

## SERGEI A. IVANOV

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*Sergei A. Ivanov* is Technical Staff Member at the Center for Integrated Nanotechnologies, MPA-CINT, LANL. Ivanov received his diploma of higher education (*summa cum laude*, 1997) from Moscow State University, Russia, and his Ph.D. in Inorganic Chemistry (2002) from University of Wisconsin-Madison, where he studied with Prof. Lawrence F. Dahl. Sergei received a Director's Funded Postdoctoral Fellowship (2002-2004) to work at the Softmatter Nanotechnology and Advanced Spectroscopy team with Dr. Victor Klimov at C-PCS at LANL. In 2006, Sergei has joined CINT as a technical staff member at MPA-CINT at LANL. Ivanov is a (co)author of 27 research papers in peer-reviewed journals.

**Expertise:** Synthetic chemistry of molecular metal nanoclusters and colloidal semiconductor nanocrystals, nanocrystal wavefunction engineering via core/shell approach and doping with transition metal ions. Extensive experience in synthesis and handling of air- and moisture-sensitive compounds; strong knowledge and experience in computational chemistry, solid state physics.

### Publications

1. *Light Amplification Using Inverted Core/Shell Nanocrystals: Towards Lasing in the Single-Exciton Regime.* S. A. Ivanov, J. Nanda, A. Piryatinski, M. Achermann, L. P. Balet, I.V. Bezel, P.O. Anikeeva, S. Tretiak, and V.I. Klimov, *J. Phys. Chem. B.* 108, 10625 (2004)
2. *Inverted Core/Shell Nanocrystals Continuously Tunable between Type-I and Type-II Localization Regimes,* L. P. Balet, S. A. Ivanov, A. Piryatinski, M. Achermann, and V. I. Klimov. *Nanoletters* 4(8), 1485 (2004)
3. *Nanosized  $[Pd_{52}(CO)_{36}(PEt_3)_{14}]$  and  $[Pd_{66}(CO)_{45}(PEt_3)_{16}]$  Clusters Based on a Hypothetical  $Pd(38)$  Vertex-Truncated  $v_3$  Octahedron,* E. G. Mednikov, S. A. Ivanov, I. V. Slovokhotova, and L.F. Dahl, *Angew. Chem. Int. Ed.*, 44(42), 69848 (2005)
4. *Absorption cross sections and Auger recombination lifetimes in inverted core/shell nanocrystals: Implications for lasing performance,* J. Nanda, S. A. Ivanov, H. Htoon, I.V. Bezel, A. Piryatinski, S. Tretiak, and V.I. Klimov *J. Appl. Phys.* 99(3), 034309 (2006)
5. *Effect of Quantum and Dielectric Confinement on the Exciton-Exciton Interaction Energy in Type II Core/Shell Semiconductor Nanocrystals,* A. Piryatinski, S. A. Ivanov, S. Tretiak, and V.I. Klimov *Nano Letters* 7(1), 108 (2007)
6. *Type-II Core/Shell CdS/ZnSe Nanocrystals: Synthesis, Electronic Structures, and Spectroscopic Properties,* S. A. Ivanov, A. Piryatinski, J. Nanda, S. Tretiak, K. R. Zavadil, W. O. Wallace, D. Werder, and V. I. Klimov *J. Am. Chem. Soc.*, 129 (38), 11708 (2007)
7. *Single-exciton optical gain in semiconductor nanocrystals,* V. I. Klimov, S. A. Ivanov, J. Nanda, M. Achermann, I. Bezel, J. A. McGuire, A. Piryatinski *Nature* 447, 441(2007)
8. *Effect of Surface Ligands on Optical and Electronic Spectra of Semiconductor Nanoclusters,* S. Kilina, S. A. Ivanov, S. Tretiak *J. Am. Chem. Soc.*, 131 (22), 7717 (2009)
9. Collaborators: Sandia National Laboratories: Dr. D. Huber; Los Alamos National Lab: Dr. J. Hollingsworth, Dr. J. Martinez, Dr. J. Pietryga, Dr. S. Tretiak.