

# Dmitri Y. Petrovykh

International Iberian Nanotechnology Laboratory (INL)  
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2011 *Principal Investigator*, INL, Braga, Portugal

2003 *Assistant Research Scientist*, University of Maryland, College Park, MD, USA

2000 *Research Associate*, University of Maryland, College Park, MD, USA

1996 *Research Assistant*, University of Wisconsin, Madison, WI, USA

1995 *Teaching Assistant*, University of Wisconsin, Madison, WI, USA

## Education

1995–2000 *M. Sc. and Ph. D.* in Physics, University of Wisconsin, Madison, WI, USA

1993 *Summer Student*, CERN, Geneva, Switzerland

1993 *Exchange Student*, Yale University, New Haven, CT, USA

1990–1995 *Diploma with Excellence* in Physics,  
Lomonosov Moscow State University, Moscow, Russia

## Research Experience

2003–2010 *Assistant Research Scientist*, University of Maryland

### **Biointerface Science, Nanobiotechnology, and Biosensors**

#### *DNA Biointerfaces*

- DNA immobilization and hybridization on surfaces.
- Rational design of DNA biointerfaces with novel and controlled properties.
- DNA nanobiotechnology and biosensors.
- Spectroscopy and analysis of DNA biointerfaces: XPS, FTIR, NEXAFS, SPR, QCM.

#### *Peptide and Protein Biointerfaces*

- Design of model peptides for controlled surface immobilization.
- Quantitative analysis of peptide biointerfaces: XPS, NEXAFS.
- Structural analysis for peptides in solution and on surfaces: IR, CD, VCD, SFG.

## **Functionalization and Passivation of Metals, Semiconductors, Polymers, and Devices**

- Chemical and electronic passivation of III-V semiconductor surfaces and devices.
- Protective and functional self-assembled monolayers on InAs, Au, and Pt.
- Chemical analysis and depth profiling of plasma-modified polymers.

## **Advanced X-ray Photoelectron Spectroscopy (XPS)**

- Chemical and structural analysis of semiconductors, polymers, and devices.
- Analysis of oxidation and wear on tribological metal surfaces.
- Quantitative analysis of complex, biological, and nanostructured materials.
- Chemical imaging of surfaces, including polymers, fibers, and biological assays.

## **Science Management, Collaborations, and Impact**

- Co-PI on multi-year projects funded by the US Air Force Office of Scientific Research (AFOSR) under the program on *Natural Materials, Systems, and Extremophiles* (formerly *Biomimetics, Biomaterials, and Biointerfacial Sciences*): “Characterization and Analysis of DNA Immobilization on Surfaces” in 2002–2005 and “Fundamentals of Peptide-Surface Interactions” in 2006–2010. Coauthored proposals, managed ongoing research activities, prepared progress reports, presentations, and publications.
- Established and maintained several successful long-term multi-institution collaborations, which included universities and laboratories from the US, Europe, and Japan as well as US Department of Defense (DoD) and Department of Commerce (DoC).
- With DoD collaborators, coauthored multiple proposals for internal research projects funded by DoD agencies. Shared managing and reporting responsibilities for the resulting collaborative projects.
- Trained, supervised, and mentored postdocs and summer students.
- Maintained a shared XPS facility, developed training materials and operating manuals, trained over 40 postdocs and researchers as XPS users.
- Coauthored 18 publications (11 as corresponding author), including a book chapter and two invited mini-reviews. The papers on DNA biointerfaces have been cited collectively over 450 times and featured in *Analytical Currents*, *ALS Highlights*, US Department of Energy presentations, and in professional press.
- Coauthored over 80 presentations, including over 10 invited talks at international conferences and at universities and laboratories in the US, Canada, Europe, and Japan.

## Research Experience (Continued)

2000–2003    *Research Associate*, University of Maryland,  
postdoctoral advisor Prof. Ellen D. Williams

### DNA Biointerfaces and Biosensors

- Established and validated quantitative XPS analysis for DNA films.
- Provided surface analysis support for development of several biosensor platforms.
- Successfully carried out several short-term collaborative interdisciplinary projects that involved physicists, chemists, biologists, and engineers.

