

## MAPEX Symposium 2017 – “MATERIALS INFORMATICS”

Friday, 15<sup>th</sup> of September 2017

„Haus der Wissenschaft“, Sandstr. 4/5, Bremen, Germany

### Programme

#### Session 1

9:20 – 09:30 **Welcome note**

9:30 – 10:00 **The urgent need for metals engineering ontologies**

Lucio Colombi Ciacchi

*MAPEX speaker*

*Bremen Center for Computational Materials Science, University of Bremen*

10:00 – 10:50 **Computational design and discovery of novel materials**

Nicola Marzari

*National Centre for Competence in Research, EPFL Lausanne, Switzerland*

10:50-11:10 **Coffee break**

#### Session 2

11:10 – 12:00 **Discovering the science of materials through informatics**

Krishna Rajan

*Department of Materials Design and Innovation, University at Buffalo, USA*

12:00 – 12:30 **Flashlight presentations**

P1 **A document-oriented, heterogeneous database model for large experimental data sets**

Timo Kohorst

*Computer Architecture, faculty 03: Mathematics/Computer Science, University of Bremen*

P2 **Logistical control for material testing in high-throughput systems**

Alexander Bader

*Bime - Bremen Institute for Mechanical Engineering*

*Faculty 04: Production Engineering, University of Bremen*

P3 **Inverse methods for the design of new materials**

Daniel Otero Baquer

*Center for Industrial Mathematics,*

*Faculty 03: Mathematics/Computer Science, University of Bremen*

P4 **Knowledge-enabled Machine Learning in Material Science**

Mareike Picklum

*Institute for Artificial Intelligence,*

*Faculty 03: Mathematics/Computer Science, University of Bremen*

P5 **Computational Optical Metrology (COMet)**

Thorsten Klein

*BIAS – Bremer Institut für angewandte Strahltechnik*

12:30-13:30 Lunch break and poster session

Session 3

13:30 – 14:20 **Materials informatics and big data: realization of 'fourth paradigm' of science in materials science**

Ankit Agrawal

*Department of Electrical Engineering and Computer Science,  
Northwestern University, USA*

14:20 – 15:10 **Ontology Engineering and Ontological Data Access**

Carsten Lutz

*Theory of Artificial Intelligence*

*Faculty 03: Mathematics/Computer Science, University of Bremen*

15:10-15:30 Coffee break

Session 4

15:30 – 16:20 **High-throughput with particle technology**

Lutz Mädler

*Process and Chemical Engineering,  
Stiftung Institut für Werkstofftechnik Bremen - IWT*

16:20 – 17:00 Flashlight presentations

P6 **3D Mosaik - an optical measurement system for 3D textile texture analysis**

Andrea Miene

*Faserinstitut Bremen e.V. (FIBRE)*

P7 **Internal structuring in additively manufactured metal parts: Theoretical study on potentials & approaches based on the binder jetting process**

D. Lehmus<sup>1</sup>, A. v. Hehl<sup>2</sup>

*<sup>1</sup>Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM*

*<sup>2</sup>Stiftung Institut für Werkstofftechnik Bremen - IWT*

P8 **Material informatics, another view: Computing within materials - the future of smart materials**

Stefan Bosse

*Robotics, Faculty 03: Mathematics/Computer Science, University of Bremen*

P9 **NMR imaging for characterizing mass transport and reaction processes in porous materials**

M. Mirdrikvand, E. Küstermann, W. Dreher

*in vivo NMR, Faculty 02: Chemistry, University of Bremen*

P10 **Increasing the value of scientific data – data sharing with InfoSys**

Stefan Wellsandt

*BIBA - Bremer Institut für Produktion und Logistik, University of Bremen*

17:00-18:00 Poster session and snacks

20:00 Dinner at restaurant Jürgenshof