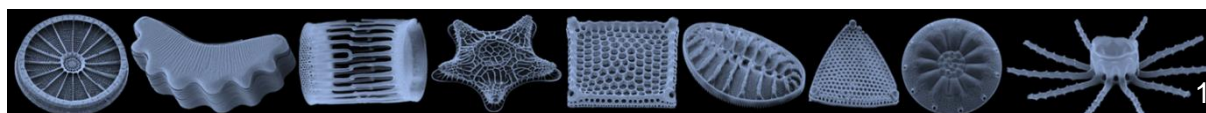


## SCIENTIFIC PROGRAM

## Monday, March 30

09:00 – 09:10 am	<b>Welcome remarks</b> (Nils Kröger)
	<b>CELLULAR AND BIOMOLECULAR PLAYERS</b>
09:10 – 09:40 am	<b>Steve Weiner</b> <i>Mineralization Pathways in Biology</i>
09:40 – 10:10 am	<b>Keren Kahil</b> <i>Characterization of calcium ion cellular pathways in sea urchin larvae</i>
10:10 – 10:30 am	<b>Christoph Heintze</b> <i>Morphological and molecular characterization of the valve silica deposition vesicle in diatoms</i>
	<b>Coffee break</b>
11:00 – 11:30 am	<b>Colin Brownlee</b> <i>Biomining phytoplankton: cellular mechanisms, roles, regulation and evolution</i>
11:30 – 11:50 am	<b>Michael Schlierf</b> <i>Tba</i>
11:50 – 12:20 pm	<b>Ingrid Weiß</b> <i>Enzymatic requirements for biologically controlled chitin mineralization</i>
	<b>Lunch and Poster Session 1</b>
02:30 – 03:00 pm	<b>Nico Sommerdijk</b> <i>Studying collagen mineralization in living and non-living in vitro systems</i>
03:00 – 03:30 pm	<b>Eli Sone</b> <i>Interplay of matrix and solution molecules in collagen mineralization</i>
03:30 – 03:50 pm	<b>Marc Baldus</b> <i>High-sensitivity solid-state NMR applied to diatom biosilica in situ</i>
	<b>Coffee break</b>
04:20 – 04:40 pm	<b>Andrej Shevchenko</b> <i>Tba</i>
04:40 – 05:00 pm	<b>Nils Kröger</b> <i>Conserved and species-specific features in biosilica-associated proteins from diatoms</i>
05:00 – 05:30 pm	<b>Frédéric Marin</b> <i>Intrinsically-disordered proteins and their function in CaCO<sub>3</sub> biomineralization: a change in paradigm?</i>
05:30 – 06:00 pm	<b>Lia Addadi</b> <i>Organisms manipulate light with nano-scale crystal mirrors</i>



**Tuesday, March 31**

### BIOMINERAL STRUCTURES AND PROPERTIES

- 09:00 – 09:30 am **Pupa Gilbert**  
*Biom mineralization by amorphous particle attachment in the last 550 million years*
- 09:30 – 10:00 am **Igor Zlotnikov**  
*Tertiary structure of silicatein and its role in sponge spiculogenesis*
- 10:00 – 10:20 am **Carl Modes / Szabolcs Horvát**  
*Complex Networks in Biomineralized Architecture*
- Coffee break**
- 10:50 – 11:20 am **Assaf Gal**  
*The nanoscale environment of coccolith formation*
- 11:20 – 11:50 am **Anne Jantschke**  
*Calcite Morphogenesis in the outer Matrix of calcareous Dinoflagellates*
- 11:50 – 12:10 pm **Thomas Heine**  
*Speciation of precursor minerals by combined experimental-theoretical characterization*

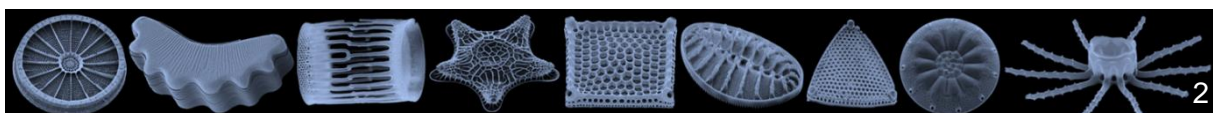
### Lunch and Poster Session 2

- 02:10 – 02:40 pm **Julian Gale**  
*What can simulation tell us about biomineralisation?*
- 02:40 – 03:10 pm **Boaz Pokroy**  
*Tba*
- 03:10 – 03:40 pm **Luca Bertinetti**  
*Tba*

### Coffee break

### ORGANIC-INORGANIC INTERFACE

- 04:10 – 04:40 pm **Lucio Colombi Ciacchi**  
*Elucidation of structural details of bio-hybrid materials interfaces at the atomic level*
- 04:40 – 05:10 pm **John Harding**  
*Understanding the mechanisms of biomineralization: A grand challenge*
- 05:10 – 05:40 pm **Gary Drobny**  
*Heterogeneity of Protein Structure on Material Surfaces Studied by Solid State NMR, Solution NMR, and Molecular Simulations*
- 07:30 pm **Conference dinner at**  
Sophienkeller (Taschenberg 3, 01067 Dresden)