### Passivation of Semiconductor Surfaces and Devices

- Coauthored a proposal funded by the US National Nanotechnology Initiative.
- Developed two new methods for electronic and chemical passivation of InAs.
- Adapted multiple electron spectroscopy methods (XPS, ARXPS, UPS, and LPS) for quantitative analysis of chemistry and structure for passivated InAs surfaces.

### Productivity and Impact

- The development of XPS analysis for DNA films was recognized in 2003 by the *Best Paper* award at the *International Symposium on Applied Surface Analysis*.
- Two main papers on analysis of DNA published in *JACS* in 2003 (one highlighted in *Science* as Editor's Choice); these two papers have been cited nearly 300 times.
- Coauthored 16 presentations and 10 publications, including an invited review and a *Nanotechnology* paper that received worldwide media coverage.

1996–2000    *Research Assistant*, University of Wisconsin,  
Ph. D. advisor Prof. Franz J. Himpsel  
Ph. D. Thesis: Self-Assembled Nanostructures on Vicinal Surfaces

### Self-Assembled Nanostructures on Silicon Surfaces

- Atomic memory at the storage density limit predicted by Feynman in 1959.
- Silicon templates with a record (held for 10 years) low density of step defects.
- Self-assembled nanowires and nanodots on vicinal silicon surfaces.
- New 2D growth mode (without 3D analogs) on vicinal surfaces.
- STM and photoelectron spectroscopy of atomic wires on vicinal silicon surfaces.
- Low-dimensional physics: fractional bands, split 1D states, 1D–2D transitions.

## **Metal and Magnetic Surfaces**

- First measurement of the spin-dependent band structure of permalloy.
- First use of synchrotron-based photoemission for determining spin-dependent mean free paths of conducting electrons in nickel and permalloy.
- STM of self-assembled nanowires on vicinal metal surfaces.

## **Productivity and Impact**

- Coauthored 17 publications, including two invited reviews.
- Coauthored 19 presentations, including 2 invited talks.
- The talk on Ph. D. project research was recognized in 1999 by the *Best Student Paper* award from the Nanometer Scale Science and Technology Division (NSTD) of the AVS.

## **Awards and Scholarships**

2003 *Best Paper*, Surface Analysis 2003, AVS

1999 *Best Student Paper*, Nanometer-scale Science and Technology Division, AVS

1995 *Soros Student Scholarship*, Open Society Institute and Soros Foundation

1994 *Scientific Council Scholarship*, Lomonosov Moscow State University, Russia

## **Professional Service and Society Membership**

- AVS Science and Technology Society (AVS)
- American Physical Society (APS)
- Materials Research Society (MRS)

2010 Vice chair, Subcommittee on XPS and AES,  
Committee on Surface Analysis (E42), ASTM International

2009 Reviewer for *Center for Functional Nanomaterials*  
at Brookhaven National Laboratory, NY, USA

2003 Local arrangements committee for AVS International Symposium

# Publications

Dmitri Y. Petrovykh has coauthored 61 publications, including 7 invited papers and reviews, and a chapter in *Encyclopedia of Nanoscience and Nanotechnology*. These publications have been collectively cited > 2600 times, for an *h*-index of 29.

A \* mark in the following list indicates corresponding (co)authorship for Dmitri Petrovykh.

## **Bifunctional Nickel Phosphide Nanocatalysts Supported on Carbon Fiber Paper for Highly Efficient and Stable Overall Water Splitting**

X. Wang, W. Li, D. Xiong, D. Y. Petrovykh, L. Liu,  
*Advanced Functional Materials* **26**, 4067 (2016).

Impact factor: 11.8, citations: **20**. DOI: 10.1002/adfm.201505509

## **Synthesis and Characterization of Reduced Graphene Oxide/Spiky Nickel Nanocomposite for Nanoelectronic Applications**

M. Salimian, M. Ivanov, F. L. Deepak, D. Y. Petrovykh,  
I. Bdikin, M. Ferro, A. Kholkin, E. Titus, G. Goncalves,  
*Journal of Materials Chemistry C* **3**, 11516 (2015).

Impact factor: 4.696, citations: **3**. DOI: 10.1039/C5TC02619A

## **Up-scaling the Synthesis of Cu<sub>2</sub>O Submicron Particles with Controlled Morphologies for Solar H<sub>2</sub> Evolution from Water**

E. Carbó-Argibay, X.-Q. Bao, C. Rodríguez-Abreu, M. F. Cerqueira,  
D. Y. Petrovykh, L. Liu, Y. V. Kolen'ko,  
*Journal of Colloid and Interface Science* **456**, 219 (2015).

