Title
Postdoctoral position to study the deactivation of Cu/ZnO catalysts for methanol synthesis by operando electron microscopy

Institution
The Fritz Haber Institute (FHI) in Berlin is one of the oldest and most renowned research institutes within the Max Planck Society (MPG), Germany's most successful scientific organization. At the FHI, researchers from all over the world are engaged in basic research in the fields of physics and chemistry at interfaces and surfaces, catalysis research, and molecular physics. The Department of Inorganic Chemistry (http://www.fhi-berlin.mpg.de/acnew/department/index.html) focuses on establishing fundamental understanding on the functionality of industrially applied heterogeneous catalysts. Key aspects of our research involve synthesis, state-of-the-art characterization, concept and method development, and operando studies to obtain insights into their working structures. We aim at finding structures responsible for activity at gas/solid, liquid/solid, and solid/solid interfaces and the origin of deactivation within complex systems.

The Fritz Haber Institute (FHI) is located in the quiet south-west of Germany’s capital Berlin, which is a large, tolerant and cosmopolitan city. Berlin offers a wide variety of culture, art, music, and outdoor opportunities.

Position
The Inorganic chemistry department of the FHI is offering this position within the cluster of excellence 'e-conversion' of the TU Munich.

This position will offer the unique opportunity of combining different operando techniques for electron microscopy, including environmental scanning electron microscopy (ESEM) and transmission electron microscopy (TEM), with state-of-the-art aberration corrected high resolution TEM and electron spectroscopy. Experiments will be complemented by operando X-ray spectroscopy measurements at the synchrotron beamline BESSY II. Furthermore, a close collaboration with the Theory department of the FHI (https://www.fhi.mpg.de/th-department) is planned.

The postdoctoral position is initially limited to two years with the option for an extension.
Responsibilities

Requirements  We expect candidates to have:
• A PhD degree in Chemistry, Physical Chemistry or Chemical Engineering preferably with a specialization in heterogeneous catalysis or energy science.
• Hands-on-experience in catalysts´ characterization, preferably by scanning electron microscopy or (aberration-corrected) transmission electron microscopy
• Proven ability to write publications.
• Experience at performing and analyzing complex experiments with a high drive to solve scientific and practical/instrumental challenges independently.
• Collaborative spirit, teamwork, and excellent English skills.

Application procedure (deadline etc.)  Please submit your application via our online application portal https://www.fhi.mpg.de/open-positions as soon as possible but latest by January 15, 2022 including the following documents:
• Curriculum vitae
• List of publications
• Names and email addresses of three references

Contact  For more information, please contact Dr. Thomas Lunkenbein (lunkenbein@fhi-berlin.mpg.de), Department of Inorganic Chemistry, Fritz-Haber-Institut der Max-Planck-Gesellschaft, Faradayweg 4-6, 14195 Berlin