Curriculum vitae

Personal information

Oleg I. Il'in

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1. Education

- **Basic**

September 2005 – October 2014 | Southern Federal University, Russia http://sfedu.ru/international/ (formerly named Taganrog State University Of Radioengineering)

- Faculty of Electronics and Electronic Equipment Engineering
- Master speciality: «Nanotechnologies in electronics», 2011
- Master's degree of Nanotechnology. Topic: «Development and investigation methods of the formation technology of aligned arrays carbon nanostructures with the nanotechnological complex NANOFAB NTK-9»
- Degree with honour, 2011
- PhD Speciality: «Solid-state electronics, radio-electronic components, micro-and nanoelectronics, devices based on quantum effects», 2014
- PhD degree. Topic: «Development and research technological basics for creation an aligned arrays of carbon nanotubes for sensitive elements gas sensors»

September 2007 – October 2010 | Southern Federal University, Russia http://sfedu.ru/international/

- The Inter-branch Regional Center of Staff Retraining and Improvement of Professional Skills of the Southern Federal University
- Speciality: «Economics and administration of enterprise»
- Specialization: «Personnel management»
- State diploma of professional retraining. Topic:«Methods of personnel management»
- Degree with honour, 2010
- Practice Management: Selection and management personnel in the design-studio «cCube», www.ccube.ru

- **Additional**

September 2006 – October 2010 | Taganrog Interregional Chamber of Commerce and Industry, Russia www.ticci.ru/index.htm

- Programme: «Continuous search for perspective employees among university students»

6 October – 28 October 2007	Molecular Devices and Tools for Nano Technology (NT-MDT Co.), Russia www.ntmdt.com

- Advanced training
- Topic 1: «Work with the FIB module of multifunctional nanotechnological complex NANOFAB»
- Topic 2: «Work with the SPM module of multifunctional nanotechnological complex NANOFAB»
- Topic 3: «Trained operator-technologist scanning probe NanoLaboratory Ntegra Vita»
- Certificates is attached

2 September – 10 September 2008	Southern Federal University, Russia http://sfedu.ru/international/

- Advanced training
- Training course on plasma enhance carbon nanotubes chemical vapor deposition system
- Certificate is attached

16 November – 27 November 2009	Semiconductor Technologies and Equipment (SemiTEq JSC), Russia www.semiteq.org

- Advanced training
- Topic: «Plasma processing equipment for planar technology»
- Certificate is attached

14 March – 30 March 2011	Southern Federal University, Russia http://sfedu.ru/international/

- Staff training
- Topic: «Improving foreign language communicative competence of management and administrative, research and teaching staff of SFU»
- Certificate is attached

1 October – 30 November 2012	Southern Federal University, Russia http://sfedu.ru/international/

- Staff training
- Topic: «New information technologies in educational activities»
- Certificate is attached

2. Work experience

September 2007 – now	Research and educational centre «Nanotechnologies» of Southern Federal University, Russia http://sfedu.ru/00_eng/main_context.shtml?res/r2

- Teaching Assistant of laboratory training courses «Methods of diagnosis and analysis of micro-and nanosystems», «Processes of micro-and nanotechnology», «Methods of mathematical modeling», «Actual problems of micro- and nanotechnology», «Application packages for engineering calculations»
- Research work:
  - Profiling of solid surfaces using focused ion beam
  - Formation of nanoscale objects by electron beam lithography
  - Study the formation processes of aligned carbon nanotubes
  - Study modification processes of carbon nanotubes for creation a hybrid carbon nanostructures
  - Scientific supervisor of 6 students of The Department of Micro

and Nanoelectronics
    - Supervisor of extracurricular activities for school groups towards "Carbon Nanostructures"
    - Take part in equipment installation
- Was taught of equipment operation by scientists the following equipment:
    - Cluster multifunctional nanotechnological complex NANOFAB 100, NT-MDT Co. www.ntmdt.com
        - Focused Ion Beam module, Orsay Physics, France (FIB GIS, FIB Implant, FIB UHV)
        - UHV radial distribution module, Ireland
    - Scanning probe NanoLaboratory Ntegra, NT-MDT Co. www.ntmdt.com
    - Nova NanoLab 600 DualBeam-SEM/FIB, FEI Company, Netherlands, www.fei.com
    - Elphy Plus lithography system for field-emission SEM or FIB, Raith, Germany, www.raith.com

3. Scientific interests

- nanotechnology
- carbon nanotubes
- chemical vapor deposition
- semiconductor electronics
- material science
- scanning electron microscopy
- electron beam lithography
- atomic-force microscopy
- CNT-based devices
- MEMS

