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Microscopy and spectroscopy on model catalysts in gas environments

Wenzel, S.

Citation

Wenzel, S. (2021, September 16). *Microscopy and spectroscopy on model catalysts in gas environments*. Retrieved from <https://hdl.handle.net/1887/3210401>

Version: Publisher's Version

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Note: To cite this publication please use the final published version (if applicable).

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Issue Date: 2021-09-16

Acknowledgments

Irene Groot supervised the research presented in this thesis. Apart from providing the much needed chemist’s overview for the interpretation of results, Irene always has an open ear and supports individual personal development. I am especially thankful for the opportunity to expand my skill set by taking on the NAP-XPS project. **Rik Mom** introduced me to the ins and outs of the ReactorSTM setup while supervising my master’s project. Thank you for the confidence to let me work so independently in the lab and for allowing me to experience my first beamtime for the SXSTM project. Although we worked together less than originally planned for my PhD project, **Ludo Juurlink** allowed me to participate in an interesting side project that was quite different from my main projects.

Preparing and performing the beamtimes for my last project would not have been possible without **Richard van Lent, Dajo Boden, Mahesh Prabhu, Hamed Achour,** and **Elahe Motaei**. Of course we were greatly supported by **local contacts**: Monika Blum, Andrey Shavorskiy, Mattia Scardamaglia, Yifan Ye, Suyun Zhu, and Slavomir Nemsak. For our group meeting discussions I am also thanking the rest of the **Groot group** and many from the larger **CASC group** under the leadership of **Marc Koper, Marcel Rost**, thank you for teaching me, among other things, how to use the capacitive approach, which saved so many valuable lab hours. I want to thank **Francesco Carlà** for taking much time for explanations during our SXRD beamtimes and for input on the discussion of XPS data.

The experimental work performed in Leiden heavily depends on the **fine mechanics department**, who are not only extremely skilled but also great to work with. Although, I probably received help from every employee at the FMD one time or another, I want to especially thank **Mirthe Bergman** for her work on the ReactorSTM and uplifting conversations during the first years of my PhD, **Freek Groenewoud, Fred Schenkel**, and **Robin Schrama** for taking over work for our group, **Emiel Wiegers** for quite some spot welding, and **Thijs Hoogenboom** for his help with other projects. Our lab work also depends on the fast repairs and the development

of new electronics and software by the **electronics department** in Leiden, where I especially want to thank **Bert Crama**, **Raymond Koehler**, **Martin Moene**, and **Peter van Veldhuizen**. In other areas I was supported by **José Dijkzeul**, **Wilfred van der Geest**, **Wen Tian Fu**, the **BHV**, the **reception staff** in the Huygens building, and **facility services**. Additionally, many companies supply us with parts and maintenance. I especially want to thank **Leiden Probe Microscopy** for their advice regarding gas delivery systems.

My students in the lab, **Yanick Monk**, **Laurens de Jong**, and many **LO students**, did not only give me the opportunity to teach content but to learn teaching as well. I also want to thank **Edgar Blokhuis** for teaching advice and motivating words while I assisted in his courses. I am thankful to **Esther Groeneveld**, **Peter Berben**, **Toine Cents**, **Xander Nijhuis**, **Evgeny Pidko**, **Leon Lefferts**, **Guido Mul**, and **Annemarie Huijser** for discussions and motivating words during the CatC1Chem progress meetings. Sharing our frustrations with the other PhD candidates in the program, **Devin O'Neill**, **Robert Franz**, and **Rolf Postma**, could be quite helpful.

Not underestimating the personal support network, I first want to thank my father **Klaus** for motivating me to understand the world around me and to make good use of the possibilities for education I was given, as well as for always having advice. **Mama Elke**, thank you for all those warm woolen socks and the great care during my stays in Darmstadt. **Ulrike & Devran**, I always enjoy those conversations about our jobs and lives. Thank you for making me an aunt twice in the last four years. My parents, grandparents, and godparents, **Eric & Tina Knop**, supported me financially during my bachelor and master studies.

Blandine, you are not only a good friend, but also gave me a fun place to stay for a while. **Guido**, thank you for the truly amazing experience of traveling through Japan. Together with **Alberico** and **Eduardo** we have the most fun evenings discussing science, society, and life. **Andrea**, thank you for meeting me at the sports center for much needed breaks from the lab. I also want to thank the employees, volunteers, and four-legged residents at the **Haags Dierencentrum** for needed distractions and a chance to practice my Dutch. Although I was not always the best at keeping in contact after moving to the Netherlands, I am glad to still call fellow students from my bachelor studies my friends today. Thank you, **Steffen**, **Laura**, **Victor**, **Barbara**, and **Mona**. I also want to thank those that have and are making the measurement hall a brighter place: **Gesa**, **Norman**, **Sabine**, **Tim**, **Peter**, **Tobias**, **Martin**, **Irene**, **Tjerk**, **Tjerk**, **Jaimy**, **Tycho**, **Sergi**, and many more.

Last but definitely not least, **Werner & Loki**, I feel so lucky that I met the two of you. You are unbelievably supportive in many different ways and gave me so much more reason not to stay in the lab or on the computer for too long (on most days).

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.

