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Qualifications

Habilitation, University of Regensburg
Award Date: 31 Dec 2001
Biochemistry, PhD, University of Regensburg
Award Date: 31 Dec 1995
Chemistry, Diplom, University of Regensburg
Award Date: 31 Dec 1991

Employment

Academic Staff

Chair of Biomimetic Materials
Technische Universität Dresden
1 Jan 2013 → present

Academic Staff

Faculty of Chemistry and Food Chemistry
Technische Universität Dresden
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Full Professor

Georgia Institute of Technology
Atlanta, United States
1 Jan 2011 → 1 Jan 2012

Junior Professor

Georgia Institute of Technology
Atlanta, United States
1 Jan 2005 → 1 Jan 2011

Research Group Leader

University of Regensburg
D-93040 Regensburg, Germany
1 Jan 2001 → 1 Jan 2004

PostDoc

University of Melbourne
Australia
1 Feb 1998 → 1 Aug 1998

PostDoc

University of Regensburg
D-93040 Regensburg, Germany
1 Jan 1996 → 1 Jan 2001

Research outputs

The molecular basis for pore pattern morphogenesis in diatom silica

Heintze, C., Babenko, I., Suchanova, J. Z., Skeffington, A., Friedrich, B. M. & Kröger, N., 2 Dec 2022, In: Proceedings of the National Academy of Sciences of the United States of America. 119, 49, e2211549119.

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Structure and Morphogenesis of the Frustule

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The role of organic matrices in biomineralization

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Computational analysis of the effects of nitrogen source and *sin1* knockout on biosilica morphology in the model diatom *Thalassiosira pseudonana*

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Genetically Programmed Regioselective Immobilization of Enzymes in Biosilica Microparticles

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An intimate view into the silica deposition vesicles of diatoms

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Chitin synthase localization in the diatom *Thalassiosira pseudonana*

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Identification of proteins in the adhesive trails of the diatom *Amphora coffeaeformis*

Lachnit, M., Buhmann, M. T., Klemm, J., Kroeger, N. & Poulsen, N., 9 Sep 2019, In: Philosophical Transactions of the Royal Society B: Biological Sciences. 374, 1784, 9 p., 20190196.

Control of biosilica morphology and mechanical performance by the conserved diatom gene *Silicanin-1*

Görlich, S., Pawolski, D., Zlotnikov, I. & Kroeger, N., 28 Jun 2019, In: Communications biology. 2, 8 p.

Influence of silica architecture on the catalytic activity of immobilized glucose oxidase

Begum, G., Oschatz, C., Oschatz, M., Kaskel, S., Brunner, E. & Kroeger, N., Mar 2019, In: Bioinspired, Biomimetic and Nanobiomaterials. 8, 1, p. 72-80 9 p.

Reconstituting the formation of hierarchically porous silica patterns using diatom biomolecules

Pawolski, D., Heintze, C., Mey, I., Steinem, C. & Kroeger, N., Oct 2018, In: Journal of Structural Biology. 204, 1, p. 64-74 11 p.

Immobilization of Proteins on Diatom Biosilica

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Complex-shaped microbial biominerals for nanotechnology

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Isolation and biochemical characterization of underwater adhesives from diatoms

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NITRATE AND CARBONATE CONCENTRATION FOR HIGH GLUCOSE CONTENT IN MICROALGAE

Kroger, N., Poulsen, N. & Miller, S. J., 30 Jan 2014, IPC (International Patent Classification) C12M 1/ 00 A I, Patent No. WO2014018338, Priority date 23 Jul 2012, Priority No. US201213556048

A Tyrosine-rich Cell Surface Protein in the Diatom *Amphora coffeaeformis* identified through Transcriptome Analysis and Genetic Transformation

Buhmann, M. T., Poulsen, N., Klemm, J., Kröger, N. & Kennedy, M. R., 2014, In: *PLoS ONE*.

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Silica Immobilization of an Enzyme through Genetic Engineering of the Diatom *Thalassiosira pseudonana*

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Rapid, room-temperature formation of crystalline calcium molybdate phosphor microparticles via peptide-induced precipitation

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Bioenabled synthesis of rutile (TiO₂) at ambient temperature and neutral pH

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MOLECULAR GENETIC MANIPULATION OF THE DIATOM THALASSIOSIRA PSEUDONANA (BACILLARIOPHYCEAE)

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The Molecular Basis of Diatom Biosilica Formation

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