CURRICULUM VITAE OF PROF. DR. PAVEL V. AVRAMOV

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1993/up to now	Research investigator, Senior research investigator, Head of the quantum chemistry group	Institute of Physics of the Russian Academy of Sciences, Krasnoyarsk, Russia
856/859	Assistant professor	Chair of inorganic Chemistry, Chair of Physical Chemistry, Krasnoyarsk State University, Russia
2002-2003	Research Scientist	Rice University, Houston, USA
2003-2004	Visiting Professor	Ames National Laboratory, ISU, USA
2005/up to now	JAEA Research Fellow	Japan Atomic Energy Agency (*before October 1, 2005 - Japan Atomic Energy Research Institute*), Takasaki-branch, Advanced Science Research Center

Specialization: Theoretical chemistry, numerical quantum chemistry, X-ray and electron spectroscopy, electron structure of High temperature superconductors, electronic structure of elementary carbon and silicon/silica nanoclusters, dynamics of the atomic base of carbon nanoclusters and their derivatives.

Honors, Awards, Fellowships, Memberships of Professional Societies:

Date	Award
1993	Member of International XAFS society
1994	Winner of the European Academy Prize in Physics
1994	International Science Foundation Award
1995	The head of the ISF collective grant
1997-1998	The head of the Russian State Fundamental Research Foundation Grant #97-03-33684a.
1998-2000	The head of the Russian State Program Grant “Russian Universities – Basic Research”, Grant #2049
1999-2001	The head of the HTSC State Program Grant #99019
1999	The head of the NATO Collaborative Research Grant #PST.CLG 974818
2002-2003	A participant of award number EEC-0118007 (Rice University CBEN, USA) of Nanoscale Science and Engineering Initiative of the National Science Foundation.
2003-2004	A participant of a grant of Air Force Office of Scientific Research (USA)
2005-now	JAERI/JAEA Research Fellowship for Distinguished World Scientists
2005	WATOC life-time member
2006	A member of American Chemical Society
2006	APATCC life-time member
2007	Referee board of Journal of Physical Chemistry
2007	A member of Japanese Society of Applied Physics (0071131)

1988-now	Grants of Russian State HTSC program, RFBR, KRFR, ISF, Logovaz, "Fullerenes and atomic clusters", "Integration", "Russian Universities", etc.

Publications:

1. Reviews

1.3. Avramov P.V., Ovchinnikov S.G. Effects of strong electron correlations in X-ray and electron spectra of High-Tc superconductors, Physics of the Solid State. V. 42, pp.788-809 (2000);
1.2. Avramov P.V., Ovchinnikov S.G. Relationship between features of electronic structure and X-ray and electron spectra of HTSC // Zhurn. Struktur. Khimii. V. 40, pp. 131-183 (1999);
1.1. T.A. Romanova, Avramov P.V., Chemical bonding in nanoobjects. Proteins and elementary carbon, Bulletin of Krasnoyarsk State University, chem., #3, p. 32 (2003);

2. Books

2.4. A.S. Fedorov, P.B. Sorokin, P.V. Avramov, S.G. Ovchinnikov, Computer modeling of properties, electronic structure of some carbon and noncarbon nanoclusters and their interactions with light elements: ISBN 5-7692-0817-1, Publishing House of Siberian Division of Russian Academy of Sciences, Novosibirsk, 2006, in Russian (multimedia CD-book, the Internet version of the book can be found at http://www.kirensky.ru/master/articles/monogr/Book/index.htm);
2.3. Romanova T.A., Krasnov P.O., Kachin S.V., Avramov P.V., Theory and practice of computer modeling of nanoobjects: Publishing House of Krasnoyarsk State Politechnical University, 2001, in Russian (multimedia CD-book, the book can be found at http://www.kirensky.ru/books/book/ or http://physics-of-molecules.odessit.org/library/books/romanova/toc.htm);
2.2. Avramov P.V., Ovchinnikov S.G. Quantum-chemical and molecular-dynamics simulation of structure and properties of carbon nanostructures. Publishing House of Siberian Brunch of Russian Academy of Sciences, Novosibirsk, 2000, in Russian (multimedia CD-book);
2.1. Avramov Pavel V. Quantum-Chemical SCF-X_α -SW Study of Vacant Electronic States of nd-metal Oxides (Dissertation), 250 pp., 1992, AMSE PRESS, 16 Av. Grange Blanche, 69160, Tassin, France, ISBN: 2-909214-39-7;

3. Patents

3.6. Boris I. Yakobson, Pavel V. Avramov, John L. Margrave, Edward T. Mickelson, Robert H. Hauge, Peter J. Boul, Chad B. Huffman, Richard E. Smalley (Agent: Ross Spencer Garsson, 1201 Main Street - Dallas, TX, US), US patent #20040258603 (12/23/04), Class: 42344500B (USPTO), D01F009/12 (Intl Class), High-yield method of endohedrally encapsulating species inside fluorinated fullerene nanocages http://www.freshpatents.com/High-yield-method-of-endohedrally-encapsulating-species-inside-fluorinated-fullerene-nanocages-dt20041223ptan20040258603.php (US Patent provisional application No 11321-P057V1 (Nov 2002) Avramov P.V., Yakobson B.I., "High-yield method of endohedraly encapsulating species inside fluorinated fullerene carbon nanocages");
3.5. Fedorov A.S., Avramov P.V., Ovchinnikov S.G., Patent of Russian Federation RU 2264619 C1, G01 N 30/02, B01 D 59/10, "Method for separating substances with different physical-chemical properties". Effective date for property rights: 28.04.2004, Date of publication: 20.11.2005 Bull. 32, http://www.fips.ru/invb/32_05/DOC/RUNWC1/000/000/002/264/619/DOCUMENT.PDF
3.4. Avramov V.E., Khmel'kovskii I.E., Tsaregorodtsev M.E., Chikhachev O.M., Avramov P.V., Egorov N.V. Ore explosion technique. SU Patent No 1292406, Filed on October 22, 1986, Priority November 19, 1984, E21 C 37/00;
3.3. Khmel'kovskii I.E., Avramov V.E., Chikhachev O.M., Chernykh N.V., Avramov P.V., Urbaev A.O. Chikhachev M.M. Explosion of complex-structured ore blocks. SU Patent No 1292411, Filed October 22, 1986, Priority February 11, 1985, E21 C 41/06, 37/00;
3.2. Avramov V.E., Avramov P.V., Chikhachev O.M., Khmel'kovskii I.E., Tsaregorodtsev M.E. Ore dispersion technique. SU Patent No 1318289, Filed February 22, 1987, Priority December 24, 1985, B02 C19/00;
3.1. Avramov V.E., Kazmin M.I., Avramov P.V. Device for the combined bore holes drilling. SU Patent No 1546602, Filed on November 1, 1989, Priority December 8, 1987, E 21 B 7/14, E 21 c 37/16;

