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A comparative study of platinum nanodeposits on HOPG (0001), MnO(100) and MnO_x/MnO(100) surfaces by STM and AFM after heat treatment in UHV, O₂, CO and H₂

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Curriculum Vitae

The author of this thesis was born on January 19th, 1975 in L'viv, Ukraine. After receiving his Bachelor's degree in Chemical Engineering from L'viv Polytechnic National University in 1996, he pursued his studies at the same university and obtained his Master's degree in Chemical Engineering in 1998, specializing in technology of synthesis of organic products. Afterwards he started a Ph.D. project under the supervision of Prof. Dr. V. M. Zhyzneviskiy and worked in the field of the oxidative dehydrogenation of ethylbenzene to styrene. The results of the research were presented in the thesis entitled: "*Oxidative dehydrogenation of ethylbenzene to styrene*". On January 15th, 2003 he received a degree of a Candidate of Technical Sciences on speciality: Technology of Synthesis of Organic Products. From September 2002 to February 2006, he was a Ph.D. student and performed research in the group of Prof. Dr. B. E. Nieuwenhuys at the Leiden Institute of Chemistry, Leiden University, on the subject of model heterogeneous catalysts. The results of the research accomplished in this period have formed the basis for the presented thesis: "*A comparative study of platinum nanodeposits on HOPG(0001), MnO(100) and MnO_x/MnO(100) surfaces by STM and AFM after heat treatment in UHV, O₂, CO and H₂*". For this project he worked both at the Leiden University (the Netherlands) and the FOM Institute for Atomic and Molecular Physics (AMOLF), Amsterdam (the Netherlands) under the joint supervision of Prof. Dr. B. E. Nieuwenhuys and Dr. Ir. J. Verhoeven.

This thesis is partly based on the following publications:

1. R. D. Tsybukh, M. Alink, B. E. Nieuwenhuys and J. Verhoeven, Investigating of Pt nanoparticles on the highly oriented pyrolytic graphite by using scanning probe microscopy, 5th Netherlands' Catalysis and Chemistry Conference - NCCC V, Noordwijkerhout, The Netherlands, 188 (2004).
2. R. D. Tsybukh, J. Verhoeven, J. W. Bakker, B. E. Nieuwenhuys, AFM study of surface topography of a MnO(100) single-crystal after heat treatment in UHV and oxygen. (in preparation).
3. R. D. Tsybukh, J. Verhoeven, J. W. Bakker, B. E. Nieuwenhuys, STM and AFM investigations of platinum deposits on MnO(100) and MnO_x/MnO(100) surfaces. (in preparation).