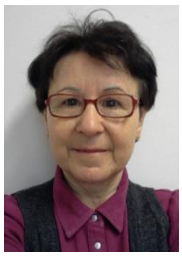
CURRICULUM VITAE AND SCIENTIFIC QUALIFICATION OF APPLICANTS

PERSONAL INFORMATION

Doc. Ing. Viera Skákalová, DrSc



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WORK EXPERIENCE

2012 - present — Senior scientist
University of Vienna, Faculty of Physics, Department of Nanostructured Materials. Vienna, Austria.
Research in Nanomaterials, Teaching Physics

2002 - 2012 — Senior scientist
Max-Planck Institute of Solid State Research, Department von Klitzing, Stuttgart, Germany
Research in Nanomaterials

1999 - 2001 — Visiting senior scientist
Weimann Institute of Science, Department of Chemical Physics, Rechovot, Israel.
Research in Nanomaterials

1997-1999 — Professor Associate
Department of Chemical Physics, Slovak University of Technology, Bratislava, Slovakia
Research in Conductive Polymers and Nanomaterials, Teaching Physics

1980-1996 — Professor Assistant
Department of Chemical Physics, Slovak University of Technology, Bratislava, Slovakia
Research in Conductive Polymers and Nanomaterials, Teaching Physics

EDUCATION AND TRAINING

PERSONAL SKILLS

2008 — Doctor of Sciences in Physical and Mathematical Sciences (DrSc)
Slovak Academy of Science in Bratislava, Slovakia

1997 — Professor Associate in Solid State Physics (Docent)
Slovak University of Technology in Bratislava, Slovakia

1985 — Doctor in Philosophy in Physical and Mathematical Sciences (PhD)
Slovak University of Technology in Bratislava, Slovakia

Organisational skills

Organizer of scientific symposia:

Workshop on Nanoengineered Materials and Macro-Molecular Technologies, October 2 – 6, 2005, Santa Fe, New Mexico, USA.

E-MRS 2007 Spring Meeting, 28 May – 1 June, 2007, Strasbourg, Symposium L: Transport properties of Low dimensional Carbon Structures

E-MRS 2009 Spring Meeting, 2009, Strasbourg, Symposium L: Carbon Nanotubes and Graphene - Low Dimensional Carbon Structures

Scientific seminar “Carbon nanotubes - material of the future”, 12.novembra 2007, FEI STU, Bratislava.

E-MRS 2012 Fall meeting, Warsaw 17 – 21 Sept. 2012, Symposium G: "Graphene, nanotubes and related materials"

E-MRS 2016 Spring meeting, Lille 2 – 6 May. 2016, Symposium Y: " Graphene and related materials: from fundamental science to applications"

NT´16, Vienna, 7-13 August 2016, Satellite symposium MSIN16: 10th International Workshop on Metrology, Standardization and Industrial Quality of Nanotubes

Co-founder (2004) and CEO of the company Danubia NanoTech, s.r.o. in Bratislava.

Job-related skills

Author and co-author of about 130 scientific publications in fields of molecular monolayers, conductive polymers, fullerenes and carbon nanotubes and graphene with more than 2300 citations; the h-index 23 (WoS). Co-author of seven pedagogical publications and of two patents.

Member of Committee of Slovak Academy of Sciences for recognition of scientific degrees

Member of European Physical Society, German Physical Society, Slovak Physical Society, European Material Research Society, American Material Research Society

Referee to scientific journals Nature Physics, Physical Review Letters, Nano Letters, Physical Review B, Applied Physics Letter, Advanced Materials, Carbon, Small, Journal of Chemical Physics, Physical Chemistry Letters and others.

Editor of a book: Graphene: properties, preparation, characterisation and devices, Woodhead Publishing Ltd., Cambridge, UK, in preparation.

Guest-editor of journals Physica Status Solidi (Willey) and Physica E (Elsevier).

