Announcement

Winter Semester 2023/24

Universität Stuttgart
Institute for Materials Science

Prof. Dr. Joachim Bill
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Advanced Science Seminar
Bioinspired Materials and Systems

Within the scope of the seminar, students would not only get an overview of the advantages, fabrication and potential applications of bioinspired materials, but also acquire the skill of planning and presenting a scientific talk.

Preliminary meeting (for the topics offered by Prof. Bill)

Date: 18 October 2023, 09:00 AM - 11:00 AM

Venue: Lecture hall **2R4**, Heisenbergstraße 3, 70569 Stuttgart

Seminar Meetings

Date: Wednesdays, 09:00 AM - 01:00 PM

Venue: Lecture hall **2R4**, Heisenbergstaße 3, 70569 Stuttgart

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Seminar Topics

The topics will be assigned on a "first come-first serve basis". Please use the following weblink to choose a topic: https://terminplaner.dfn.de/seminar23

1. Bioinspired structural design of advanced stimuli-responsive materials as actuators for small-case robotics (*Nature*, **2015**, *521*, 467-475).
2. Biosensors (*Nanomaterials*, **2020**, *10*, 501).
3. Hierarchically-structured inverse opals as porous materials with functional properties (*J. Mater. Chem. A.* **2017**, *5* 17111-17134).
4. Enzyme-based electrochemical sensors for diagnostic applications (*Chem. Soc. Rev.* **2020**, *49*, 7671-7709).
5. How to produce magnetotactic microalgae? (*Adv. Biosys.* **2018** 1800039).
6. Hybrid polyelectrolyte membranes for fuel cell applications (*Int. J. Hydrog. Energy.* **2017**, *42*, 486-495).
7. Membrane materials for water purification: design, development, and applications (*Nat Rev Mater,* **2016,** *1,* 16018**).**
8. Nanogenerators and molecular motors to fuel macroscopic materials (*Matter*, **2020**, *3*, 355-370).
9. Wastewater cleaning using microalgae (*ACS Sustainable Chem. Eng.* **2014**, *2*, 130-137).