

# NANO OPTICS Seminar WS2016

Institute of Applied Physics, Abbe Center of Photonics, Friedrich-Schiller-Universität Jena  
Version: 20.03.2017 – regular updates at [www.iap.uni-jena.de/NANOseminar](http://www.iap.uni-jena.de/NANOseminar)

- 06.10.2016**      **Inverted cone-shaped all-silicon photonic nanoresonators**  
**Thursday**      **Sebastian W. SCHMITT – HZB Berlin & MPL Erlangen**  
11:00, seminar room 1 ACP
- 10.10.2016**      **Laser fabrication of micro and nano periodic structures**  
**Monday**      **Jonas BERZINS – Center for Physical Sciences and Technology, Vilnius**  
11:00, seminar room 1 ACP
- 12.10.2016**      **Plasmonic colors**  
**Wednesday**      **N. Asger MORTENSEN – Technical University of Denmark**  
11:00, auditorium ACP
- 13.10.2016**      **Active tuning of quantum dot emission with dielectric metasurfaces**  
**Thursday**      **Justus BOHN**  
10:00, seminar room 1 ACP
- 01.11.2016**      **Fabrication and characterization of AlGaIn-based ultraviolet photodetectors – Master thesis defense**  
**Tuesday**      **Mohammad TOLLABI MAZRAEHNO – OSRAM, Regensburg**  
11:00, seminar room 1 ACP
- 02.11.2016**      **Disordered chiral plasmonic metasurfaces**  
**Wednesday**      **Sebastian LINB**  
13:00, meeting room 306 ACP
- 08.11.2016**      **Accuracy analysis and error compensation technologies for wavefront reconstruction of large aperture telescopes**  
**Tuesday**      **Chunqi JIN - Changchun Institute of Optics, Fine Mechanics and Physics**  
11:00, seminar room 1 ACP
- 09.11.2016**      **Switchable infrared nanophotonic elements enabled by phase-change materials**  
**Wednesday**      **Thomas TAUBNER – University of Aachen (RWTH)**  
10:30, seminar room 2 ACP
- Simulating condensed matter phenomena with plasmonic waveguide arrays**  
                         **Stefan LINDEN – University Bonn**  
                         15:00, seminar room 2 ACP
- Casimir-Polder forces and quantum friction**  
                         **Kurt BUSCH – Humboldt University Berlin**  
                         16:00, auditorium ACP
- 17.11.2016**      **Limitations and performance of Kerr nonlinear plasmonic nanostructures**  
**Thursday**      **Martijn DE STERKE – University of Sydney**  
15:30, auditorium ACP

ABSTRACT: Photonic devices can be faster and more energy efficient than electronics, but this requires strong nonlinear light-matter interactions. By confining the light well beyond the diffraction limit, plasmonic nanostructures greatly enhance light intensities and hence the nonlinear interactions. The design of high performance nonlinear plasmonic devices is challenging because of optical losses and optical damage. We investigate the limitations of Kerr nonlinear plasmonic waveguides and find the counterintuitive result that the ultimate nonlinear performance depends more strongly on the linear than on the nonlinear properties of the materials, and that the interactions can be enhanced by strong confinement combined with broadband slow-light effects. We can thus identify the limitations and merits compared to conventional all-dielectric structures and point to alternative approaches for performance improvement.

- 21.11.2016**  
**Monday**      **Optimization of 6-channel discrete beam combiners for astronomical interferometry (internship presentation)**  
*Thomas TETER*  
15:00, seminar room 1 ACP
- 22.11.2016**  
**Tuesday**      **Nanobeam photonic crystal cavities (internship presentation)**  
*Gonzalo PALMA VEGA*  
10:30, seminar room 1 ACP
- 28.11.2016**  
**Monday**      **Second harmonic generation in nano-micro hierarchical structures**  
*Yoichi OGATA – Center for Advanced Photonics, RIKEN, JAPAN*  
10:30, meeting room 306 ACP (as video conference session)
- 06.12.2016**  
**Tuesday**      **Experiments on metamaterials exhibiting the parallel Hall effect**  
*Vittoria SCHUSTER – Karlsruhe Institute of Technology*  
15:45, seminar room 1 ACP
- 16.12.2016**  
**Friday**      **Stimulated Brillouin scattering in high index-contrast optical waveguides**  
*Christian WOLFF – University of Technology Sydney*  
12:00, meeting room 207
- Surface domain engineering in Lithium Niobate (Master thesis defense)**  
*Jakob STANICKI*  
13:00, meeting room 207
- 20.12.2016**  
**Tuesday**      **SPDC in waveguides – non-locality and non-degeneracy**  
*Frank SETZPFANDT*  
15:00, seminar room 1 ACP
- 27.01.2017**  
**Friday**      **Temporal manipulation of single photon wavepackets generated by spontaneous parametric down-conversion – Master thesis defense**  
*Pawan KUMAR*  
12:30, seminar room 1 ACP
- 21.02.2017**  
**Tuesday**      **Polarization tomography of second harmonic generation in GaAs metasurfaces**  
*Anna FEDOTOVA*  
11:00, seminar room 1 ACP
- 21.03.2017**  
**Tuesday**      **Nanoparticle enhanced second harmonic generation in Molybdenum Disulfide – Master thesis defense**  
*Paul Douglas HARRISON*  
11:00, seminar room 1 ACP
- 24.03.2017**  
**Friday**      **Theoretical investigation of the optical properties of coupled nano-waveguides – Master thesis defense**  
*Johannes WILDE*  
11:00, auditorium ACP

The seminar rooms and auditorium of the Abbe Center of Photonics are located in the foyer area in the ground floor of the building, Campus Beutenberg, Albert-Einstein-Straße 6, 07745 Jena. The meeting rooms are located in the upper floors of the Abbe Center of Photonics according to the first digit of their number.

The Carl Zeiss seminar room of the Fraunhofer Institute Jena is located at Campus Beutenberg, Albert-Einstein-Straße 7, 07745 Jena. The seminar room of the Institute of Applied Physics is located at in the yellow part of the institute building in the first floor, Campus Beutenberg, Albert-Einstein-Straße 15, 07745 Jena. External guests: please ring at the secretary's office from the main entrance to the institute (phone 47800).

For further information please contact Thomas Pertsch (thomas.pertsch@uni-jena.de, +49 3641 947560).