4. Selected papers (total number: more than 50)

4.15. Avramov P.V., Fedorov D.G., Sorokin P.B., Chernozatonskii L.A., Gordon M.S., New symmetric families of silicon quantum dots and their conglomerates as a tunable source of photoluminescence in nanodevices, Submitted for publication to Nature Materials (2007);
4.14. Avramov P.V., Chernozatonskii L.A., B. Sorokin P.B., Multiterminal Nanowire Junctions of Silicon: A Theoretical Prediction of Atomic Structure and Electronic Properties // Nano. Lett., V. 7, pp. 2063-2067 (2007) http://pubs3.acs.org/acs/journals/doilookup?in_doi=10.1021/nl070973y;
4.13. Avramov P.V., Kuzubov A.A., Fedorov A.S., Tomilin F.N., Sorokin P.B., The Theoretical DFT Study of Electronic Structure of Thin Si/SiO_2 Quantum Nanodots and Nanowires // Phys. Rev. B, V. 75, p. 205427 (2007);

4.12. Avramov P.V., Yakobson B.I., Interaction of Low-energy ions and atoms of light elements with Fluorinated Carbon Molecular Lattice // J. Phys. Chem. A 111 (Issue 009), pp. 1508-1514 (2007); http://pubs.acs.org/cgi-bin/download.pl?jp066236s/B7Kj, http://dx.doi.org/10.1021/jp066236s, http://pubs.acs.org/cgi-bin/abstract.cgi/jpcafh/2007/111/i08/abs/jp066236s.html

4.11. Avramov P.V., Naramoto H., Sakai S., Narumi K., Lavrentiev V., Maeda Y., Quantum Chemical Study of Atomic Structure Evolution of the Co_x/C_{60} ($x \leq 2.8$) Composites // J. Phys. Chem. A 111 (Issue 0012), pp 2299 - 2306 (2007); http://pubs3.acs.org/acs/journals/doilookup?in_doi=10.1021/jp0655874,

4.10. Avramov P.V., Sorokin P.B., Fedorov A.S., Fedorov D.G., Maeda Y., Band gap unification of partially Si-substituted single wall carbon nanotubes // Phys. Rev. B, V. 74, 245417 (2006);

4.9. Avramov P.V., Yakobson B.I., Scuseria G.E., Mechanisms of inelastic scattering of low energy protons on the molecules C_6H_6, C_{60}, C_6F_{12} and $C_{60}F_{48}$ // Physics of the Solid State. V. 48, Issue 1, pp. 177-184 (2006);

4.8. Avramov P.V., Adamovic I., Ho K.-M., Gordon M.S., Potential Energy Surfaces of Si_mO_n Cluster Formation and Isomerization // Journal of Physical Chemistry, V109, Issue 029, pp. 6294-6302 (2005)

4.7. Avramov P.V., Yakobson B.I., Scuseria G.E. The Influence of defects of carbon lattice on electronic structure of semiconducting single wall carbon nanotrubs // Physics of the Solid State. V. 46, 6, pp. 1132-1136 (2004);

4.6. Avramov Pavel V., Scuceria Gustavo, E., Kudin Konstantin Single Wall Carbon Nanotubes Density of States: Comparison of Experiment and Theory // Chemical Physics Letters. V. 370, Is.5-6, pp. 597 – 601 (2003);

4.5. Avramov P.V., Ovchinnikov S.G. The strong electron correlation effects in XAFS spectra of HTSC cuprates // Journal de Physique IV, pp. C2 183- C2 185 (1997);

4.4. Avramov P.V., Ovchinnikov S.G., Gavrichkov V.A., Ruzankin S.Ph. The Theory of X-ray Absorption Spectra of Strongly Correlated Copper Oxides // Physica C. V. 278, pp. 94-106 (1997);

4.3. Avramov P.B., Ovchinnikov S.G. Influence of strong electron correlations on the form of the X-ray CuK Absorption spectra of $La_{2-x}Sr_xCuO_4$. // JETP 81(4), pp.811-816 (1995);

4.2. Avramov P.V., Ruzankin S.Ph., Zhidomirov G.M. Adsorption dependence of vacant-electronic-state densities: As adatom on a lanthanum oxide surface // Phys.Rev. B46, #10, pp. 6553-6559 (1992);

4.1. Avramov P.V., Ruzankin S.Ph., Zhidomirov G.M. Quantum-chemical self-consistent-field X_α - scattered-wave investigation of La_2CuO_4 vacant surface electron states // Phys.Rev. B46, #10, pp. 6495-6500 (1992);