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Ion beams: designing metasurfaces and doping nanowires

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Abstract

Ion beam technologies are today routine methods in electronic device manufacturing, e.g. the production of a modern processor needs 20-30 ion implantation steps. On the other hand, the 21st Century is considered by many to be the century of light following a century of developments in electronics. Therefore, I will present several experiments for the manipulation of the optical properties of (nano)materials using ion beams, as well as corresponding strategies for the realization of photonic devices.

16:30 - Monday November 7, 2022

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About the speaker

Carsten Ronning is full professor and director of the Institute of Solid State Physics at the Friedrich Schiller University Jena, Germany. He studied physics at the Universities of Bremen and Konstanz, and completed his PhD thesis entitled “Diamond-like materials prepared via mass selected ion beam deposition” in 1996. After holding a post-doc position at the North-Carolina State University (USA), he performed intense research at the University of Göttingen on thin films, semiconductor physics as well as on semiconductor nanowires. He moved to the Friedrich Schiller University Jena in 2008, where his group is today studying the synthesis, modification and characterization of nano-scale solids, where the optical properties of semiconductor nanowires and metasurfaces are in focus. A variety of different ion beam techniques are used for these proposes, and the basic interaction mechanism of energetic ions with nanomaterials are also investigated. (https://www.nano.uni-jena.de/en).

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