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A structural view of Pd model catalysts : high-pressure surface X-Ray diffraction

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Acknowledgements

Although this thesis has only my name printed on the cover, at the basis of its contents lies the joint effort of many people. Here I take the opportunity to thank them all for their support, help, and advice.

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List of publications

- *The active phase of palladium during methane oxidation*,
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- *Reply to “Comment on ‘Catalytic activity of the Rh surface oxide: CO oxidation over Rh(111) under realistic conditions’ ”*, J. Gustafson, R. Westerström, O. Balmes, A. Resta, R. van Rijn, X. Torrelles, C.T. Herbschleb, J. W. M. Frenken, and E. Lundgren, *Journal of Physical Chemistry C* **114**, 22372-22373 (2010).
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and R. Felici,
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Curriculum vitae

Richard van Rijn was born on July 5, 1983 in Delft . He obtained his VWO diploma from the Westland College in Naalwijk in 2001 and enrolled at Leiden University to study physics. After completing the undergraduate courses in 2005, he started studying the formation and diffusion of single-atom thick gold wires on a gold surface in the framework of a M.Sc. thesis project under the supervision of Dr. M. J. Rost. After this project he spent 5 months assembling, testing and designing parts of a flow reactor for the in situ study of model catalysts with surface x-ray diffraction at the European Synchrotron Radiation Facility (ESRF) in Grenoble, France. This work was done under the supervision of Dr. R. Felici. In 2007 he received his M.Sc. degree (cum laude) in physics from Leiden University.

In September 2007 he continued his work on the flow reactor under the joint supervision of Dr. R. Felici at the ESRF and Prof. dr. J. W. M. Frenken at Leiden University. The research project aimed at developing and using the flow reactor for in situ measurements of heterogeneous model catalysts. The results of this project are described in this thesis.