4. Progress

- Scholar of the Russian President for young scientists and PhD students engaged in advanced research and development in priority modernization areas of the Russian economy in 2013-2015 year;
- Diploma of the winner of the contest "The best scientific supervisor school projects" within the VI All-Russian intellectual forum - Nanotechnology Olympiad (Moscow State University), 2012;
- Diploma of the winner of the contest phase I of tutors for the best idea a school project in the VI All-Russian intellectual forum - Nanotechnology Olympiad (Moscow State University), 2012;
- Patent on invention of Russia Federation, №2431597 «Process of creating nanostructures based on nanotubes», 2011
- Diploma of International Youth Competition research towards Nanosystems, 2012
- Diploma of the winner of All-Russian competition of research students, graduate students and young scientists in several interdisciplinary areas of "Eureka 2011", 2011;
- Winner Youth Science and Innovation Competition "U.M.N.I.K", 2010;
- Diploma for the report at the Scientific Conference of Students and

5. Main publications

- O.A. Ageev, S.V. Balakirev, Al.V. Bykov, E.Yu. Gusev, A.A. Fedotov, J.Y. Jityaeva, O.I. Il'in, M.V. Il'ina, A.S. Kolomiytsev, B.G. Konoplev, S.U. Krasnoborodko, V.V. Polyakov, V.A. Smirnov, M.S.

Solodovnik, E.G. Zamburg. **DEVELOPMENT OF NEW METAMATERIALS FOR ADVANCED ELEMENT BASE OF MICRO- AND NANOELECTRONICS, AND MICROSYSTEM DEVICES** // Chapter In: Advanced Materials – Manufacturing, Physics, Mechanics and Applications. Springer International Publishing Switzerland. 2016, 702 p., pp. 563-580, ISBN: 978-3-319-26324-3, doi:10.1007/978-3-319-26324-3, http://www.springer.com/gp/book/9783319263229

- O.A. Ageev, O.I. Il'in, Yu.F. Blinov, B.G. Konoplev, M.V. Rubashkina, V.A. Smirnov, A.A. Fedotov. **STUDY OF THE RESISTIVE SWITCHING OF VERTICALLY ALIGNED CARBON NANOTUBES BY SCANNING TUNNELING MICROSCOPY** // ISSN 1063-7834, Physics of the Solid State, 2015, Vol. 57, No. 4, pp. 825–831, doi:10.1134/S1063783415040034, http://link.springer.com/article/10.1134%2FS1063783415040034, IF=0.821
- O.A. Ageev, O.I. Il'in, M.V. Rubashkina, V.A. Smirnov, A.A. Fedotov, O. G. Tsukanova. **DETERMINATION OF THE ELECTRICAL RESISTIVITY OF VERTICALLY ALIGNED CARBON NANOTUBES BY SCANNING PROBE MICROSCOPY** // Technical Physics, July 2015, Volume 60, Issue 7, pp. 1044-1050, doi:10.1134/S1063784215070026, http://link.springer.com/article/10.1134%2FS1063784215070026,IF=0.539
- O.A. Ageev, O.I. Ilin, Yu. F. Blinov, A. S. Kolomiitsev, B. G. Konoplev, M. V. Rubashkina, V. A. Smirnov, A. A. Fedotov. **MEMRISTOR EFFECT ON BUNDLES OF VERTICALLY ALIGNED CARBON NANOTUBES TESTED BY SCANNING TUNNEL MICROSCOPY** // Technical Physics, ISSN 1063-7842, 2013, Vol. 58, No. 12, pp. 1831–1836, doi:10.1134/S1063784213120025, http://link.springer.com/article/10.1134%2FS1063784213120025, IF=0.539
- O.A. Ageev, O.I. Il'in, A.S. Kolomiytsev, S.A. Lisitsyn, V.A. Smirnov, E.G. Zamburg. **FORMATION OF HIGH ASPECT RATIO NANOSTRUCTURES USING FOCUSED ION BEAM INDUCED DEPOSITION OF CARBON** // Applied Mechanics and Materials, Vols.752-753, 2015, pp. 154-158, doi:10.4028/www.scientific.net/AMM.752-753.154, http://www.scientific.net/AMM.752-753.154, IF=0.15
- O.A. Ageev, O.I. Ilin, A.S. Kolomiytsev, M.V. Rubashkina, V.A. Smirnov, A.A. Fedotov. **INVESTIGATION OF EFFECT OF GEOMETRICAL PARAMETERS OF VERTICALLY ALIGNED CARBON NANOTUBES ON THEIR MECHANICAL PROPERTIES** // Advanced Materials Research, 2014, Vol. 894, pp. 355-359, ISSN: 1662-8985, doi:10.4028/www.scientific.net/AMR.894.355, http://www.scientific.net/AMR.894.355
- O.A. Ageev, O.I. Ilin, A.V. Vnukova, A.L. Gromov, A.S. Kolomijtsev, B.G. Konoplev, S.A. Lisitsin. **ANALYSIS OF MODES OF NANOSCALE PROFILING DURING ION STIMULATED DEPOSITION OF W AND PT USING THE METHOD OF FOCUSED ION BEAMS** // Nanotechnologies in Russia, ISSN 1995-