Impact factor: 3.368, citations: **5**. DOI: 10.1016/j.jcis.2015.06.014

## **Amorphous Oxygen-rich Molybdenum Oxysulfide Decorated p-type Silicon Microwire Arrays for Efficient Photoelectrochemical Water Reduction**

X.-Q. Bao, D. Y. Petrovykh, P. Alpuim, D. G. Stroppa,  
N. Guldris, H. Fonseca, M. Costa, J. Gaspar, C. Jin, L. Liu,  
*Nano Energy* **16**, 130 (2015).

Impact factor: 10.325, citations: **7**. DOI: 10.1016/j.nanoen.2015.06.014

## **Analytical Protocols for Separation and Electron Microscopy of Nanoparticles Interacting with Bacterial Cells**

C. Sousa, Diana Sequeira, Y. V. Kolen'ko, I. M. Pinto, D. Y. Petrovykh\*  
*Analytical Chemistry* **87**, 4641 (2015).

Impact factor: 5.695, citations: **3**. DOI: 10.1021/ac503835a

### **High-Temperature Magnetism as a Probe for Structural and Compositional Uniformity in Ligand-Capped Magnetite Nanoparticles**

Y. V. Kolen'ko, M. Bañobre-López, C. Rodriguez-Abreu, E. Carbo-Argibay, F. L. Deepak, D. Y. Petrovykh, M. F. Cerqueira, S. Kamali, K. Kovnir, O. I. Lebedev, J. Rivas  
*Journal of Physical Chemistry C* **118**, 28322 (2014).

Impact factor: 4.814, citations: 5. DOI: 10.1021/jp5106949

### **Large-Scale Synthesis of Colloidal Fe<sub>3</sub>O<sub>4</sub> Nanoparticles Exhibiting High Heating Efficiency in Magnetic Hyperthermia**

Y. V. Kolen'ko, M. Bañobre-López, C. Rodriguez-Abreu, E. Carbo-Argibay, A. Sailsman, Y. Piñeiro-Redondo, M. F. Guimarães Cerqueira, D. Y. Petrovykh, K. Kovnir, O. I. Lebedev, J. Rivas  
*Journal of Physical Chemistry C* **118**, 8691 (2014).

Impact factor: 4.814, citations: 43. DOI: 10.1021/jp500816u

### **Synthesis and Characterization of Microporous Aluminophosphates of AFI Topology**

R. W. Dorner, N. J. Begue, D. Y. Petrovykh, D. R. Hardy, F. W. Williams, G. W. Mushrush, H. D. Willauer,  
*Petroleum Science and Technology* **32**, 1375 (2014).