Chair of the steering committee of the South Moravian Programme for Distinguish Researchers,

Expert evaluator at the 6th and 7th Framework and H2020 Programmes of European Commission funding agency REA; at Research council of Norway; at Grant agency of Academy of science of Czech republic; at German-Israeli Foundation for Scientific Research and Development; at Slovak national funding agencies APVV, VEGA.

Publications in last 5 years

1. **Viera Skakalova**, Peter Kotrusz, Matej Jergel,Toma Susi,Andreas Mittelberger,Viliam Vretenar, Peter Siffalovič,Jani Kotakoski,Jannik C. Meyer and Martin Hulman, Chemical Oxidation of Graphite: Evolution of the Structure and Properties, Journal of Physical Chemistry C 122 (1), 929-935 (2018)
2. Romanyuk, Oleksandr; Varga, Marian; Tulic, Semir; Izak, Tibor; Jiricek, Petr; Kromka, Alexander; **Skakalova, Viera**; Rezek, Bohuslav, Study of Ni-Catalyzed Graphitization Process of Diamond by In-situ X-ray Photoelectron Spectroscopy, J. Phys. Chem. C, 122, 6629−6636 (2018),
3. Jira, J., Rezek, B., Kriha, V., Artemenko, A., Matolínová, I., **Skakalova, V**., Stenclova, P., Kromka, A., Inhibition of e. Coli growth by nanodiamond and graphene oxide enhanced by luria-bertani medium, Nanomaterials 8(3) (2018)
4. Toma Susi, **Viera Skákalová**, Andreas Mittelberger, Peter Kotrusz, Martin Hulman, Timothy J. Pennycook, Clemens Mangler, Jani Kotakoski & Jannik C. Meyer Computational insights and the observation of SiC nanograin assembly: towards 2D silicon carbide, Scientific Reports 7, 4399 (2017)
5. Kaindl, R., Bayer, B.C, Resel, R., Müller, T., **Skakalova, V**., Habler, G, Abart, R., Cherevan, A.S, Eder, D.,Blatter, M., Fischer, F., Meyer, J.C., Polyushkin, D.K., Waldhauser, W., Growth, structure and stability of sputterdeposited MoS2 thin films, Beilstein Journal of Nanotechnology 8, 1115 (2017)
6. Marian Varga, Tibor Izak, Viliam Vretenar, Halyna Kozak, Jakub Holovsky, Anna Artemenko, Martin Hulman, **Viera Skakalova**, Dong Su Lee, Alexander Kromka, Diamond/carbon nanotube composites: Raman, FTIR and XPS spectroscopic studies, Carbon 111, 54-61 (2017).
7. Torbjörn Björkman, **Viera Skakalova**, Simon Kurasch, Ute Kaiser, Jannik C. Meyer, Jurgen H. Smet and Arkady V. Krasheninnikov, Vibrational Properties of a Two-Dimensional Silica Kagome Lattice, ACS Nano 10, 10929−10935, (2016).
8. Stepan Stehlik, Marian Varga, Martin Ledinsky, Daria Miliaieva, Halyna Kozak, **Viera Skakalova**, Clemens Mangler, Timothy J. Pennycook, Jannik C. Meyer, Alexander Kromka, Bohuslav Rezek, High-yield fabrication and properties of 1.4 nm nanodiamonds with narrow size distribution, Scientific Reports 6, 38419 (2016)
9. Shashikant Sharma, Bernhard C. Bayer, **Viera Skakalova**, Ghanshyam Singh and C. Periasamy, “Structural, Electrical and UV Detection Properties of ZnO/Si Heterojunction Diodes” IEEE Transaction on Electron Devices,. 99, 1-8, (2016).
10. Alexander Kromka, Jaroslav Jira, Pavla Stenclova, Vitezslav Kriha, Halyna Kozak, Jana Beranova, Viliam Vretenar, **Viera Skakalova**, and Bohuslav Rezek, Bacterial response to nanodiamonds and graphene oxide sheets, Phys.Status Solidi B, 253, 2481–2485 (2016).
11. Kim Youngwook, Lee Dong Su, Jung Suyong, **Skakalova Viera**, Taniguchi Takashi, Watanabe Kenji, Kim Jun Sung, Smet Jurgen, Fractional Quantum Hall States in Bilayer Graphene Probed by Transconductance Fluctuations, Nano Letters 15, 7445–7451(2015).
12. Stehlik, Stepan; Varga, Marian; Ledinsky, Martin; Jirasek, Vit; Artemenko, Anna; Kozak, Halyna; Ondič, Lukáš; **Skakalova, Viera**; Argentero, Giacomo; Pennycook, Timothy; Meyer, Jannik; Fejfar, Antonin; Kromka, Alexander; Rezek, Bohuslav, Size and Purity Control of HPHT Nanodiamonds Down to 1 nm, Journal of Physical Chemistry C, 119(49), 27708–27720 (2015),
13. Pascal Gehring, Kristina Vaklinova, Alexander Hoyer, Hadj M. Benia, **Viera Skakalova**, Giacomo Argentero, Franz Eder, Jannik C. Meyer, Marko Burghard and Klaus Kern, Dimensional crossover in the quantum transport behavior of the natural topological insulator Aleksite, Scientific Reports 5,11691 (2015)
14. M. Varga, V. Vretenar, T. Izak, **V. Skakalova**, A. Kromka, Carbon Nanotubes Overgrown And Ingrown With Nanocrystalline Diamond Deposited by Different CVD Plasma Systems, Physica Status Solidi B 251, 2413–2419, (2014).