## Wednesday, April 1

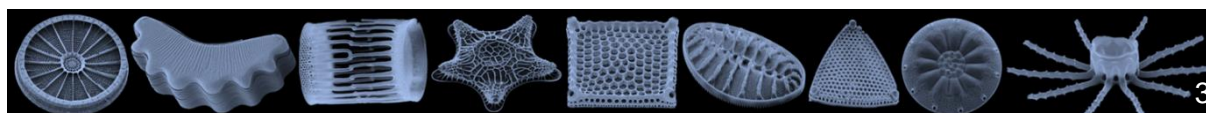
## ORGANIC-INORGANIC INTERFACE

- 09:00 – 09:30 am **Carole Perry**  
*Model studies of silica and its interface with biomolecules and something on new methods*
- 09:30 – 09:50 am **Gianaurelio Cuniberti**  
*Modelling of Organic-Inorganic Interactions relevant to Biosilica Formation*
- 10:00 – 10:20 am **Eike Brunner**  
*Solid-state NMR of diatom biosilica*
- Coffee break**
- 10:50 – 11:20 am **Asher Schmidt**  
*Molecular-level insights to principles underlying biomineralization and biomimetic pathways by solid state NMR*
- 11:20 – 11:50 am **Lara Estroff**  
*Mineral-Matrix Fingerprints in Pathological Mineralization: Multimodal study of microcalcifications in breast cancer*
- 11:50 – 12:20 pm **Jim de Yoreo**  
*Engineering the protein-mineral interface*

## LUNCH and Poster Session 3

## MOLECULAR GENETIC ANALYSIS

- 02:30 – 03:00 pm **Daniel Jackson**  
*The Great Pond snail *Lymnaea stagnalis* as a molluscan model for biomineralization*
- 03:00 – 03:30 pm **Ali Miserez**  
*Die Casting Biomineralization of the Mantis Shrimp *Dactyl Club**
- 03:30 – 04:00 pm **Smadar Ben-Tabou de-Leon**  
*Biological control of sea urchin larval skeletogenesis*
- Coffee break**
- 04:30 – 05:00 pm **Arash Komeili**  
*Biomineralization of iron in bacterial organelles*
- 05:00 – 05:20 pm **Stefan Görlich**  
*Towards genetically controlled reversible switching of diatom biosilica morphology*
- 05:20 – 05:40 pm **Uwe Maier**  
*Tba Expression and targeting of frustule-related proteins in the diatom *Thalassiosira pseudonana**
- 05:40 – 06:10 pm **André Scheffel**  
*Towards molecular genetic analysis of coccolith formation*



## Thursday, April 2

	SYNTHETIC SYSTEMS
09:00 – 09:30 am	<b>Dirk Schüler</b> <i>Towards synthetic biology of bacterial magnetosome biomineralization</i>
09:30 – 09:50 am	<b>Thorsten Mascher</b> <i>SporoBeads of Bacillus subtilis as a heterologous platform for biomineralization</i>
09:50 – 10:10 am	<b>Ekta Kumari</b> <i>Genetically programmed regioselective immobilization of enzymes in biosilica microparticles</i>
10:10 – 10:40 am	<b>Stefan Kaskel</b> <i>Biomineral functionalization by nanoporous solids: From zeolites to metal organic frameworks</i>
	<b>Coffee break</b>
11:10 – 11:40 am	<b>Fiona Meldrum</b> <i>Tba</i>
11:40 – 12:10 am	<b>Derk Joester</b> <i>Crystallization Pathways of ACC in Confinement: Size Effects, SpSM30B/C as a Polymorph Switch and a potential Classical-to-Non-Classical Transition</i>
12:10 – 12:40 pm	<b>Helmut Cölfen</b> <i>Bio-inspired Calcium Phosphate Systems</i>
	<b>Lunch</b>
02:10 – 02:30 pm	<b>Claudia Steinem</b> <i>An in vitro approach: How membranes contribute to the biomineralization process in diatoms</i>
02:30 - 02:50 pm	<b>Armin Geyer</b> <i>Silaffins - Synthesis and properties</i>
02:50 – 03:10 pm	<b>Stefan Diez</b> <i>Towards reconstituting mineral morphogenesis in vitro: Transport and processing of membrane-enclosed compartments by molecular motors</i>
03:10 – 03:30 pm	<b>Julian Thiele</b> <i>Polymer microgels with tailored physicochemical and mechanical properties as experimental platform for cell-free biosynthesis</i>
03:30 – 03:35 pm	<b>Closing remarks</b> (Nils Kröger)

