**ANDREI SIRENKO**

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## EDUCATION and TRAINING

**Ph.D. 1993** Experimental Physics, Ioffe Physical Technical Institute, St. Petersburg, Russia
**M.S. 1987** Optoelectronic Devices, Electrical Engineering University, St. Petersburg, Russia

## RESEARCH and PROFESSIONAL EXPERIENCE:

**2011 – present Professor**
*Department of Physics, New Jersey Institute of Technology, Newark, NJ*

Research activity: Materials science of magnetic and ferroelectric oxides, semiconductor nanostructures, optoelectronic device design, and characterization of monolithically-integrated GaN- and InP-based optoelectronic devices. Primary research interest is in the field of far-IR Ellipsometry, Transmission, and Raman Spectroscopy, Nanoscale High-Angular Resolution X-ray Diffraction, X-ray Standing Waves, and micro-Photoluminescence.
PhD students: Eric Standard and Roman Basisty, NJIT
Postdocs: Tae Dong Kang and Taras Stanislavchuk
Former PhD student: Sean O'Malley, Assistant Professor at Rutgers U., Camden, NJ
Paul Rogers

**2008 – 2011 Associate Professor / tenure**
*Department of Physics, New Jersey Institute of Technology, Newark, NJ*

**2003 – 2008 Assistant Professor**
*Department of Physics, New Jersey Institute of Technology, Newark, NJ*

**2000 – 2003 Member of Technical Staff**
*Bell Labs Lucent Technologies / Agere Systems / TriQuint Semiconductors*
*Photonics Research Department, Optoelectronics Center, Breinigsville, PA*

**1998 – 2000 Postdoctoral Fellow**
*Department of Physics, Pennsylvania State University, University Park, PA*
**with Prof. X.X. Xi**

**1994 – 1997 Visiting Scientist / AvHumboldt Fellowship**
*Max-Planck Institute for Solid State Research, Stuttgart, Germany*
**with Prof. M. Cardona**
**1995 – 1997** Fellowship from the Alexander von Humboldt Foundation
**1994** Fellowship from the Volkswagen Foundation

**1987 – 1993 PhD student / Research Assistant**
*A. F. Ioffe Physical Technical Institute, St. Petersburg, Russia*
**Ph. D. Thesis Advisor: Prof. D. N. Mirlin**
**1993** Personal Grant from the International Science Foundation
**1992** Personal Grant from the American Physical Society

## COLLABORATORS in the LAST FOUR YEARS

S-W. Cheong and V. Kiryukhin (Rutgers University), A. Ougazzaden (Georgia Tech, Metz), A. Kazimirov (CHESS, Cornell University), G. L. Carr (Brookhaven National Laboratory), Z.-H. Cai (Advanced Photon Source, Argonne National Lab), Christian Bernhard, Uni. Fribourg (Switzerland)

## SELECTED PUBLICATIONS


- A. A. Sirenko, C. Bernhard, A. Golnik, Anna M. Clark, Jianhua Hao, Weidong Si, and X. X. Xi, *"Soft-mode hardening in $SrTiO_3$ thin films"*, Nature, **404**, 373 (2000).
- Akimov, A. A. Sirenko, A. M. Clark, J.-H. Hao, and X. X. Xi, *"Electric field-induced soft-mode hardening in $SrTiO_3$ films"*, Phys. Rev. Lett., **84**, 4625 (2000).
- A. A. Sirenko, I. A. Akimov, J. R. Fox, A. M. Clark, Hong-Cheng Li, Weidong Si, and X. X. Xi, ``*Observation of the first-order Raman scattering in $SrTiO_3$ thin films"*, Phys. Rev. Lett. **82**, 4500 (1999).
- A. A. Sirenko, S. M. O'Malley, and K. H. Ahn, S. Park, G. L. Carr, and S-W. Cheong, *"Infrared-active excitations related to $Ho^{3+}$ ligand-field splitting at the commensurate-incommensurate magnetic phase transition in $HoMn_2O_5$"*, Phys. Rev. B **78**, 174405 (2008).
- X. X. Xi, Hong-Cheng Li, Weidong Si, and A. A. Sirenko, "*Dielectric properties and applications of strontium titanate thin films for tunable electronics"*, Nano-Crystalline and Thin Film Magnetic Oxides, Edited by I. Nedkov and M. Ausloos (Kluwer Academic Publishers. Printed in Netherlands, 1999), 195-208.
- S. M. O'Malley, P. L. Bonanno, K. H. Ahn, A. A. Sirenko, A. Kazimirov, S. Park and S-W. Cheong, "*Epitaxial checkerboard arrangement of nanorods in $ZnMnGaO_4$ films studied by x-ray diffraction*", Phys. Rev. B **78**, 165424 (2008).
- S. Park, Y. Horibe, T. Asada, L. S. Wielunski, N. Lee, P. L. Bonanno, S. M. O'Malley, A. A. Sirenko, A. Kazimirov, M. Tanimura, T. Gustafsson, and S-W. Cheong, "*Highly Aligned Epitaxial Nanorods with a Checkerboard Pattern in Oxide Films*, Nano Lett. **8**, 720-724 (2008).
- A. A. Sirenko, V. I. Belitsky, T. Ruf, M. Cardona, A. I. Ekimov, and C. Trallero-Giner, ``*Spin-flip and acoustic-phonon Raman scattering in CdS nanocrystals"*, Phys. Rev. B **58**, 2077 (1998).


## SINERGETIC ACTIVITIES

PI in the current beam-time proposals at the National Synchrotron Light Source, Brookhaven National Lab.