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Microscopy and spectroscopy on model catalysts in gas environments

Wenzel, S.

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About the Author

Sabine Wenzel was born in Darmstadt, Germany, in 1992. She graduated from high school at the Edith-Stein-Schule in 2010 with a special focus on mathematics and physics. Sabine performed her bachelor studies in physics, with a minor in philosophy, at the Technische Universität Darmstadt. This included a bachelor project participating in the setup of a quantum key distribution system in the laser and quantum optics group of Prof.dr. Thomas Walther.

After spending some months in Spain for travel and volunteer work, Sabine moved to the Netherlands in 2014 to continue her studies at the Universiteit Leiden. Here she combined the master in physics with the science-based business track. For the scientific master project Sabine joined the group of Dr. Irene Groot, focusing on operando research in heterogeneous catalysis, which is part of the catalysis and surface chemistry group. While investigating the physical vapor deposition of rhenium oxide and tungsten oxide on Au(111), this project ultimately led to the research on surface gold oxide presented in this thesis. The business part of the study was concluded with a six-month internship in the department of new business development at cosine measurement systems, Warmond.

In 2017 Sabine returned to the Groot group for her PhD research, which first focused on the use of in situ scanning tunneling microscopy on zinc oxide and titania on gold. Additionally, Sabine took on the first near-ambient pressure X-ray photoelectron spectroscopy project performed in the Groot group, which included leading beamtimes at the ALS in Berkeley, US and at Max IV in Lund, Sweden. During her time in the Groot group she also participated in multiple beamtimes at the ESRF in Grenoble, France, performing in situ surface X-ray diffraction as well as in situ synchrotron X-ray assisted scanning tunneling microscopy. The PhD position in Leiden included presenting results at conferences and following a number of courses of scientific as well as transferable content. Additionally, Sabine supervised student research projects and assisted in the teaching of bachelor courses on calculus and statistical thermodynamics.