15. M. Varga, V. Vretenar, M. Kotlar, **V. Skakalova**, A. Kromka, Fabrication of free-standing pure carbon-based composite material with the combination of sp2-sp3 hybridizations, Applied Surface Science 308, 211–215 (2014).

16. Marcel Meško, Viliam Vretenár, Peter Kotrusz, Martin Hulman, and **Viera Skákalová**, Synthesis of carbon nanowalls on macroporous nickel foam by atmospheric glow discharge chemical vapour deposition, *Physica Status Solidi B*, 251, 933–936 (2014).

17. Roth, S., Schmid, M., **Skákalová, V**., Duesberg, G.S., Kolaric, I., Carroll, D., Report on the Special Miniworkshop "nano&Management" , *Physica Status Solidi* (C) 10, 1877-1881 (2013).

18. Torbjörn Björkman, Simon Kurasch, Ossi Lehtinen, Jani Kotakoski, Oleg Yazyev, Anchal Srivastava, **Viera Skákalová**, Jurgen Smet, Ute Kaiser, and Arkady Krasheninnikov, Defects in bilayer silica and graphene: common trends in diverse hexagonal two-dimensional systems, Scientific Reports 3, 3482 (2013).

19. **Viera Skákalová**, Viliam Vretenár, Ľubomír Kopera, Peter Kotrusz, Clemens Mangler, Marcel Meško, Jannik C.Meyer and Martin Hulman, Electronic Transport in Composites of Graphite Oxide with Carbon Nanotubes, Carbon 72, 224 –232 (2014).

20. Jannik C Meyer, Franz Eder, Simon Kurasch, **Viera Skákalová**, Jani Kotakoski, Hye Jin Park, Siegmar Roth, Andrey Chuvilin, Sören Eyhusen, Gerd Benner, Arkady V. Krasheninnikov, Ute Kaiser, Erratum: Accurate Measurement of Electron Beam Induced Displacement Cross Sections for Single-Layer Graphene [Phys. Rev. Lett. 108, 196102 (2012)], Physical Review Letters 110 (2013).

21. Franz Eder, Jani Kotakoski, Katharina Holzweber, Clemens Manger, **Viera Skákalová**, and Jannik C. Meyer, Probing from both sides: Reshaping the graphene landscape via face-to-face dual-probe microscopy, Nano Letters 13, 1934−1940 (2013).