Impact factor: 10.677, citations: 1. DOI: 10.1080/10916466.2011.641652

### **Residue-Dependent Adsorption of Model Oligopeptides on Gold**

K. P. Fears, T. D. Clark,\* D. Y. Petrovykh\*  
*Journal of the American Chemical Society* **135**, 15040 (2013).

Impact factor: 10.677, citations: 9. DOI: 10.1021/ja404346p

### **Evaluating Protocols and Analytical Methods for Peptide Adsorption Experiments**

K. P. Fears, D. Y. Petrovykh,\* T. D. Clark\*  
*Biointerphases* **8**, 20 (2013).

Impact factor: 1.91, citations: 2. DOI: 10.1186/1559-4106-8-20

### **Nickel Foam Supported Mesoporous MnO<sub>2</sub> Nanosheet Arrays with Superior Lithium Storage Performance**

M. Kundu, C. C. A. Ng, D. Y. Petrovykh, L. Liu  
*Chemical Communications* **49**, 8459 (2013).

Impact factor: 6.378, citations: 46. DOI: 10.1039/c3cc44079f

### **Circular Dichroism Analysis of Cyclic $\beta$ -Helical Peptides Adsorbed on Planar Fused Quartz**

K. P. Fears, D. Y. Petrovykh, S. J. Photiadis, T. D. Clark  
*Langmuir* **29**, 10095 (2013).

Impact factor: 4.187, citations: 11. DOI: 10.1021/la401544c

### **Divalent-Anion Salt Effects in Polyelectrolyte Multilayer Depositions**

W. J. Dressick,\* K. J. Wahl, N. D. Bassim, R. M. Stroud, D. Y. Petrovykh\*  
*Langmuir* **28**, 15831 (2012).

Impact factor: 4.187, citations: **15**. DOI: 10.1021/la3033176

### **Layer-by-Layer Assembly of Heterogeneous Modular Nanocomposites**

N. D. Bassim, W. J. Dressick, K. P. Fears, R. M. Stroud, T. D. Clark, D. Y. Petrovykh\*  
*Journal of Physical Chemistry C* **116**, 1694 (2012).

Impact factor: 4.814, citations: **16**. DOI: 10.1021/jp207912b

### **Scanning Transmission Electron Microscopy (STEM) Tomography of Layer-by-Layer PAH/PSS-Au Nanocomposite Structures**

N. D. Bassim, A. Herzing, W. J. Dressick, K. J. Wahl,  
D. Y. Petrovykh, K. P. Fears, R. M. Stroud, T. D. Clark  
*Microscopy and Microanalysis* **17**(S2), 1012 (2011).

Impact factor: 2.495, citations: **0**. DOI: 10.1017/S1431927611005939

### **Impact of DNA–Surface Interactions on the Stability of DNA Hybrids**

S. M. Schreiner, A. L. Hatch, D. F. Shudy, D. R. Howard, C. Howell, J. Zhao, P. Koelsch, M. Zharnikov,  
D. Y. Petrovykh,\* A. Opdahl\*  
*Analytical Chemistry* **83**, 4288 (2011).

Impact factor: 5.695, citations: **38**. DOI: 10.1021/ac200814y

### **Vibrational Circular-Dichroism Spectroscopy of Homologous Cyclic Peptides Designed to Fold into $\beta$ Helices of Opposite Chirality**

J. L. Kulp III, J. C. Owrutsky, D. Y. Petrovykh, K. P. Fears, R. Lombardi, L. A. Nafie, T. D. Clark  
*Biointerphases* **6**, 1 (2011).

Impact factor: 1.91, citations: **4**. DOI: 10.1116/1.3548075

### **Surface Composition, Chemistry, and Structure of Polystyrene Modified by Electron-Beam-Generated Plasma**

E. H. Lock, D. Y. Petrovykh, P. Mack, T. Carney, R. G. White, S. G. Walton, R. F. Fernsler  
*Langmuir* **26**, 8857 (2010).

Impact factor: 4.187, citations: **58**. DOI: 10.1021/la9046337

### **Controlled and Efficient Hybridization Achieved with DNA Probes Immobilized Solely through Preferential DNA–Substrate Interactions**

S. M. Schreiner, D. F. Shudy, A. L. Hatch, A. Opdahl,\* L. J. Whitman, D. Y. Petrovykh\*  
*Analytical Chemistry* **82**, 2803 (2010).

Impact factor: 5.695, citations: **35**. DOI: 10.1021/ac902765g

### **Self-Assembled Monolayers of Alkanethiols on InAs**

D. Y. Petrovykh,\* J. C. Smith, T. D. Clark, R. Stine, L. A. Baker, L. J. Whitman  
*Langmuir* **25**, 12185 (2009).

Impact factor: 4.187, citations: **23**. DOI: 10.1021/la804314j

### **Passivation of GaSb and InAs by pH-activated Thioacetamide**

R. Stine, E. H. Aifer, L. J. Whitman, D. Y. Petrovykh\*  
*Applied Surface Science* **255**, 7121 (2009).

Impact factor: 2.112, citations: **18**. DOI: 10.1016/j.apsusc.2009.03.010

### **Oriented Self-Assembled Monolayers of Bifunctional Molecules on InAs**

R. Stine, D. Y. Petrovykh\*  
*Journal of Electron Spectroscopy and Related Phenomena* **172**, 42 (2009).

Impact factor: 1.706, citations: **28**. DOI: 10.1016/j.elspec.2009.02.001

### **Characterization and Controlled Properties of DNA Immobilized on Gold Surfaces**

H. Kimura-Suda, A. Opdahl, M. J. Tarlov, L. J. Whitman, D. Y. Petrovykh  
*Kobunshi Ronbunshu (The Society of Polymer Science, Japan)* **65**, 46 (2008).

