Name: Alexander Böker
Date of birth: 17.09.1973
Affiliation: Fraunhofer IAP

## Education and Professional Experience

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| Feb. 2015 - present | Director of Fraunhofer IAP; Full Professor, Chair of Polymeric Materials and Polymer Technologies, University of Potsdam |
| 2007 | Deputy Scientific Director of DWI Aachen; Full Professor, Chair of Macromolecular Materials and Surfaces, RWTH Aachen University |
| Dec. 2006 | Associate Professor, University of Bayreuth |
| 2004 - 2006 | Assistant Professor, University of Bayreuth |
| 2002 - 2004 | Postdoc at University of Massachusetts, USA (Prof. T.P. Russell) |
| 1999 - 2002 | Ph.D. studies at the University of Bayreuth (Prof. G. Krausch, Prof. A.H.E. Müller, Universität Bayreuth) |
| 1998 - 1999 | Diploma Thesis (Prof. R. Stadler, Prof. B.A. Wolf, Universität Mainz; Dr. K. Reihs, Bayer AG) |
| 1993 – 1998 | Study of Chemistry at the Johannes Gutenberg-Universität Mainz and Cornell University, USA |

## Fellowships and Honors

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| 2015 | ERC Consolidator Grant |
| 2006 | Lichtenberg-Fellowship of the Volkswagen-Stiftung |
| 2006 | Emmy-Noether-Fellowship of the DFG |
| 2005 | Science Prize of the University of Bayreuth |
| 2003-2004 | Fellowship by Max Kade-Foundation |
| 1999-2001 | Kekulé-Fellowship of the Fonds der chemischen Industrie (VCI) |

## Research Expertise

Electrostatic interactions to direct nanoparticle self-assembly - Glycopolymer brushes for specific protein binding - Chemically modified proteins for surface functionalization - Protein-polymer conjugates for self-assembled hybrid membranes - Nanoparticle-polymer conjugates - Synthesis of particles with photoresponsive self-assembly behavior - Physical hydrogels for biomedical applications – block copolymers in electric fields

Selected Publications (recent)

a) Publications with peer review

- Zimmermann, M.; John, D.; Grigoriev, D.; Puretskiy, N.; **Böker, A.** "From 2D to 3D patches on multifunctional particles: how microcontact printing creates a new dimension of functionality" *Soft Matter*, **2018**, *14*, 2301.

- Charan, H.; Kinzel, J.; Glebe, U.; Anand, D.; Mirzaei Garakani, T.; Zhu, L. L.; Bocola, M.; Schwaneberg, U.; **Böker, A.** "Grafting PNIPAAm from beta-barrel shaped transmembrane nanopores" *Biomaterials*, **2016**, *107*, 115.
- Jutz, G.; van Rijn, P.; Miranda, B. S.; **Böker, A.** "Ferritin: A Versatile Building Block for Bionanotechnology" *Chemical Reviews*, **2015**, *4*, 1653.
- van Rijn, P.; Tutus, M.; Kathrein, C.; Mougin, N. C.; Park, H.; Hein, C.; Schürings, M. P.; **Böker, A.** "Ultra-Thin Self-Assembled Protein-Polymer Membranes: A New Pore Forming Strategy" *Adv. Funct. Mater.*, **2014**, *24*, 6762.
- van Rijn, P.; Park, H.; Özlem Nazli, K.; Mougin, N. C.; **Böker, A.** "Self-Assembly Process of Soft Ferritin-PNIPAAm Conjugate Bionanoparticles at Polar–Apolar Interfaces" *Langmuir*, **2013**, *29*, 276.
- Mougin, N. C.; van Rijn, P.; Park, H.; Müller, A. H. E.; **Böker, A.** "Hybrid Capsules via Self-Assembly of Thermoresponsive and Interfacially Active Bionanoparticle–Polymer Conjugates" *Adv. Funct. Mater.* **2011**, *21*, 2470.

- Hiltl, S.; **Böker, A.** "Wetting Phenomena on (Gradient) Wrinkle Substrates" *Langmuir*, **2016**, *32*, 8882.
- Pretzl, M.; Schweikart, A.; Hanske, C.; Chiche, A.; Zettl, U.; Horn, A.; **Böker, A.**; Fery, A. "A Lithography-Free Pathway for Chemical Microstructuring of Macromolecules from Aqueous Solution Based on Wrinkling" *Langmuir*, **2008**, *24*, 12748.

- Pester, C. W.; Liedel, C.; Ruppel, M.; **Böker, A.** "Block copolymers in electric fields" *Progress in Polymer Science*, **2017**, *64*, 182.
- Olszowka, V.; Hund, M.; Kuntermann, V.; Scherdel, S.; Tsarkova, L.; **Böker, A.** "Electric Field Alignment of a Block Copolymer Nanopattern: Direct Observation of the Microscopic Mechanism" *ACS Nano*, **2009**, *3*, 1091.