

MAPEX Symposium 2019

“Excited Materials –
field-induced out-of-equilibrium phenomena”

Monday, 17 June 2019 - Tuesday, 18 June 2019

Rotunde, Cartesium
Enrique-Schmidt-Straße 5, Bremen



Schedule

Monday, 17 June 2019

- 10:00 registration
- 10:30 session 1
- 12:00 lunch at Café Unique
- 13:15 session 2
- 14:50 poster session and coffee break
- 15:30 session 3
- 17:20 end of first day
- 18:30 Dinner, Katzencafe, Schnoor 38

Tuesday, 18 June 2019

- 8:45 registration
- 9:00 session 4
- 10:30 poster session and coffee break
- 11:10 session 5
- 12:10 lunch at Café Unique
- 13:30 session 6
- 15:30 coffee break
- 16:00 end of programme

Venue:

Rotunde, Cartesium
Enrique-Schmidt-Straße 5



Monday, 17 June 2019

session 1

10:30 **Welcome and introduction**

Lucio Colombi Ciacchi

MAPEX Center for Materials and Processes, University of Bremen

10:40 **An excited material: field induced THz emission from spontaneously electrical solids**

David Field

Department of Physics and Astronomy, Aarhus University, Denmark

11:20 **Electron-induced chemistry - Versatile reactions beyond ground state equilibria**

Petra Swiderek

Electron-induced reactions, University of Bremen

12:00 **lunch at Café Unique**

session 2

13:15 **Ultrafast nonadiabatic dynamics in organic photovoltaic materials probed by two-dimensional electronic spectroscopy**

Antonietta de Sio

Ultrafast Nano-Optics, Carl von Ossietzky University of Oldenburg

13:45 **Non-adiabatic excited state molecular dynamics simulations of photo-initiated charge transfer in organic photovoltaic systems"**

Lynn Groß

Bremen Center for Computational Materials Science, University of Bremen

Monday, 17 June 2019

14:15 flashlight presentations 1

- F1 Modifying electronic and optical properties due to excited carriers in atomically thin semiconductors based on transition metal dichalcogenides**
Daniel Erben
Semiconductor Physics, QM³, University of Bremen
- F2 Van der Waals TMDC Heterostructures: electronic structure dependence on number of layers**
Muhammad Sufyan
Department of Physics and Earth Sciences, QM³, Jacobs University, Bremen
- F3 DFT-based understanding of defect structures in MoTe₂ –a first step towards efficient applications of TMDs**
Eric Macke
Hybrid Materials Interfaces, QM³, University of Bremen
- F4 Testing the HSE functional for defects in layered van der Waals materials**
Elham Khorasani
Bremen Center for Computational Materials Science, QM³, University of Bremen
- F5 Analyte-induced electronic response of graphene-based biosensors**
Sebastian Potthoff
Hybrid Materials Interfaces, QM³, University of Bremen
- F6 Combining ab-initio and many-body methods for magnetic nanostructures**
Malte Schüler
Electronic structure of condensed Matter, QM³, University of Bremen
- F7 Phonon renormalization in ab-initio-based lattice models: application to the metallic transition-metal dichalcogenides**
Jan Berges
Electronic structure of condensed Matter, QM³, University of Bremen

14:50 poster session and coffee break

session 3

15:30 **Humidity-driven degradation in power semiconductor devices**

Nando Kaminski

Electrical Power Devices, University of Bremen

16:00 **Dynamic multi-frequency analysis: looking at time-variant processes in electrochemical systems**

Fabio La Mantia

Energy storage and conversion systems, University of Bremen

16:40 **From gold recovery to cancer detection: Dielectrophoresis for material-selective particle separation**

Georg Pesch

Chemical Process Engineering, University of Bremen

17:20 **end of first day**

18:30 **dinner**

Katzencafe, Schnoor 38 (please register)

Tuesday, 18 June 2019

session 4

9:00 **Electronic and optical properties of atomically thin semiconductors based on transition-metal dichalcogenides under high-excitation conditions**

Frank Jahnke

Semiconductor Physics, University of Bremen

9:40 **Lasing in II-VI semiconductor quantum structures**

Alexander Kothe

Semiconductor Optics, University of Bremen

10:00 **flashlight presentations 2**

F8 **Exciton localization in 2D MoS₂ by introducing atomic defects**

Sven Mehrkens, Oleg Gridenco

Semiconductor Optics, University of Bremen

F9 **Optical properties of ZnSe-based microdisks**

Wilken Seemann

Semiconductor Optics, University of Bremen

F10 **Photoswitchable Poly(siloxanes)**

Melanie Walther

Organic Functional Materials, University of Bremen

F11 **Sulphur-induced corrosion of copper**

Michael Hanf

Electrical Power Devices, University of Bremen

F12 **Passive film growth kinetics on carbon steel**

Inqmar Bösing

Chemical Process Engineering, SFB 1232, University of Bremen

F13 **Sorting particles according to material and size with dielectrophoretic particle chromatography**

Jasper Giesler

Chemical Process Engineering, University of Bremen

10:30 **poster session and coffee break**

session 5

- 11:10 **Photoswitchable silicones: effects of azobenzene isomerization in solution and in a free-standing film**
Mathias Schulz
Otto-Diels-Institute, University of Kiel
- 11:50 **Spiropyran based self-reporting micro-fibers from polymer blends**
Ruchira Pereira
Organic Functional Materials, University of Bremen

12:10 **lunch at Café Unique**

session 6

- 13:30 **Welcome address U Bremen Excellence Chair**
Nicola Marzari
Bremen Center for Computational Materials Science, University of Bremen
EPFL Lausanne, Switzerland
- 14:10 **Quantitative STEM: from composition to electrical polarization**
Andreas Rosenauer
Electron Microscopy, University of Bremen
- 14:50 **Mechanisms of laser-induced thermochemical surface smoothing**
Sandro Eckert
BIAS - Bremer Institut für angewandte Strahltechnik GmbH

15:30 **coffee and discussion**

16:00 **end of programme**

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MAPEX Symposium – Excited Materials

Taking place on 17 and 18 June 2019 on the campus of the University of Bremen, the agenda will comprise keynote talks held by invited speakers from MAPEX as well as external experts. Furthermore, short presentations and posters by early career researchers from the MAPEX community will round out the two-days programme.

Please register [here](http://www.uni-bremen.de/mapex)
www.uni-bremen.de/mapex