Impact factor: 0.22, citations: **1**.

### **Self-Assembly of Biomolecules at Surfaces Characterized by NEXAFS**

X. Liu, F. Zheng, A. Jürgensen, V. Pérez-Dieste, D. Y. Petrovykh, N. L. Abbott, F. J. Himpsel  
*Canadian Journal of Chemistry* **85**, 793 (2007).

Impact factor: 0.964, citations: **12**. DOI: 10.1139/V07-079

### **Passivation of W-structured Type-II Superlattice Long-Wave Infrared Photodiodes**

E. H. Aifer, J. H. Warner, R. R. Stine, I. Vurgaftman, C. L. Canedy, E. M. Jackson,  
J. G. Tischler, J. R. Meyer, D. Y. Petrovykh, L. J. Whitman  
*Proceedings of SPIE* **6542**, 654203 (2007).

Impact factor: 0.722, citations: **4**. DOI: 10.1117/12.723428



### **Independent Control of Grafting Density and Conformation of ssDNA Brushes**

A. Opdahl,\* D. Y. Petrovykh,\* H. Kimura-Suda, M. J. Tarlov, L. J. Whitman  
*Proceedings of the National Academy of Sciences USA* **104**, 9 (2007).

Impact factor: 9.737, citations: **102**. DOI: 10.1073/pnas.0608568103

### **Alkanethiols on Platinum: Multicomponent Self-Assembled Monolayers**

D. Y. Petrovykh,\* H. Kimura-Suda, A. Opdahl, L. J. Richter, M. J. Tarlov, L. J. Whitman  
*Langmuir* **22**, 2578 (2006).

Impact factor: 4.187, citations: **74**. DOI: 10.1021/la050928a

### **Nucleobase Orientation and Ordering in Films of Single-Stranded DNA on Gold**

D. Y. Petrovykh,\* V. Pérez-Dieste, A. Opdahl, H. Kimura-Suda,  
J. M. Sullivan, M. J. Tarlov, F. J. Himpsel, L. J. Whitman  
*Journal of the American Chemical Society* **128**, 2 (2006).

Impact factor: 10.677, citations: **84**. DOI: 10.1021/ja052443e

### **Quantification of Discrete Oxide and Sulfur Layers on S-Passivated InAs by XPS**

D. Y. Petrovykh,\* J. M. Sullivan, L. J. Whitman  
*Surface and Interface Analysis* **37**, 989 (2005).

Impact factor: 1.22, citations: **29**. DOI: 10.1002/sia.2095

### **Surface Passivation of InAs(001) with Thioacetamide**

D. Y. Petrovykh,\* J. P. Long, L. J. Whitman\*  
*Applied Physics Letters* **86**, 242105 (2005).

Impact factor: 3.794, citations: **23**. DOI: 10.1063/1.1946182

### **Self-Assembled Nanostructures at Silicon Surfaces,**

D. Y. Petrovykh and F. J. Himpsel  
in *Encyclopedia of Nanoscience and Nanotechnology*, H. S. Nalwa, Ed., Vol. **9**, p. 497 (2004).

### **Stepped Silicon Surfaces as Templates for One-Dimensional Nanostructures**

F. J. Himpsel, J. L. McChesney, J. N. Crain, A. Kirakosian, V. Pérez-Dieste,  
N. L. Abbott, Y.-Y. Luk, P. F. Nealey, D. Y. Petrovykh  
*Journal of Physical Chemistry B* **108**, 14484 (2004).

Impact factor: 3.607, citations: **27**. DOI: 10.1021/jp049209f

### **Quantitative Characterization of DNA Films by X-ray Photoelectron Spectroscopy**

D. Y. Petrovykh,\* H. Kimura-Suda, M. J. Tarlov, L. J. Whitman  
*Langmuir* **20**, 429 (2004).

Impact factor: 4.187, citations: **144**. DOI: 10.1021/la034944o

### **Base-Dependent Competitive Adsorption of Single-Stranded DNA on Gold**

H. Kimura-Suda, D. Y. Petrovykh, M. J. Tarlov, L. J. Whitman  
*Journal of the American Chemical Society* **125**, 9014 (2003).