22. M. Varga, M. Kotlar, V. Vretenar, T. Izak, M. Ledinsky, M. Michalka, **V. Skákalová**, A. Kromka, M. Vesely, HFCVD growth of various carbon nanostructures on SWCNT paper controlled by surface treatment, *Physica Status Solidi B* 249, 2399–2403 (2012).

23. Marcel Meško, Viliam Vretenár, Peter Kotrusz, Martin Hulman, Ján Šoltýs, and **Viera Skákalová**, Carbon nanowalls synthesis by means of atmospheric dcPECVD method, *Physica Status Solidi B* 249, 2625–2628 (2012).

24. Toma Susi, Jani Kotakoski, Raul Arenal, Simon Kurasch, Hua Jiang, **Viera Skákalová**, Arkady V. Krasheninnikov, Esko I. Kauppinen, Ute Kaiser and Jannik C. Meyer, Atomistic description of electron beam damage in nitrogendoped graphene and single-walled carbon nanotubes, ACS Nano 6, 8837-8846 (2012).

25. Huang, Pinshane; Kurasch, Simon; Srivastava, Anchal; **Skákalová, Viera**; Kotakoski, Jani; Krasheninnikov, Arkady; Hovden, Robert; Mao, Qingyun; Meyer, Jannik; Smet, Jurgen; Muller, David; Kaiser, Ute: Direct Imaging of a Two-Dimensional Silica Glass on Graphene; Nano Letters 12, 1081−1086 (2012).

26. F. Eder, J. C. Meyer, S. Kurasch, U. Kaiser, V. **Skákalová**, J. Kotakoski, A. V. Krashenninikov, A. Chuvilin, Quantitative Analysis of Electron Beam-Induced Destruction of Graphene Membranes under an Electron Microscope , *Microscopy and Microanalysis* 18(S2), 1500-1501. (2012).

27. P. Y. Huang, R. Hovden, Q. Mao, D. A. Muller, S. Kurasch, U. Kaiser, J. Kotakoski, A. Krasheninnikov, A. Srivastava, V. **Skákalová**, J. Smet, J. Meyer , Quantitative Atomic-resolution Imaging and Spectroscopy of a 2D Silica Glass , *Microscopy and Microanalysis* 18(S2), 340-341 (2012)..

28. Dong Su Lee, **Viera Skákalová**, Thomas Weitz, Klaus von Klitzing, Jurgen Smet, Transconductance fluctuations as a probe for interaction induced quantum Hall states in graphene, Phys. Rev. Letters 109, 056602 (2012).

29. Jannik C. Meyer, Franz Eder, Simon Kurasch, **Viera Skákalová**, Jani Kotakoski, Hye Jin Park, Siegmar Roth, Andrey Chuvilin, Sören Eyhusen, Gerd Benner, Arkady V. Krasheninnikov, and Ute Kaiser, An accurate measurement of electron beam

induced displacement cross sections for single-layer graphene, Phys. Rev. Letters 108, 196102 (2012).

30. Kurasch, Simon; Kotakoski, Jani; **Skákalová, Viera**; Krasheninnikov, Arkady; Meyer, Jannik; Smet, Jurgen; Kaiser, Ute; Atom-by-Atom Observation of Grain Boundary Migration in Graphene, Nano Letters 12, (2012)

31. **Skákalová V.,** Kaiser A.B., editors of a book: “Graphene: properties, preparation, characterisation and devices” (Elsevier, 2014).