0780, 2014, Vol. 9, №3–4, 2014, pp. 145–150, doi:10.1134/S1995078014020025, http://link.springer.com/article/10.1134%2FS1995078014020025

- O.A. Ageev, O.I. Ilin, A.S. Kolomiitsev, B.G. Konoplev, M.V. Rubashkina, V.A. Smirnov, A.A. Fedotov. **DEVELOPMENT OF A TECHNIQUE FOR DETERMINING YOUNG'S MODULUS OF VERTICALLY ALIGNED CARBON NANOTUBES USING THE NANOINDENTATION METHOD** // Nanotechnologies In Russia, 2012, Volume 7, Numbers 1-2, p. 47-53, doi:10.1134/S1995078012010028, http://link.springer.com/article/10.1134%2FS1995078012010028
- Ageev O.A., Il'in O.I., Klimin V.S., Konoplev B.G., Fedotov A.A. **ISSLEDOVANIE REZhIMOV FORMIROVANIYa KATALITIChESKIX CENTROV DLYa VY'RAShhIVANIYa ORIENTIROVANNY'X MASSIVOV UGLERODNY'X NANOTRUBOK METODOM PECVD** // Ximicheskaya fizika i mezoskopiya, 2011, Tom 13, №2, s.226-231, http://www.udman.ru/ojs/index.php/cpm/issue/view/24
- Ageev O.A., Il'in O.I., Kolomijcev A.S., i dr. **POLUChENIE NANORAZMERNY'X STRUKTUR NA OSNOVE NANOTEXNOLOGIChESKOGO KOMPLEKSA NANOFAB NTK-9** // Izvestiya Yuzhnogo federal'nogo universiteta. Texnicheskie nauki. Tom 114, №1., 2011 g. s. 109-116, http://elibrary.ru/item.asp?id=15604225

6. Russian and international grants

- "Development of methods for the design and development of advanced multi-axis integrated micro- and nanomechanical gyroscopes and accelerometers using plasma and laser technologies for surface micromachining mikrooptoelektromehanicheskih systems», CITIS №: 114091540039, 2014 - 2016
- "Development of construction principles and foundations of the theory of technological processes of creating ordered arrays of quantum nanostructures and molecular nanoelectronic and nanomechanical systems», CITIS №: 1201257796, 2012 - 2014
- "Development and research of the processes of formation and methods nanodiagnostics memristor structures based on nanocrystalline films of ZnO, vertically aligned carbon nanotubes and titanium oxide nanostructures promising elements for making RRAM», CITIS №: 1201366566, 2013
- "Investigation of nano-sized surface profiling solids focused ion beam to create nanostructures, nanoelectronics components, micro and nanosistemnoy technology», CITIS №: 1201366567, 2013
- "Study of electrical properties of nanostructured materials and composites based on them for use in gas sensors sensitive elements», CITIS №: 1201366570, 2013
- "Research of modes of formation of elements for microfluidics lab-on-chip method of focused ion beams», CITIS №: 1201279518, 2012 - 2013
- "Development and research of methods of formation of probe sensors for specialized tasks nanodiagnostics probe by focused ion beams», CITIS №: 1201280481, 2012 - 2013
- "The development of laser technology and the implementation of

nanomechanical systems, acousto-optical recording and analysis of motion parameters on the basis of integrated semiconductor structures», CITIS №: 1201179510, 2011 - 2012

- "Development of the pilot project and technical complex of early detection, fire alarm, and the concentration of hazardous, toxic and harmful substances with automatic air purification in the protected area of education (academic) institutions», CITIS №: 1201160568, 2011
- "Research and development technology of sensor elements for environmental monitoring systems based on the films of nanocomposite polymer materials with carbon nanostructures», CITIS №: 1201058070, 2011
- "Creation of interactive complex remote access for students and post-graduates to study nanomaterials on the basis of multi-equipment», CITIS №: 1201171604, 2011 - 2011

7. Language skills

- Russian
- English
  - good level of spoken English (Upper-Intermediate)
  - A level of technical language

8. Computer skills

- Origin
- MatLab
- MathCad, etc…

9. Personal qualities

- purposeful
- communicative
- stress-resistant
- responsible
- fast-learning
- energetic
- with high-level of motivation
- with great thirst for achievements
- ability to work in a team