Impact factor: 10.677, citations: **222**. DOI: 10.1021/ja035756n

### **Silicon Adatoms on the Si(111)5×2 Au Surface**

A. Kirakosian, J. N. Crain, J. L. Lin, J. L. McChesney, D. Y. Petrovykh, F. J. Himpsel, R. Bennewitz  
*Surface Science* **532**, 928 (2003).

Impact factor: 1.838, citations: **31**. DOI: 10.1016/S0039-6028(03)00097-9

### **Quantitative Analysis and Characterization of DNA Immobilized on Gold**

D. Y. Petrovykh,\* H. Kimura-Suda, L. J. Whitman, M. J. Tarlov  
*Journal of the American Chemical Society* **125**, 5219 (2003).

Impact factor: 10.677, citations: **267**. DOI: 10.1021/ja029450c

### **Chemical and Electronic Properties of Sulfur-Passivated InAs Surfaces**

D. Y. Petrovykh,\* M. J. Yang, L. J. Whitman  
*Surface Science* **523**, 231 (2003).

Impact factor: 1.838, citations: **87**. DOI: 10.1016/S0039-6028(02)02411-1

### **Atomic Scale Memory at a Silicon Surface**

R. Bennewitz, J. N. Crain, A. Kirakosian, J. L. Lin, J. L. McChesney, D. Y. Petrovykh, F. J. Himpsel  
*Nanotechnology* **13**, 499 (2002).

Impact factor: 3.842, citations: **74**. DOI: 10.1088/0957-4484/13/4/312

### **Single Domain Ca-induced Reconstruction on Vicinal Si(111)**

D. Y. Petrovykh,\* K. N. Altmann, J. L. Lin, F. J. Himpsel,\* F. M. Leibsle  
*Surface Science* **512**, 269 (2002).

Impact factor: 1.838, citations: **27**. DOI: 10.1016/S0039-6028(02)01693-X

### **Functionalization of Si Step Arrays I: Au Passivation of Stepped Si(111) Templates**

A. Kirakosian, J. L. Lin, D. Y. Petrovykh, J. N. Crain, F. J. Himpsel  
*Journal of Applied Physics* **90**, 3286 (2001).

Impact factor: 2.21, citations: **27**. DOI: 10.1063/1.1397288

### **Atomically Accurate Si Grating with 5.73 nm Period**

A. Kirakosian, R. Bennewitz, J. N. Crain, Th. Fauster, J. L. Lin, D. Y. Petrovykh, F. J. Himpsel  
*Applied Physics Letters* **79**, 1608 (2001).

Impact factor: 3.794, citations: **95**. DOI: 10.1063/1.1401788

### **Electronic Structure of Atomic Chains on Vicinal Si(111)-Au**

K. N. Altmann, J. N. Crain, A. Kirakosian, J. L. Lin, D. Y. Petrovykh, F. J. Himpsel, R. Losio  
*Physical Review B* **64**, 035406 (2001).

Impact factor: 3.767, citations: **115**. DOI: 10.1103/PhysRevB.64.035406

### **Band Splitting for Si(557)-Au: Is It Spin-Charge Separation?**

R. Losio, K. N. Altmann, A. Kirakosian, J. L. Lin, D. Y. Petrovykh, F. J. Himpsel  
*Physical Review Letters* **86**, 4632 (2001).

Impact factor: 7.943, citations: **188**. DOI: 10.1103/PhysRevLett.86.4632

### **Self-Assembled Fe Nanowires Using Organometallic Chemical Vapor Deposition and CaF<sub>2</sub> Masks on Stepped Si(111)**

J. L. Lin, D. Y. Petrovykh, A. Kirakosian, H. Rauscher, F. J. Himpsel, P. A. Dowben  
*Applied Physics Letters* **78**, 829 (2001).

Impact factor: 3.794, citations: **56**. DOI: 10.1063/1.1345830

### **Self-Assembly of One-Dimensional Nanostructures at Silicon Surfaces**

F. J. Himpsel, A. Kirakosian, J. N. Crain, J. L. Lin, D. Y. Petrovykh  
*Solid State Communications* **117**, 149 (2001).

