyclable polymer solar cells  
Project: PhD

Materials for Energy Production  
Project: PhD

Nanostructured Catalysts  
Project: PhD

Dynamical properties of nano-structured catalysts for methane conversion  
Project: PhD

Characterization of the Microfibrillar Structure of High Performance Polymer Materials  
Project: PhD

Large Area Roll-to-roll processed photocatalytic films for solar energy conversion and storage  
Project: PhD

Polymer photovoltaics - Largecells - R2R-produced polymer solar cells  
Project: PhD

Nano-Structures of Organic-based photovoltaic Cells  
Project: PhD

Danish-Chinese Center for Organic based Photovoltaic Cells with Morphology Control  
Project: Research

Alliance for Imaging and Modelling of Energy Applications  
Project: Research

Activities:

Mapping the charge carrier dynamics in CZTS by time resolved X-ray absorption spectroscopy  
Activity: Talks and presentations › Conference presentations

High resolution ptychographic tomography of soft matter  
Activity: Talks and presentations › Conference presentations