

Hosting offer for Marie Skłodowska-Curie Postdoctoral Fellowships (PF) 2022 at University of Bremen/Research group Theoretical Chemistry/Institute for Physical and Theoretical Chemistry, Department 2 (Biology/Chemistry)

[MSCA Postdoctoral Fellowships](#) are individual research grants offering excellent postdoctoral researchers the chance to develop their skills by means of international mobility. Through the implementation of an original and personalised research project, MSCA Postdoctoral Fellowships aim to foster excellence through training and mobility and to equip researchers with new skills and competences in order to identify solutions to current and future challenges.

The Theoretical Chemistry research group at the University of Bremen invites motivated postdoctoral researchers to jointly prepare an application for the [Marie Skłodowska-Curie Postdoctoral Fellowships](#) call ([MSCA-PF-2022](#)) with them as host organisation.

Description of Hosting organisation/group

The focus of the research group Theoretical Chemistry (PI: Prof. Dr. Tim Neudecker) at the University of Bremen lies on the development of electronic structure simulation methods for molecules and extended materials under external influences like mechanical deformation and hydrostatic pressure. The developed methods are then used to simulate phenomena like force- or pressure-induced reactions or changes in spectroscopic properties (wavelengths/intensities of absorption/emission), which is used in the development of functional materials, e.g., force-responsive or mechanochromic polymers. Collaborations with leading scientists (working experimentally or theoretically) at the University of Bremen and in other countries inside or outside of Europe are close, particularly in the fields of functional materials for space applications, mechanochromic polymers and the generation of neuro-degenerative diseases.

The research group Theoretical Chemistry is a member of the MAPEX Center for Materials and Processes and the Bremen Center for Computational Materials Science (BCCMS). The Theoretical Chemistry research group has access to the state-of-the-art computer cluster at the BCCMS, which complements its own computer cluster. Additional computational resources are provided by the HLRN supercomputer.

Additional information can be found here: <https://www.uni-bremen.de/en/neudecker-group>

Topics/expertise

- Development of electronic structure methods for the simulation of mechanically deformed molecules and systems under pressure
- Application of simulation methods for the development of functional materials (e.g. mechanochromic or piezochromic materials)
- Simulation of biochemical processes
- Simulation of adsorption processes and development of novel sensing techniques
- Development of “unconventional” methods of initiating chemical reactions

Your profile

- Expected qualifications/expertise of the candidate:
 - Expertise in the development and/or application of quantum chemical/electronic structure methods to various problems in chemistry, biochemistry, or materials science
 - Ideally: Expertise in coding/scripting (e.g. C++, python, bash)
 - A PhD in Theoretical Chemistry, Physics, or a related field is required
- You must have a completed PhD at the time of the call deadline (14 September 2022).
- Candidates must have a maximum of 8 years full-time research experience from the PhD award date until September 14, 2022. Periods of inactivity in research (e.g. unemployment, periods of employment outside research, parental or sick leave) do not count towards the time of research experience.
- For European fellowships, candidates can be of any nationality and must not have resided or carried out their main activity (work, studies, etc.) in Germany for more than 12 months in the 36 months immediately before September 14, 2022.
- Highly motivated candidate with an excellent research track record appropriate to career stage, as evidenced by academic publications and other scientific output.

What we offer

- We are committed to fostering a good work-life balance
- A stimulating, interdisciplinary environment for high-level research
- A supportive, friendly and welcoming atmosphere in the group
- Support and guidance for the preparation of your MSCA PF proposal, backed by the expertise of the Funding Advisory Service at the University of Bremen

How to apply?

Indicate your interest by contacting the host institution as follows:

Please contact Prof. Dr. Tim Neudecker by email (neudecker@uni-bremen.de) with a short CV and motivation to indicate your interest to prepare a MSCA-PF application for a position in the Theoretical Chemistry group.

After the supervisor agrees to support you as a MSCA-PF candidate, you can start preparation of MSCA PF project proposal and will be supported further by the Funding Advisory Service of the host university.

For more information please contact the MSCA coordinator of the host institution: eu@vw.uni-bremen.de