IMTEK Research Day 2016

FIT | December 8th 2016 | 1 - 5 pm

Prof. Dr. Karsten Buse
Optische Systeme

1. Simon Herr
   Laseractive optical frequency converters
2. Richard Wolf
   Integrated whispering-gallery optical frequency converters

Prof. Dr. Christoph Eberl
Mikro- und Werkstoffmechanik

1. Felix Schiebel
   Interface fracture toughness measurements of metallic thin films on silicon
2. Michael Buck
   Experimental High Throughput Screening Using Micro Resonant Experiments as a Fundament for Fatigue Life Time Prediction
3. Thomas Straub
   Experimental Investigation of Crack Initiation in FCC Materials in the High and Very High Cycle Fatigue Regime
Prof. Dr. Ulrich Egert
Biomikrotechnik

1. Samora Okujeni, Ulrich Egert
   **Mesoscale architecture and spontaneous dynamics in neuronal networks**

2. Antje Kilias, Katharina Heining
   **Slowdown of the hippocampal theta clock in mesial-temporal lobe epilepsy**

3. Katharina Heining, Antje Kilias
   **Epilepsy: Small riots might prevent big disasters in a not so devastated hippocampus**

4. Sreedhar Kumar
   **A reinforcement learning based approach to control network activity**

5. Ehsan Safavieh
   **On structural inhomogeneity and dynamical balance in neuronal networks**

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Prof. Dr. Thomas Hanemann
Werkstoffprozesstechnik

1. Dennis Graf
   **Polymer-Ceramic-Composites for 3D-Printing**

2. Bilal Khatri
   **Microstereolithographic structuring and characterization of a composite photopolymerizable material system**

3. Thomas Ruf
   **The role of second phases in the sintering and properties of NaNbO3 ceramics.**

4. Markus Mauck
   **Electrophoretic Deposition of Composite Materials**

5. Thomas Eiselt
   **Development and characterization of adjustable refractive index scattering epoxy acrylate polymer layers**
Feedstock development for the additive manufacturing of ceramic and metallic parts by FDM

A Novel Co-casting Process for Multilayer Ceramics

μ-Reaktor Production using μ-CIM Technology

Process development for the powder injection molding of short fiber reinforced ceramic-matrix-composites

Lithium-ion battery electrolytes based on organic carbonates

Prof. Dr. Matthias Kuhl
Modellierung & Entwurf integrierter Schnittstellenschaltungen

Neural Signal Compression - Analog Data Consolidation

Neural Signal Compression - Spatial Reconstruction

Dr. Andreas Greiner
Simulation

Fluctuating membranes in SYMPLER: A mesoscale model for particle methods

Elektrische Fällung von Metall-Oxid Nanopartikeln in keramischen Mikroreaktoren mit nahe- und überkritischem Wasser

MRIthrough DPD simulation
4  Suleman Shakil  
   Structure preserving model order reduction of FDFD systems containing perfectly matched layer

5  Robert Kamberger  
   MAGRITE - Magnetic resonance microscopy for in vitro Epilepsy

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**Prof. Dr. Yiannos Manoli**
Fritz-Hüttinger-Professur für Mikroelektronik

1  Daniel Sanchez  
   Phase Configurable SSHI Interface for Broadband Piezoelectric Energy Harvesting

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**Prof. Dr. Oliver Paul**
Materialien für die Mikrosystemtechnik

1  Christian Mounir  
   InGaN/GaN Core-Shell Microrods for Efficient Solid State Lighting

2  Suleman Ayub  
   Intracerebral neural probes with integrated LED based light sources for Optogenetic applications

3  Abdalrahman Sayed Herbawi  
   Advanced Intracortical Neural probes with Electronic Depth Control

4  Frederick Pothof  
   Cost-effective, high channel count system for impedance spectroscopy

5  Maurizio Gullo  
   Muscle-Actuated Bio-Hybrid MEMS by Cell Culture and Differentiation on Metamaterial Micro Scaffolds

