

ECE SEMINAR

CARSTEN FALLNICH

Professor

Institute of Applied Physics
University of Muenster, Germany

Thursday, May 16, 2019 at 11:00 am

8 St. Mary's St., PHO 339

Faculty Host: Siddharth Ramachandran

Refreshments will be available at 10:45 am

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TAILORING LIGHT PULSES IN SPACE AND TIME WITHIN THIRD-ORDER NONLINEAR PROCESSES AND DEVICES

Abstract:

The Optical Technologies Group at the University of Muenster (in collaboration with the Laser Physics and Nonlinear Optics Group at the University of Twente) is exploiting four-wave mixing for frequency conversion, transverse mode-conversion as well as for label-free and chemically selective coherent Raman scattering (CRS) microscopy. The talk will show recent experimental and theoretical advances on waveguide optics ranging from broadband supercontinuum generation, over fiber-based rapidly tunable ultrafast parametric oscillators (FOPOs), up to ultrafast optical switching and spatio-temporal mode control. Also advances within vibrational spectroscopy will be presented which are based on the above FOPOs, but also on application-specific light detection schemes and adapted CRS methods, e.g., for achieving higher temporal, spectral or spatial resolution.

Biography:

Dr. Carsten Fallnich obtained his PhD in Physics from the University of Kaiserslautern, Germany, in 1995. Thereafter, he joined the SME BremLas Lasertechnik Bremen GmbH as a technical staff member and project manager for ultrafast laser development related to injectors for table-top synchrotrons. Subsequently, he changed position in 1997 to become the Head of Laser Development at the Laserzentrum Hannover e. V., Germany, being involved in precision ultrafast material processing as well as in laser development for the gravitational wave detectors GEO600, LIGO, and VIRGO. After almost being a decade in an industry-related research environment, Dr. Fallnich overtook responsibility for the Optical Technologies Department at the German national metrology institute (PTB) in 2005. Then, in 2006 he took the chance to move back to academics, and is now a professor in the Institute of Applied Physics at the University of Muenster, Germany. Prof. Fallnich's research focuses on ultrafast laser physics, nonlinear optical physics of guided waves, and coherent Raman microscopy

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ESHED OHN-BAR

Humboldt Research Fellow
Max Planck Institute for
Intelligent Systems

Thursday, March 28, 2019 at 11:00 AM

8 St. Mary's St., PHO 339

Faculty Host: Michel Kinsy

Refreshments will be available at 10:45 AM

MACHINES THAT LEARN BY INTERACTING WITH HUMANS



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