Impact factor: 1.941, citations: **71**. DOI: 10.1016/S0038-1098(00)00441-5

### **Creation of "Quantum Platelets" via Strain-Controlled Self-Organization at Steps**

A. Li, F. Liu, D. Y. Petrovykh, J. L. Lin, J. Viernow, F. J. Himpsel, M. G. Lagally  
*Physical Review Letters* **85**, 5380 (2000).

Impact factor: 7.943, citations: **40**. DOI: 10.1103/PhysRevLett.85.5380

### **Alignment of Liquid Crystals on Stepped and Passivated Silicon Templates Prepared in Ultrahigh Vacuum**

E. H. Lay, A. Kirakosian, J. L. Lin,  
D. Y. Petrovykh, J. N. Crain, F. J. Himpsel, R. R. Shah, N. L. Abbott  
*Langmuir* **16**, 6731 (2000).

Impact factor: 4.187, citations: **10**. DOI: 10.1021/la000002x

### **Enhanced Spin Polarization of Conduction Electrons in Ni Explained by Comparison with Cu**

K. N. Altmann, D. Y. Petrovykh, G. J. Mankey, N. Shannon, N. Gilman,  
M. Hochstrasser, R. F. Willis, F. J. Himpsel,  
*Physical Review B* **61**, 15661 (2000).

Impact factor: 3.767, citations: **16**. DOI: 10.1103/PhysRevB.61.15661

### **Electronic States in Magnetic Nanostructures**

F. J. Himpsel, K. N. Altmann, G. J. Mankey, J. E. Ortega, D. Y. Petrovykh  
*Journal of Magnetism and Magnetic Materials* **200**, 456 (1999).

Impact factor: 1.826, citations: **19**. DOI: 10.1016/S0304-8853(99)00349-2

### **High Resolution Photoemission Study of the Spin-Dependent Band Structure of Permalloy and Ni**

K. N. Altmann, D. Y. Petrovykh, F. J. Himpsel  
*Surface Science Spectra* **6**, 255 (1999). DOI: 10.1116/1.1247929

### **Nanowires by Step Decoration**

F. J. Himpsel, T. Jung, A. Kirakosian, J. L. Lin, D. Y. Petrovykh, H. Rauscher, J. Viernow  
*MRS Bulletin* **24**, 20 (1999).

Impact factor: 5.6, citations: **43**.

### **Self-Assembled CaF<sub>2</sub> Nanostructures on Silicon**

D. Y. Petrovykh,\* J. Viernow, J. L. Lin, F. M. Leibsle, F. K. Men, A. Kirakosian, F. J. Himpsel<sup>†</sup>  
*Journal of Vacuum Science and Technology A* **17**, 1415 (1999).

Impact factor: 1.432, citations: **5**. DOI: 10.1116/1.581916

### **Chemical Imaging of Insulators by STM**

J. Viernow, D. Y. Petrovykh, A. Kirakosian, J. L. Lin, F. K. Men, M. Henzler, F. J. Himpsel  
*Physical Review B* **59**, 10356 (1999).

Impact factor: 3.767, citations: **43**. DOI: 10.1103/PhysRevB.59.10356

### **Linear Arrays of CaF<sub>2</sub> Nanostructures on Si**

J. Viernow, D. Y. Petrovykh, F. K. Men, A. Kirakosian, J. L. Lin, F. J. Himpsel  
*Applied Physics Letters* **74**, 2125 (1999).

Impact factor: 3.794, citations: **62**. DOI: 10.1063/1.123777

### **Connection between Structure and Electronic Properties in Epitaxial Magnetic Layers**

K. N. Altmann, J. A. Con Foo, F. J. Himpsel, J. F. Kelly, M. G. Lagally, J. F. MacKay, W. L. O'Brien, J. E. Ortega, D. Y. Petrovykh  
*MRS Symposium Proceedings* **570**, 141 (1999).

Citations: **2**.

### **Spin-Dependent Band Structure, Fermi Surface, and Carrier Lifetime of Permalloy**

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Impact factor: 3.794, citations: **65**. DOI: 10.1063/1.122796

### **Formation of Regular Step Arrays on Si(111)7×7**

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### **Width Distribution of Nanowires Grown by Step Decoration**

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### **Regular Step Arrays on Silicon**

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### **Unoccupied Surface States on Si(111)√3×√3-Ag**

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### **LSO-Ce Fluorescence Spectra and Kinetics for UV, VUV and X-Ray Excitation**

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