

Cornelia Isabella Angela von Baeckmann

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ORCID = [0000-0002-2337-9063](https://orcid.org/0000-0002-2337-9063)

Date of Birth: **22.06.1993 (Vienna)**

EDUCATION and WORK

02/2019	Research stay at the Institute for Inorganic Chemistry II <i>University of Ulm, Germany (Prof. Mika Lindén)</i>
10/2016 – present	PhD in Chemistry Supervisor: Univ.-Prof. Dr. Freddy Kleitz Project: „Designed Synthesis and Functionalization of Mesoporous Organic-Inorganic Hybrid Materials for Drug Delivery Application“, Institute of Inorganic Chemistry and Functional Materials, <i>University of Vienna</i>
01/2016	Research stay at the Centre of Molecular and Macromolecular Studies, <i>Polish Academy of Sciences, Lodz, Poland (Prof. Piorkowska)</i>
02/2015 – 10/2020	University Assistant / Teaching Assistant in laboratory courses <i>University of Vienna</i>
09/2015 – 01/2017	Tutor in the undergraduate lab courses, <i>University of Vienna</i>
10/2014 – 06/2016	MSc in Chemistry Master thesis supervisor: Prof. Dr. Alexander Bismarck Project: „The role of high-pressure crystallization on the strength of γ -Polypropylene“, Institute of Materials Chemistry & Research <i>University of Vienna</i>
07/2014 – 09/2014	Research project; Cooperation between Laboratorium für Kunststofftechnik (LKT), Faculty of Physics (Prof. M. Zehetbauer) and Faculty of Chemistry (Prof. A. Bismarck), <i>University of Vienna</i> Financed by FFG (talents: FEMTECH working for students)
06/2012 – 02/2014	Coworker at the project “Check-it”; Division of Medical-Chemical Laboratory Diagnostics, Vienna General Hospital
10/2011 – 06/2014	BSc in Chemistry Bachelor thesis supervisor: Ao. Univ.-Prof. Dr. Margit Chichna-Markl, Institute of Analytical Chemistry, <i>University of Vienna</i>
09/2007 – 06/2011	AHS Matura (passed with distinction) Oberstufenrealgymnasium Antonkriegergasse
07/2007 – 08/2007	Internship at Dr. Susanne Barth-Ruth veterinary practice in Vienna

ADDITIONAL QUALIFICATION

04/2017 – 10/2020	Authorized recipient for toxics at the Institute of Inorganic Chemistry and Functional Materials, <i>University of Vienna</i>
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SCHOLARSHIPS & PRIZES

10/2017	Dr. Maria Schaumayer Stiftung, recognition award for the master thesis
06/2017	Picture award: "My research in one picture", audition price
08/2016	uni:docs fellowship program University of Vienna (rejected due to open PhD position)

MEDIA APPEARANCE

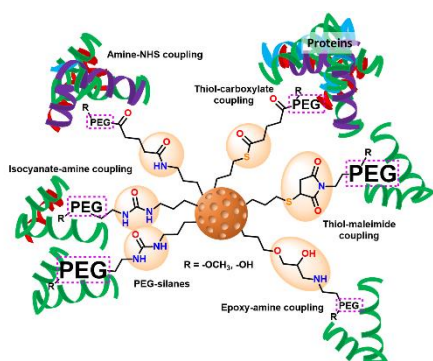
- 27.03.2018; **Interview:** Schrödingers Katze, Der Österreichische Wissenschaftsblog: Wie die Chemotherapie revolutioniert werden soll. <https://www.schroedingerskatze.at/krebs-medikament/>

SELECTED INTERNATIONAL CONFERENCES AND MEETINGS

- 03/2019 6th International Conference on Multifunctional, Hybrid and Nanomaterials (talk) Sitges (Spain)
- 03/2019 31. Deutsche Zeolith-Tagung (talk) Dresden (Germany)
- 09/2018 Central & Eastern European Bruker User Meeting (poster) Vienna (Austria)
- 02/2018 30. Deutsche Zeolith-Tagung (poster) Kiel (Germany)
- 09/2017 17th Austrian Chemistry Days (poster) Salzburg (Austria)
- 03/2016 Colloquium on Fatigue Mechanisms (organization team) Vienna (Austria)
- 09/2015 EUChemS (poster) Catania (Italy)
- 03/2015 International Conference on Deformation, Yield and Fracture of Polymers (2 posters) Kerkrade (Netherlands)
- 09/2014 6th International Conference on Polymer Behavior (poster and organization team) Vienna (Austria)

Research achievements

- C. von Baeckmann, H. Kählig, M. Lindén, F. Kleitz;



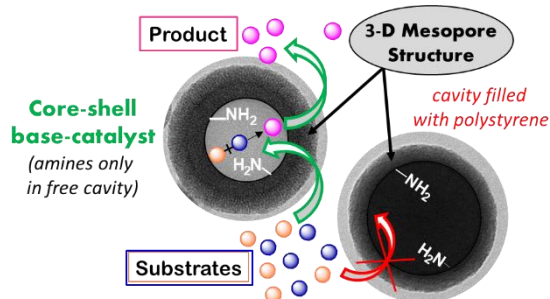
„On the Importance of the Linking Chemistry for the PEGylation of Mesoporous Silica Nanoparticles”

J. Colloid Interface Sci. **2021**, 589, 453-461.

DOI: 10.1016/j.jcis.2020.12.004

It demonstrates unambiguously the major impact that the linkage chemistry of PEGylated mesoporous silica nanoparticles (MSNs) has on the dynamics of the protein layer formed in biological fluids.

