

Taisiya Skorina

E-mail: tskorina@mit.asu

takerama.box@gmail.com

tel: +1(480) 295 5791

KEY QUALIFICATIONS

- General knowledge:** Physical chemistry of silicates. Chemistry and technology of cement, ceramics, and alkali-activated aluminosilicate binders (geopolymers). Chemistry and technology of acid- and fire-resistant concretes and protective coatings. Ion-exchange in clay and clay derivatives. Heat processing in cement and ceramics manufacture (modeling).
- Analytic experience** X-Ray spectroscopy, Raman spectroscopy, surface specific area and pore size distribution analysis (BET), thermogravimetric analysis TGA/DSC (DTA); Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM), Confocal Laser Scanning Microscopy (CLSM), quality testing of construction materials (DT and NDT testing)
- Teaching experience** Four years of teaching experience as a lecturer at the department of general technology of silicate materials at D. Mendeleev University of Chemical Technology of Russia:
- The following courses taught: «Heating processes and apparatus of ceramic and cement technology», «Physical chemistry of silicates», «Chemistry and technology of inorganic binders»
- Internet published tutorials:**
<http://www.asdn.net/asdn/chemistry/silicates.shtml>
- Industry experience** R&D in materials for construction, engineering of cement based materials for general use and special applications. Waste management, development of technical documentation, quality control of raw materials and final products.
- Languages:** Russian (mother language), English-fluent.
- Communication skills** Member of organizing committee the first RUSTEC workshop, Arizona State University, 2010: <http://rustec.asu.edu/workshop.shtml>
- Member of Organizing committee of NGC2011 conference Nano and Giga Challenges in Electronics, Photonics and Renewable Energy:
<http://www.asdn.net/ngc2011/>
- Computers:** Advanced knowledge of MS Office, Visio, Photoshop and special data analysis software such as ASAP 2020, Mettler.

HIGHER EDUCATION

Ph.D. in Material Science: Graduate studies at D. Mendeleev University of Chemical Technology of Russia; *Thesis topic:* Alkali silicate binders: Effect of SiO₂/ Na₂O ratio and alkali metal ion type on the structure and mechanical properties

M.S. in Chemistry: Undergraduate studies in Mendeleev University of Chemical Technology of Russia; *Thesis topic:* Polymer-silicate composite materials based on alkali-silicate solutions, 2006

PROFESSIONAL APPOINTMENTS

2012-Present: Postdoctoral Associate: Massachusetts Institute of Technology, Materials Processing Center

2011-2011: Visiting Scientist: Arizona State University, Department of Chemistry & Biochemistry, research area: alkaline-activated aluminosilicate based nanoporous materials (geopolymers). Ion-exchange in geopolymers.

2010 - 2011: Research Engineer: advanced composite materials, NT&I, Zelenograd. Russia (NT-MDT GROUP)

2007- 2011: Assistant Lecturer at .D. Mendeleev University of Chemical Technology of Russia, the department of general technology of refractory non-metallic and silicate materials;

LIST OF PUBLICATIONS

1. Taisiya Skorina and Irina Tikhomirova. **Alkali silicate binders: Effect of SiO₂/ Na₂O ratio and alkali metal ion type on the structure and mechanical properties**, J. Mater Sci. **2012**
<http://www.springerlink.com/content/x7521p450873731/>
2. Tikhomirova Irina, Skorina Taisiya, **RU 2386600** patent RF Polymer-concrete composite materials for decoration and construction, **2010 [in Russian]**
3. Tikhomirova I. N, Skorina T. V. **Effect of curing temperature on properties of liquid glass composition** Construction materials, the equipment, technologies of XXI century. **2010**. № 6 (137) p. 46 [**in Russian**]
4. I.N. Tikhomirova, T.V. Skorina, **Influence of Silicate Module of Liquid Glass on Properties of Binders / Construction materials / 2009 / №12 [in Russian]**
5. I. N. Tikhomirova and T. V. Skorina, **Modification of quartz-liquid glass composites with organic resins, Glass and ceramics**, Volume 65, Numbers 9-10,-**2008**, Springer
6. Tikhomirova I, Skorina T, **Synthesis of a new type of Diatomit based Refractories / Construction materials / 2008. / № 10 / P. 58 -60 [In Russian]**
7. Tikhomirova I, Skorina T, Volkov A., **Construction materials based on liquid glass**, Thesis of XVIII Mendeleev Congress on General and Applied Chemistry, Granitca, **2007**. / V. 2 / P. 550.
8. Tikhomirova I, Skorina T, **Quartz – silicate liquid glass compositions**, Thesis of XX National meeting on refractory functional coatings St. Petersburg, **2007 [in Russian]**

Presentations

1. **Invited Presentation** at the Department of Chemistry & Environmental Engineering, University of Arizona **Synthesis of Alumina and Silica Composites and Applications for Sustainable Engineering /March, 2012**
<http://www.che.arizona.edu/Seminars%20&%20Events/index.php?ID=235>
2. Sergey Fastov, Ilya Fastov, Taya Skorina, Anatoli Tichonov. / **Clay Nanotubes as Polyfunctional Modifiers of Polymer Composites / 241st ACS National Meeting / 2011.**
3. I Fastov, Sergey A. Fastov, Taisiya V. Skorina, **Alumosilicate nanotubes for modifying of composite materials / RUSNANOTECH forum / 2010**