

**RESEARCH EXPERIENCE:**

**2001 — present**

**Post Doctoral Fellow:** *X-Ray Scattering Studies of Liquid Metal Surfaces*

Division of Engineering and Applied Sciences, Harvard University, Cambridge, MA

- Conducting experimental studies of free liquid metal surfaces of elemental metals (Sn, K), metal alloys (BiSn, AuSi, AuGe) and thin oxide films (SnO/Sn) by surface x-ray scattering techniques using synchrotron x-ray radiation at Brookhaven National Lab (NSLS, BNL, Brookhaven, NY) and Argonne National Lab (APS, ANL, Chicago, IL)
- X-ray reflectivity data analysis, modeling and fitting. Writing program codes for the surface x-ray reflectivity modeling in C/C++ and Origin C

**1998 — 2001**

**Research Assistant/Post Graduate Student:** *High-resolution photoelectron spectroscopy and x-ray diffraction of surfaces of rare-earth metal single crystals. Crystal surface interaction with adsorbates*

Freie Universitaet Berlin, Germany / St. Petersburg State University, Russia

- Conducted experiments on electronic and magnetic properties and morphology of surfaces of thin rare-earth metal single crystalline films (Ho, Gd, Eu and others). Extensive experience with the state-of-art photoelectron spectrometer Scienta-300.
- Developed software and mechanical set-up for the soft x-ray diffraction experimental station
- Conducted first magnetic soft x-ray diffraction experiments on thin lanthanide films

**1996 — 1998**

**Research Assistant/Post Graduate Student:** *Electron-electron spectroscopies of rare-earth metal compounds*

St. Petersburg State University, Russia

- Conducted experiments on growth, characterization and analysis of physical-chemical properties of rare-earth metal silicide compounds with electron spectroscopy and diffraction techniques

**1993 — 1996**

**Research Assistant/Graduate Student:** *Scanning probe microscopy of surfaces of semiconductors and insulators*

St. Petersburg State University, Russia

- Developed the laboratory version of atomic force microscope (AFM) and conducted experiments on morphology of BN and HOPG surfaces

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**EDUCATION**

**2001** **Ph.D.** Physics, St. Petersburg State University, Russia / Freie Universitaet Berlin, Germany  
“Silicon interaction with surfaces of rare-earth metal single crystals”

**1996** **M.S.** Physics, St. Petersburg State University, Russia

**1994** **B.S.** Physics, St. Petersburg State University, Russia













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## WORK SKILLS:

- ✓ Extensive experience with various experimental techniques of surface science and nanotechnology including: X-Ray Diffraction (XRD), Grazing Incident Diffraction (GID), Soft X-Ray Diffraction, Anomalous X-Ray Diffraction, High Resolution Ultraviolet Photoelectron Spectroscopy (UPS) (experience with high-end photoelectron spectrometers including Scienta analyzers), X-Ray Photoelectron Spectroscopy (XPS), Auger-Electron Spectroscopy (AES), Electron Energy Loss Spectroscopy (EELS), Low Energy Electron Diffraction (LEED), Atomic Force Microscope (AFM), Scanning Tunneling Microscope (STM), Some experience with Scanning Electron Microscope (SEM)
- ✓ Excellent experimental skills in Ultra High Vacuum (UHV) technology, both solid and liquid sample preparation, thin film growth, MBE and CVD.
- ✓ Experience of work at various synchrotron radiation facilities including BESSY (Germany), HASYLAB (Germany), ESRF (France), NSLS (NY, US), APS (IL, US)
- ✓ Programming experience with C/C++ and Fortran environments. Familiarity with Origin scientific software, programming in Origin C.

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## SELECTED PUBLICATIONS:

-  **Surface Oxidation of Liquid Sn**, A. Grigoriev, O. Shpyrko, C. Steimer, P. Pershan, B. Ocko, M. Deutsch, B. Lin, J. Gebhardt, T. Graber, M. Meron, Surf. Sci. (2004), submitted, preprint available
-  **Anomalous Layering at the Liquid Sn Surface**, O.G. Shpyrko, A. Grigoriev, C. Steimer, P.S. Pershan, B.M. Ocko, M. Deutsch, B. Lin, J. Gebhardt, M. Meron, T. Graber, Phys. Rev. B (2004), submitted, preprint available
-  **X-ray study of the liquid potassium surface: structure and capillary wave excitations**, O.G. Shpyrko, P. Huber, P.S. Pershan, B.M. Ocko, H. Tostmann, A. Grigoriev and M. Deutsch, Phys. Rev. B **67**, 115405, (2003)
-  **Magnetic X-Ray Scattering at the Holmium Ms Resonance**, H. Ott, C. Schuessler-Langeheine, E. Schierle, A. Grigoriev, V. Leiner, H. Zabel, G. Kaindl, and E. Weschke, Phys. Rev. Lett. (2004) submitted, preprint available.
-  **Reaction of Si with the Yb(111) surface studied by *in situ* x-ray diffraction and photoemission**, A. Grigoriev, E. Weschke, C. Schuessler-Langeheine, D. V. Vyalikh, Chandan Mazumdar, R. Meier, H. Ott, V. K. Adamchuk, and G. Kaindl, Phys. Rev. B (2004), in preparation for resubmission, preprint available.
-  **Surface x-ray emission from lanthanide metals**, F. Hübinger, A.S. Shulakov, A. Grigoriev, K. Starke, and G. Kaindl: Surf. Sci. Lett. **526**, L137-142 (2003)
-  **Oxygen-induced magnetic surface states on the (0001) surfaces of heavy lanthanide metals**, C. Schüßler-Langeheine, H. Ott, A. Yu. Grigoriev, A. Möller, R. Meier, Z. Hu, Chandan Mazumdar, G. Kaindl, and E. Weschke, Phys. Rev. B **65**, 214410 (2002)
-  **Magnetic Splitting of Valence States in Ferromagnetic and Antiferromagnetic Lanthanide Metals**, C. Schüßler-Langeheine, E. Weschke, Chandan Mazumdar, R. Meier, A. Yu. Grigoriev, G. Kaindl, C. Sutter, D. Abernathy, G. Grübel, and M. Richter, Phys. Rev. Lett. **84**, 5624 (2000)
-  **Interaction of Thin Silicon Layers with (0001) Surface of Rare-Earth Metals**, M. Shikin, A. Yu. Grigoriev, G.V. Prudnikova, D.V. Vyalikh, S.L. Molodtsov, V.K. Adamchuk, Phys. Solid State **42**, 973 (2000)
-  **Magnetically ordered surface oxide on Gd(0001)**, Schüßler-Langeheine, R. Meier, H. Ott, Z. Hu, Chandan Mazumdar, A. Yu. Grigoriev, G. Kaindl and E. Weschke, Phys. Rev. B **60**, 3449 (1999)
-  **A new low-temperature phase of Yb metal and its relation to a-Ce**, E. Weschke, A. Yu. Grigoriev, C. Schüßler-Langeheine, Chandan Mazumdar, R. Meier, S. Vandr , S. Ram, L. Kilian, G. Kaindl and C. Sutter, Phys. Rev. Lett. **83**, 584 (1999)
-  **Properties of Interaction of Europium with Si(111) Surface**, A. Yu. Grigoriev, A.M. Shikin, G.V. Prudnikova, S.A. Gorovikov, V.K. Adamchuk, Phys. Solid State **40**, 519 (1998)