CURRICULUM VITAE

SERGEY BALAKHONOV

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Department of Materials Science, Inorganic Chemistry Division Laboratory

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Name	Sergey Balakhonov
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Education Background:

2001 – 2004	Special Secondary School with extended chemistry, and mathematics lessons.
2004 – 2008	Bachelor student, Department of Materials Science, Lomonosov Moscow State University.
2008 – 2010	Student of magistracy, Department of Materials Science, Lomonosov Moscow State University.
2010 – present	PhD student, Department of Materials Science, Lomonosov Moscow State University.

Scientific Interests:

1. Materials science, nanoscience and nanotechnology, solid state chemistry.
2. Hydrothermal / solvothermal and hydrothermal-microwave synthesis.
3. Ion / molecular sieves based on magnesium oxide (IV) – todorokite, buserite, birnessite.
4. 1D nanomaterials (nanowires, whiskers) and 3D materials (aerogels) based on vanadium oxides.
5. Electronic materials, cathode materials for Li-ion batteries.

Skills:

Hydrothermal and hydrothermal-microwave technique, CVD / MOCVD technique, thermal analysis, FTIR spectroscopy, transmission electron microscopy, scanning electron microscopy, electron diffraction analysis, powder X-ray diffraction analysis.

Computer knowledge:

- *Programming languages:* C / C++, HTML.
- *Operating system:* Windows, Linux.
- *Programs for XRD handling, indexing and structure refinement:* GSAS+EXPGUI, Jana 2000 / 2006, F.O.X. ("Free Objects for Xtallography"), Superflip (Charge Flipping algorithm), TREOR 90, DICVOL.

Speaking Language:

- Russian (native language),
- English (fluent),
- German (basic).

Awards:

1. The first award on the International Student Conference “Lomonosov 2005” (Moscow, Russia, 2005, April).
2. The third award on the International Student Conference “Lomonosov 2007” (Moscow, Russia, 2007, April).
3. The first award on the 17-th Mendeleev Conference of young chemists (Samara, Russia, 2007, April).
4. Poster award on the 6-th conference “Nonlinear processes and problems of self-organization in modern materials science” (Voronezh, Russia, 2007, October).
5. Poster award on the 7-th conference “Actual problems of modern inorganic chemistry and materials science” (Zvenigorod, Russia, 2007, November).
6. The third award on the 18-th Mendeleev Conference of young chemists (Belgorod, Russia, 2008, April).
7. Best poster award (symposium B) on E-MRS 2008 Fall Meeting conference (Warsaw, Poland, 2008, September).
8. The second award on the conference of young researchers in IGIC RAS (Moscow, Russia, 2009, April).
9. The second award on the 19-th Mendeleev Conference of young chemists (St.-Petersburg, Russia, 2009, June).
10. A participant diploma of the Second International Conference of young researches in the field of nanotechnology “Rusnanotech 09” (Moscow, Russia, 2009, October).
11. A participant diploma of the Third International Conference of young researches in the field of nanotechnology “Rusnanotech 10” (Moscow, Russia, 2010, October).

List of publications:

Total number of publications: 8 papers, 40 conference presentations.

List of articles:

1) Kolen'ko Yu.V., Meskin P.E., Mukhanov V.A., Churagulov B.R., Balakhonov S.V., "Effect of the cation on the phase composition of nanocrystalline dioxides of the titanium family synthesized by hydrothermal treatment of amorphous hydroxide gels", *Russian Journal of Inorganic Chemistry*, 2005, **50 (12)**, 1817-1821.
2) S.V. Balakhonov, Yu.V. Kolen'ko, B.R. Churagulov, E.A. Goodilin, A.G. Veresov and Yu.D. Tret'yakov, "Morphological features and ion-exchange properties of the H-form of todorokite", *Doklady Chemistry*, 2006, **409 (1)**, 101-105.
3) S.V. Balakhonov, B.R. Churagulov, and E.A. Goodilin, "Selective cleaning of ions of heavy metals from water solutions using the H-form of todorokite synthesized by the hydrothermal method", *Journal of Surface Investigations. X-ray, Synchrotron and Neutron Techniques*, 2008, **2 (1)**, 152-155.
4) S.V. Balakhonov, B.R. Churagulov, "Hydrothermal synthesis and investigation of physical-chemical properties of ion sieves based on MnO_2 with todorokite structure and V_2O_5 whiskers", *ISJAEE*, 2008, **57 (1)**, 65-71.
5) T.L. Kulova, A.M. Skundin, S.V. Balakhonov, D.A. Semenenko, E.A. Pomerantseva, A.G. Veresov, E.A. Goodilin, B.R. Churagulov, Yu.D. Tret'yakov, "Investigation of lithium electrochemical intercalation in structure of whiskers based on barium-vanadium bronze BaV_8O_{21-x}", *Metal protection*, 2008, **44 (1)**, 1-4.
6) E.A. Goodilin, E.A. Pomerantseva, D.A. Semenenko, P.B. Kocherginskaya, D.M. Itkis, T.L. Kulova, A.M. Skundin, L.S. Leonova, Yu.A. Dobrovol'skiy, M.N. Rumyantseva, A.M. Gas'kov, S.V. Balakhonov, B.R. Churagulov, Yu.D. Tret'yakov, "Physical-chemical and functional factors of metal oxide wire-like crystals", *Intelligence of science academy. Chemical series*, 2008, **5**, 1023-1034.
7) M.G. Kozlova, S.V. Balakhonov, E.A. Goodilin, B.R. Churagulov, A.G. Veresov, Yu.D. Tret'yakov, "Chemical and morphological modification of complex manganese oxides with different size of structure tunnels", *Intelligence of science academy. Chemical series*, 2008, **6**, 1-6.
8) Sergey V. Balakhonov, Dmitry M. Tsymbarenko, Pavel E. Meskin, Bulat R. Churagulov, Eugene A. Goodilin, Yuri D. Tretyakov, "Hydrothermal synthesis of a novel phase of vanadia-based nanowhiskers", *Mendeleev Communications*, 2010, **20**, 153-155.