- C. von Baeckmann, C. Eisen, H. Kählig, P. Guggenberger, F. Kleitz;



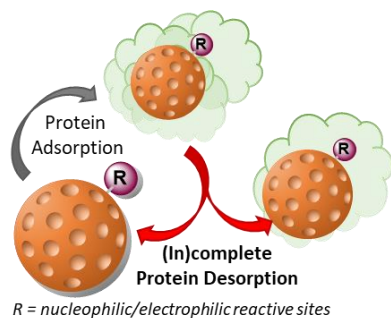
„Facile Synthesis of Spartially-Functionalized Core-Shell Nanocatalysts with 3-D Mesopore Structure”

ChemCatChem **2021**, 13, 1-7.

DOI: 10.1002/cctc.202001737

New particles exhibiting a mesoporous shell with a 3-D pore structure and precisely controlled functionalization of the particles (with amines) was achieved. The sole presence of catalytic active amine groups in the inner void of the particles was effectively demonstrated through Knoevenagel condensation reactions.

3. C. von Baeckmann, H. Kählig, M. Lindén, F. Kleitz;



„Irreversible Adsorption of Serum Proteins onto Nanoparticles”

Part. Part. Syst. Charact. **2021**, 38, 2000273.

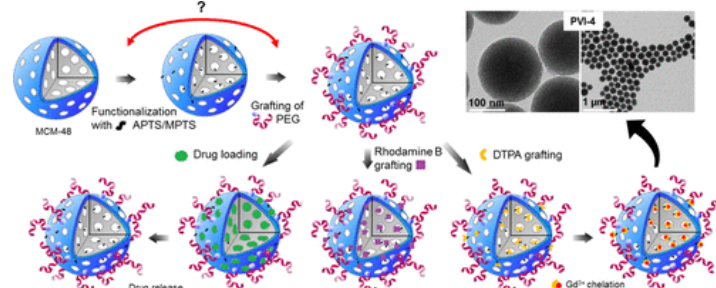
DOI: 10.1002/ppsc.202000273

R = nucleophilic/electrophilic reactive sites

The importance of the detailed characterization of the serum protein corona formed around nanoparticles is highlighted. Irreversible protein adsorption is observed in some cases, underlining the need to carefully analyze the serum proteins strongly bonded on the nanoparticles.

4. C. von Baeckmann, R. Guillet-Nicolas, D. Renfer, H. Kählig, F. Kleitz;

“A Toolbox for the Synthesis of Multifunctionalized Mesoporous Silica Nanoparticles for Biomedical Applications”



ACS Omega **2018**, 3, 17496–17510.

DOI: 10.1021/acsomega.8b02784

Insights into the efficient design of (multi)functional mesoporous silica nanoparticles, especially about the crucial role played by the sequence of step-by-step functionalization methods aiming to produce multipurpose and stable bio-platforms.

5. C. von Baeckmann, H. Wilhelm, F. Spieckermann, S. Strobel, G. Polt, P. Sowinski, E. Piorkowska, A. Bismarck, M. Zehetbauer;

“The influence of crystallization conditions on the macromolecular structure and strength of γ -polypropylene”

Thermochimica Acta **2019**, 677, 131–138.

DOI: 10.1016/j.tca.2019.03.007

6. M. Kohout, Š. Hovorka, J. Herciková, M. Wilk, P. Sysel, P. Izák, C. von Baeckmann, J. Pícha, P. Frühauf;

“Evaluation of silica from different vendors as the solid support of anion-exchange chiral stationary phases by means of preferential sorption and liquid chromatography”

Journal of Separation Science **2019**, 42(24), 3653–3661.

DOI: 10.1002/jssc.201900731

7. P. Honegger, M. Schmollngruber, G. Hagn, O. Baig, C. von Baeckmann, O. Steinhauser, C. Schröder;

“Molecular dynamics simulation of aqueous 1-dodecyl-3-methylimidazolium chloride: Emerging micelles”

Journal of Molecular Liquids **2018**, 272, 766–777.

DOI: 10.1016/j.molliq.2018.09.110

8. E. Schafner, M. B. Kerber, F. Spieckermann, T. Fischer, R. Schuster, C. von Baeckmann;

“*In Situ* X-Ray Synchrotron Profile Analysis During High Pressure Torsion of Ti“

In: Solanki K., Orlov D., Singh A., Neelameggham N. (eds)

Magnesium Technology **2017**. The Minerals, Metals & Materials Series. Springer, Cham.

DOI: 10.1007/978-3-31*9-52392-7_89

Further pending publications:

- Cornelia von Baeckmann, Guilherme M. D. M. Rubio, Hanspeter Kählig, Michael Reithofer and Freddy Kleitz;
“Evaporation induced self-organization of small peptide-conjugated silica nanoparticles”
To be submitted
 - Cornelia von Baeckmann, Patrick Guggenberger, Alessandra Riva, David Berry and Freddy Kleitz;
“Bioconjugation of Inulin on Mesoporous Silica Nanoparticles and their Interaction with Gut Bacteria”
Manuscript in Preparation
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Statement to current status of the PhD:

Dear Reviewers,

Due to the current Covid-19 situation, I was not able to defend my PhD-thesis so far. However, the thesis is fully written and currently under revision by my supervisor Prof. Freddy Kleitz. As soon as he is giving his approval I am planning to submit and defend my thesis as soon as possible.

I thank you for your understanding.

With kind regards,

Cornelia von Baeckmann