Publications:

Hydrodynamics studies of cyclic voltammetry for electrochemical micro biosensors
Publication: Research - peer-review › Journal article – Annual report year: 2015

Numerical Modeling of Microelectrochemical Systems
Publication: Research › Ph.D. thesis – Annual report year: 2015

Simulating cyclic voltammetry under advection for electrochemical cantilevers
Publication: Research - peer-review › Journal article – Annual report year: 2015

Iso-geometric shape optimization of magnetic density separators
Publication: Research - peer-review › Journal article – Annual report year: 2014

Mathematical Modeling and Dimension Reduction in Dynamical Systems
Publication: Research › Ph.D. thesis – Annual report year: 2014

Planar Parametrization in Isogeometric Analysis
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

State space Newton's method for topology optimization
Publication: Research - peer-review › Journal article – Annual report year: 2014

State-Space Reduced Newton's Algorithm for Topology Optimization
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Introduction to Continuous Optimization
Publication: Research - peer-review › Book – Annual report year: 2014

Newton-type method for the variational discretization of topology optimization problems
Publication: Research - peer-review › Article in proceedings – Annual report year: 2014

Control in the coefficients with variational crimes: Application to topology optimization of Kirchhoff plates
Publication: Research - peer-review › Journal article – Annual report year: 2012

Isogeometric analysis and shape optimization in electromagnetism
Publication: Research › Ph.D. thesis – Annual report year: 2012

ISOGEOMETRIC SHAPE OPTIMIZATION FOR ELECTROMAGNETIC SCATTERING PROBLEMS
Publication: Research - peer-review › Journal article – Annual report year: 2012

Convergence of Cell Based Finite Volume Discretizations for Problems of Control in the Conduction Coefficients
Publication: Research - peer-review › Journal article – Annual report year: 2011

Finite Volumes Discretization of Topology Optimization Problems
Publication: Research - peer-review › Conference abstract for conference – Annual report year: 2011
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<th>Title</th>
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<tr>
<td>Isogeometric Analysis and Shape Optimisation</td>
<td>Conference abstract for conference</td>
<td>2011</td>
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<td>Isogeometric Shape Optimization of Vibrating Membranes</td>
<td>Journal article</td>
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<td>On the sensitivities of multiple eigenvalues</td>
<td>Journal article</td>
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<td>Topology Optimization of Nano-Mechanical Cantilever Sensors Using a C0 Discontinuous Galerkin-Type Approach</td>
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<td>Topology optimization problems with design-dependent sets of constraints</td>
<td>Ph.D. thesis</td>
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<td>A parametric level-set approach for topology optimization of flow domains</td>
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<td>Cell based finite volume discretization of control in the coefficients problems</td>
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<td>Isogeometric Analysis Towards Shape Optimization in Electromagnetics</td>
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<td>Isogeometric Design of Vibrating Membranes</td>
<td>Sound/Visual production (digital)</td>
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<td>Isogeometric Shape Optimization</td>
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<td>Isogeometric Shape Optimization of freely varying shapes</td>
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<td>Topology optimization using a discontinuous Galerkin method</td>
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<td>Adjoint Parameter Sensitivity Analysis for the Hydrodynamic Lattice Boltzmann Method with Applications to Design Optimization</td>
<td>Journal article</td>
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Design of deformation-sensitive flow problems by topology optimization
Publication: Research - peer-review › Article in proceedings – Annual report year: 2009

Design of Piezoelectric Energy Harvesting Systems: A Topology Optimization Approach Based on Multilayer Plates and Shells
Publication: Research - peer-review › Journal article – Annual report year: 2009

Isogeometric Analysis in Structural Analysis
Publication: Research - peer-review › Poster – Annual report year: 2009

Isogeometric Design of Vibrating Membranes
Publication: Research - peer-review › Poster – Annual report year: 2009

Optimal synthesis of tunable elastic wave-guides
Publication: Research - peer-review › Article in proceedings – Annual report year: 2009

Parametrisation In Iso geometric Analysis: A first report
Publication: Research › Report – Annual report year: 2009

Topology optimization for nano-scale heat transfer
Publication: Research - peer-review › Journal article – Annual report year: 2009

Topology optimization of piezoelectric energy harvesting structures and circuits
Publication: Research - peer-review › Article in proceedings – Annual report year: 2009

Optimal synthesis of tunable elastic wave-guides
Publication: Research - peer-review › Journal article – Annual report year: 2008

Projects:

Efficient 3D Shape Optimization
Project: PhD

Mathematical Analysis and Computations for Multiphysics Tomography
Project: PhD

Topology Optimization and Lattice Boltzmann Methods
Project: PhD

Optimization on Manifolds - with applications to shape optimization.
Project: PhD

Mathematical programming methods for large-scale structural topology optimization
Project: PhD

Mathematical Modelling and Optimization of Nano Mechanical Devices
Project: PhD

Adaptive Simulations of Nonlinear Structures in Magnetized Plasma
Project: PhD
Large-Scale Algorithms for Non-Smooth Convex Optimization
Project: PhD

Dimension reduction methods applied to mechanical systems
Project: PhD

Iso-geometric analysis and shape optimization in electromagnetism
Project: PhD

Fluid Optimisation Workflows for Highly Effective Automotive Development Processes
Project

Topology Optimization for Crashworthiness Design Using Approximate Procedures
Project: PhD

Topology Optimization Problems with Design-Dependent Sets of Constraints
Project: PhD