



Contribution ID: 307

Type: **Poster**

GISAXS investigation of highly ordered nanostructures

Monday, 17 September 2018 17:45 (15 minutes)

GISAXS is a powerful tool to provide information about the size, shape and structural ordering of nanostructures. For evaluation of the experimental 2D patterns an appropriate software is needed. In this work we study nanostructures with well defined form and structure factors which will be used as reference samples. The main aim of the studies is to prepare the BornAgain software package to perform fits of 3D models directly to the experimental 2D patterns. Appropriate reference samples were prepared via electron beam lithography in cooperation with MPI (Erlangen). Arrays of cylinders with definite radii, heights and distances were etched in silicon wafers. These arrays of cylinders in turn were arranged in a field with an overall area of about one square millimetre. From such samples 2D interference patterns of the real space structures with periodicities well above one micrometre could be well resolved by lab based GISAXS studies. We present simulations and fits of our measurements using the BornAgain software package including studies of more complex systems as printed active layers of thin film solar cells, nanoparticulate layers on silicon, and 2D ordered aluminium oxide tubes.

Primary author: GRUBER, Wolfgang (Friedrich-Alexander-Universität Erlangen-Nürnberg)

Co-authors: Dr MÍNGUEZ BACHO, Ignacio (Friedrich-Alexander-Universität Erlangen-Nürnberg); Prof. BACHMANN, Julien (Friedrich-Alexander-Universität Erlangen-Nürnberg); Dr BLEY, Karina (Friedrich-Alexander-Universität Erlangen-Nürnberg); Prof. VOGEL, Nicolas (Friedrich-Alexander-Universität Erlangen-Nürnberg); BERLINGHOF, Marvin (Friedrich-Alexander-Universität Erlangen-Nürnberg)

Presenter: GRUBER, Wolfgang (Friedrich-Alexander-Universität Erlangen-Nürnberg)

Session Classification: Poster session 1

Track Classification: P6 Nanomaterials and nanostructures