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Open PhD Position in CO₂ Activation using *Operando* Spectroscopies

The group of Prof. Christian Hess at the Institute of Physical Chemistry, TU Darmstadt, offers a PhD position for three years, starting in September. Information about the research group can be found at <https://www.chemie.tu-darmstadt.de/hess/index.en.jsp>.

The aim of this project is to elucidate the mode of operation of heterogeneous oxide catalysts in CO₂ hydrogenation. As part of the experimental activities state-of-the-art in *situ/operando* spectroscopic techniques (IR, Raman, UV-Vis), including very recently developed transient approaches, will be applied to monitor the structural dynamics and to develop a detailed mechanistic picture. To support the experimental results it is planned to perform theoretical calculations (DFT) in close collaboration with theoretical groups.

The candidate should have great interest in interdisciplinary work and be open to methodical developments and the interaction of experiment and theory. She/he is expected to have a Master of Science or diploma degree in Chemistry, Physics or related subjects, as well as a strong background in spectroscopy and heterogeneous catalysis. Experience in vibrational spectroscopy, *in situ/operando* spectroscopy, characterization of solid materials and/or theoretical calculations is a plus.

If you are interested in this position please send a motivation letter and the usual application documents, within a single pdf document, directly to me (christian.hess@tu-darmstadt.de), referring to the number 1254. Please contact me for more information.