List of conference presentations:

(Total number 40, only the most important conferences are listed)

1) Balakhonov S. V., Churagulov B. R., "Hydrothermal synthesis and investigations of physical-chemical properties of ion sieves of MnO_2 with todorokite structure and whiskers based on V_2O_5", *17-th Russian Mendeleev Conference of young chemists*, Samara, Russia, 2007, April 23-27, p. 24.
2) Balakhonov S. V., "Hydrothermal synthesis of porous manganese oxides with birnessite and todorokite structures", *The International Student Conference "Lomonosov 2005", section "Fundamental Material Science"*, Moscow, Russia, 2005, April, p. 401-402.
3) Balakhonov Sergey Vasil'evich, "Hydrothermal synthesis of whiskers based on V_2O_5 for creation of a new type cathode material", *XIV International conference for undergraduate and graduate students and young scientists "Lomonosov-2007", section "Material studies"*, Moscow, Russia, 2007, V. II, p.214-215.
4) Sergey V. Balakhonov, Yury V. Kolen'ko, Evgeny A. Goodilin, Bulat R. Churagulov, "Physical-chemical properties of hydrothermally prepared todorokite-type manganese oxides", *Joint meeting of Eighth International Symposium on hydrothermal reactions & Seventh international conference on solvothermal reactions "ISHR & ICSTR 2006"*, Sendai, Japan, 2006, August 5-9, p. 111.
5) S. V. Balakhonov, B. R. Churagulov, E. A. Goodilin, "Selective cleaning of water solutions from heavy metal ions via using of H-form todorokite, synthesized by hydrothermal method", *Nonlinear processes and problems of self-organization in modern materials science*, Astrakhan', Russia, 2006, November 22-25, p. 83-84.
6) D. A. Semenenko, S. V. Balakhonov, "Synthesis and properties investigations of composite materials based on $V_2O_5 \cdot nH_2O$", *Russian conference of innovation projects "Industry of nanosystems and materials"*, Zelenograd, Russia, 2006, September 26-29, p.193-194.
7) Balakhonov S. V., Pomerantseva E. A., Goodilin E. A., Churagulov B. R. "Hydrothermal synthesis of novel phase of whisker based on V_2O_5", *"Actual problems of modern inorganic chemistry and material science"*, Moscow, Russia, 2006, November 24-26, p. 1.
8) Balakhonov S.V., Goodilin E.A., Churagulov B.R., Tret'yakov Yu.D, "Hydrothermal synthesis of whiskers based on vanadium oxide for creation of a new type cathode materials", *XVIII Mendeleev congress for general and applied chemistry*, Moscow, Russia, 2007, p. 626.
9) Balakhonov S.V., Churagulov B.R, "Hydrothermal synthesis of $BaV_{8.5}O_{22.25}$ whiskers for creation of a new type cathode material", *VII conference of young scientists "Actual problems of modern inorganic chemistry and materials science"*, Zvenigorod, Russia, 2007, November 23-25, p. 2.
10) Sergey V. Balakhonov, "Hydrothermal synthesis of vanadia-based whiskers for application as flexible cathode material", *"2008 E-MRS Fall Meeting"*, Warsaw, Poland, 2008, September 14-19, p. 59.
11) S.V. Balakhonov, B.R. Churagulov, "Hydrothermal and microwave-hydrothermal synthesis of vanadia-based whiskers", *Second International Conference of young researches in the field of nanotechnology "Rusnanotech 09"*, Moscow, Russia, 2009, October 6-8, p. 712.