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The interaction of water and hydrogen with nickel surfaces

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List of publications

This thesis is based on the following publications:

Chapter 3

Junjun Shan, Jacques F. M. Aarts, Aart W. Kleyn, and Ludo B. F. Juurlink
The interaction of water with Ni(111) and H/Ni(111) studied by TPD and HREELS
Phys. Chem. Chem. Phys., 2008, **10**, 2227.

Chapter 4

Junjun Shan, Jacques F. M. Aarts, Aart W. Kleyn, and Ludo B. F. Juurlink
Co-adsorption of water and hydrogen on Ni(111)
Phys. Chem. Chem. Phys., 2008, **10**, 4994.

Chapter 5

Junjun Shan, Aart W. Kleyn, and Ludo B. F. Juurlink
Identification of Hydroxyl on Ni(111)
Chemphyschem., 2009, **10**, 275.

Chapter 6

Junjun Shan, Aart W. Kleyn, and Ludo B. F. Juurlink
Adsorption of molecular hydrogen on an ultrathin layer of Ni(111) hydride
Chem. Phys. Lett., 2009, **474**, 107.

Chapter 7

Junjun Shan, Aart W. Kleyn, and Ludo B. F. Juurlink

On the formation and decomposition of a thin NiH_x layer on Ni(111)

To be submitted.

In addition, the author has participated in the following articles:

Roberto Macovez, Michael R. C. Hunt, Junjun Shan, Andrea Goldoni, Thomas Pichler, Maddalena Pedio, Paolo Moras, Carla Castellarin-Cudia, Joachim Schiessling, Luc Venema, and Petra Rudolf

Metal-to-insulator transition in thin-film polymeric AC₆₀

New J. Phys., 2009, **11**, 023035.

Christine Hann, Junjun Shan, Irene M. N. Groot, Aart W. Kleyn, and Ludo B. F. Juurlink

Selective poisoning of active sites for D₂ dissociation on Pt

To be submitted

Junjun Shan, Christine Hann, Yin Liu, Otto T. Berg, and Ludo B. F. Juurlink

Employing a cylindrical single crystal to study step effects in gas-surface dynamics

In preparation

Curriculum Vitae

Junjun Shan was born in the city of Hangzhou, China, on September 21, 1979. After obtaining his bachelor degree and master degree in physics in 2002 and 2004, he decided to continue his education in chemistry. In September 2004, he started his chemistry study as a PhD student at the Leiden Institute of Chemistry under the supervision of Prof. Dr. Aart W. Kleyn and Dr. Ludo B. F. Juurlink in the Catalysis and Surface Chemistry group. This group is currently headed by Prof. Dr. Marc T. M. Koper. His studies focused the interaction of water and hydrogen with nickel surfaces. The results of these studies are described in this thesis. Several studies have been presented at a number of national and international scientific conferences. During his PhD study, Junjun supervised one bachelor student during a three-month research project, and taught several 1st and 2nd year practical courses.

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