6  Falk Barz  
   Wafer-level Shellac-based Interconnection Process for Ultrathin Silicon Chips of Arbitrary Shape
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Prof. Dr. Claas Müller
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1 Florian Zeller
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2 Rabih Ktaich
Hydrogen Reactor for PEM Fuel Cell

3 Raimund Rother
Reactive Lamination Process for Optical Devices

4 Lutz Labusch
Fast Electrochemical Impedance Spectroscopy

5 Jing Becker
Fertigungsprozess für monomodige Wellenleiter mit Bragg-Gitter

Prof. Dr. Alexander Rohrbach
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1 Tobias Meinert
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2 Rebecca Michiels
Inducing cell mechanical respnse of filopodia using optical tweezers

3 Felix Jünger
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4 Luis Köbele
Light sheet microscopy using Bessel beams and the STED principle
5 Julian Roth
Probing a bacterial protein chain motor by line-optical trapping and shape-tracking

6 Alexander Rohrbach
Fluctuation based nano-mechanics of living cells and biomimetic systems

7 Alexander Rohrbach
Optical trapping, self-reconstructing laser beams and super-resolution microscopy

Prof. Dr. Jürgen Rühe
Chemie und Physik von Grenzflächen

1 Roland Hönes
Wetting Transitions in Polymer Nanograsses and Restoring Superhydrophobicity by Skin Shedding

2 Maryam Bahrami
Slippery when wet: Wet adhesion and friction on nano/microstructured surfaces

3 Sebastian Anders
Interactions between biosystems and 3D microstructured surfaces

4 Simon Zunker
UV-induced crosslinking in polymers at near visible wavelength

5 Marc Zinggeler
Functional Cryogel Microstructures prepared by Light Induced Crosslinking of a Photoreactive Copolymer

6 Thananthorn Kanokwijitsilp
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7 Martin Körner
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8 Jessica Bean
Microstructured Surfaces for Directed Stem Cell Differentiation

9 Matthias Menzel
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2 Richard Bruch  
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3 Sebastian Urban  
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4 Loic Ledernez  
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5 Fabian Liebisch  
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6 Mohammad Halhouli  
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1 Moritz Stürmer  
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2 Angelina Müller  
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3 Mikel Gorostiaga  
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4 Fralett, Suarez Sandoval  
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1 Fabian Eltermann
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   Verbindungen in der AVT

2 Eike Möller
   Eigenschaften elektrisch leitfähiger Klebeverbindungen für die
   Leistungselektronik

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1 Alvaro Ortiz Perez
   Gauging indoor air quality with inexpensive gas sensing technologies

2 Benedikt Bierer
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3 Louisa Scholz
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4 Dr. Haitao Gao
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5 André Eberhardt
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6 Vincenz Sandfort
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1 Ardavan Shabanian
   Low-cost, high-performance and modular valves and pumps for fluid handling
2 Muhammad bin Mansoor
   Design and optimization of nonlinear oscillators for drag reduction on airfoils
3 Simon Heller
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4 Uwe Pelz
   Smart Energy-Autonomous Micronodes Based on Thermoelectric Generators

Prof. Dr. Margit Zacharias
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1 Jan Laube
   Laboratory for Nanotechnology – Tools and Techniques
2 Holger Beh
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3 Markus Jakob
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4 Max Williams
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6 Rupinder Kaur
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1  Kaustub Banerjee
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2  Simon Kretschmer
   **MEMS endomicroscope for simultaneous white-light microscopy and Optical Coherence Tomography**
3  Pengpeng Zhao
   **Fabrication and characterization of spherical aberration free tunable aspherical lenses**
4  Phuong-Ha Cu-Nguyen, Ziyu Wang
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2  Joana Madjarov
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3  Sabrina Kartmann
   **Automated multi-principle low volume measurement technique for non-contact liquid handling devices**
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   **Disposable pressure and flow sensor and its application in precise liquid dispensing**
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