10 the most important publications

1. Viera Skakalova, Peter Kotrusz, Matej Jergel,Toma Susi,Andreas Mittelberger,Viliam Vretenar, Peter Siffalovič,Jani Kotakoski,Jannik C. Meyer and Martin Hulman, Chemical Oxidation of Graphite: Evolution of the Structure and Properties, Journal of Physical Chemistry C 122 (1), 929-935 (2018)
2. Kim Youngwook, Lee Dong Su, Jung Suyong, **Skakalova Viera**, Taniguchi Takashi, Watanabe Kenji, Kim Jun Sung, Smet Jurgen, Fractional Quantum Hall States in Bilayer Graphene Probed by Transconductance Fluctuations, Nano Letters 15, 7445–7451(2015).
3. **Viera Skákalová**, Viliam Vretenár, Ľubomír Kopera, Peter Kotrusz, Clemens Mangler, Marcel Meško, Jannik C. Meyer and Martin Hulman, Electronic Transport in Composites of Graphite Oxide with Carbon Nanotubes, Carbon 72, 224 –232 (2014).
4. Dong Su Lee, **Viera Skákalová**, Thomas Weitz, Klaus von Klitzing, Jurgen Smet, Transconductance fluctuations as a probe for interaction induced quantum Hall states in graphene, Phys. Rev. Letters 109, 056602 (2012).
5. Jannik C. Meyer, Simon Kurasch, Hye Jin Park, **Viera Skákalová**, Daniela Künzel, Axel Groß, Andrey Chuvilin, Siegmar Roth, Ute Kaiser, Experimental analysis of charge redistribution due to chemical bonding by high-resolution transmission electron microscopy, Nature Materials 10, 209–215 (2011),
6. Hye Jin Park, Jannik Meyer, Siegmar Roth, **Viera Skákalová**, Growth and properties of few-layer graphene prepared by chemical vapor deposition, Carbon 48 (2010) 1088–1094
7. Benjamin Krauss, Péter Nemes-Incze, **Viera Skákalová**, László P. Biro, Klaus von Klitzing, and Jurgen H. Smet, Raman scattering at pure graphene zig-zag edges, NanoLetters 10, (2010), 4544-4548
8. **Viera Skákalová**, Alan B. Kaiser, Jei Seung Yoo, Dirk Obergfell, Siegmar Roth, Correlation between resistance fluctuations and temperature dependence of conductivity in graphene, Physical Review B 80, 153404 (2009)
9. **V. Skákalová**, A. B. Kaiser, Y.-S. Woo and S. Roth, Electronic transport in carbon nanotubes: From individual nanotubes to thin and thick networks, Physical Review B **75**, (2006) 085403
10. **Skákalová V**., Kaiser A. B., Dettlaff-Weglikowska U., Hrnčariková K. and Roth S.: Effect of chemical treatment on electrical conductivity, infrared absorption and Raman spectra of single wall carbon nanotubes, Journal of Physical Chemistry B, **109**, (2005) 7174-7181

Leading research projects

SPANG: co-financed from EC FP6 Program and focused on the development of low-price synthetic routes for high-quality single-walled carbon nanotubes. (2004-2006)

NANONET: co-financed from the Slovak Research and Development Fund and focused on preparation of carbon nanotubes and electronic devices based on networks of carbon nanotubes.(2008-2011)

Electrograph: co-financed from EC FP7 Program and focused on research of graphene based electrodes for application in super capacitors (2011-2014)

CENAMOST: co-financed from the Slovak Research and Development Fund and focused on the development of the Centre of Excellence for nano/microelectronic, optoelectronic and sensory technologies.(2010-2013)

GraphenMoFET: co-financed from the Austrian Research Fund FFG and focused on Graphene – MoS2 heterostructures by PVD and Aerosol Jet® Printing methods.(2015-2016)

IN-AT: financed from the Austrian Research Fund OEAD and focused on design and Development of Nanostructured ZnO Film Based Piezoelectric Devices for Energy Harvesting Applications (2015-2017)

ATEGOD: financed from the Austrian Research Fund FWF and focused on synthesis of graphene-on-diamond systems and to investigate the electronic and atomic structure of their interface.(2016-2019)

DiaGraph: financed from the Slovak Research and Development Fund and focused on mechanism of diamond-graphene transformation and electronic transport.(2017-2020)