

YULIA M. TRUSHKINA

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[my profile at MMK website](#)



Education

PhD in Materials Chemistry, Department of Materials and Environmental Chemistry, *Stockholm University*, Sweden. 2014 – Present.

“Studies and structural characterization of defects in iron oxyhydroxide nanoparticles using novel 3DEM techniques”.

Supervisor: Associate Professor German Salazar-Alvarez (german.salazar.alvarez@mmk.su.se)

Co-supervisor: researcher Cheuk-Wai Tai (cheuk-wai.tai@mmk.su.se)

Master's in Molecular Geochemistry and Biogeochemistry, Department of Crystallography, Geology Faculty, *Saint Petersburg State University*, Russian Federation. 2011-2013.

“Crystallochemical features of fatty acids in homologous series $C_nH_{2n}O_2$ ($n = 11-24$)”.

Supervisor: Professor Elena N. Kotelnikova (e.kotelnikova@spbu.ru)

Bachelor's in Geology, Department of Crystallography, Geology Faculty, *Saint Petersburg State University*, Russian Federation. 2007-2011.

“Crystallochemical studies of odd-numbered carbon (fatty) acids and of their binary compositions”.

Supervisor: Professor Elena N. Kotelnikova (e.kotelnikova@spbu.ru)

Employment history

Laboratory Assistant, Institute of Silicate Chemistry of Russian Academy of Science, Saint Petersburg, Russia. November 2012 – November 2013.

Samples of marine antifouling covering were studied by X-Ray diffraction and AFM methods. Samples were prepared by sol-gel method. Also I am involved in researches of electrical insulation and in researches of problems and ways to eliminate the self-discharge pseudocapacitor with nanooxide layer on the electrode surface.

Laboratory Assistant, Biology and Soil Faculty, Saint Petersburg State University. November 2011 – November 2012.

Preparation of chemical solutions and supervising student research experiments.

Laboratory Assistant, Center of Isotopic Research, A.P. Karpinsky Russian Geological Research Institute, Saint Petersburg, Russia. August 2010 – October 2010.

Preparation of samples for isotopic research and analysis and processing of information obtained from research.

Personal Skills

- Transmission and scanning electron microscopy, EDX, electron tomography
- X-Ray and in-situ X-Ray Powder Diffraction
- Thermal gravimetric analysis, surface adsorption, experience of small angle X-Ray scattering measurements at synchrotron facilities
- Synthesis of inorganic materials, experience of working in glovebox
- Languages: English (fluent), Swedish (intermediate), Russian (native)
- Computer Skills: Digital Micrograph, ImageJ, PDXL, PdWin, Index, Unit Cell, WinGX, FulProf, Atoms, Mercury, MS Office

Conferences, Workshops and Schools

- MRS fall meeting, Boston, USA, November 2018.
- 30th Max IV user meeting, Lund, Sweden, September 2018.
- 19th International Microscopy Congress, Sydney, Australia, September 2018.
- ASMCS17 – A symposium on surface chemistry and materials science conference, Stockholm, Sweden, October 2017.
- SCANDEM17 The 68th Annual Conference Of The Nordic Microscopy Society, Reykjavik, Iceland, June 2017.
- HYMA 5th International Conference on Multifunctional, Hybrid and Nanomaterials, Lisbon, Portugal, March 2017.
- EMAT Workshop on Transmission Electron Microscopy, Antwerp, Belgium, June 2015.
- 2d TEM Spectroscopy Workshop in Materials Science, Uppsala, Sweden, May 2015.
- 3d European crystallography school, Bol, Croatia, September 2016.
- Materials research society (MRS) spring meeting, Phoenix, USA, March 2016.
- EMAT Workshop on Transmission Electron Microscopy, Antwerp, Belgium, June 2015.
- 2d TEM Spectroscopy Workshop in Materials Science, Uppsala, Sweden, May 2015.
- “EXAFS for beginners” course, Lund, Sweden, April 2015.
- Electron Crystallography School, Darmstadt, Germany, April 2014.
- VI All-Russian Conference by Organic Mineralogy, Chernogolovka, Russia, October 2013.
- Analysis of Diffraction Data in Real Space, Grenoble, France, March 2013.
- Fourth European Conference on Crystal Growth, Glasgow, UK, June 2012.
- IV International Symposium «Interactions between biogenic and abiogenic components in natural and anthropogenic systems», Saint-Petersburg, Russia, September 2011.
- BIWIC-18 - Proceedings of 18th International Workshop on Industrial Crystallization, Delft, The Netherlands, September 2011.

Awards and Scholarships

C.F. Liljevalch J:ors travel grant, 2018.

K & A Wallenbergs Stiftelse, travel grant, 2017.

4th European Conference on Crystal Growth (ECCG4), student bursary, June 2012.

Scholarship of St. Petersburg State University, 2012 - 2014.

1st prize among student research works (twice: 2008 and 2009).

The winner of the Russian Geological Olympiad for pupils (2007).

Publications

1. V. Guccini, S. Yu, M. Agthe, K. Gordeyeva, **Y. Trushkina**, A. Fall, C. Schütz, G. Salazar-Alvarez. Inducing nematic ordering of cellulose nanofibers using osmotic dehydration // *Nanoscale* 10. 2018. P. 23157-23163.
2. S. Zonouzi, R. Khodabandeh, H. Safarzadeh, H. Aminfar, **Y. Trushkina**, M. Mohammadpoufard, M. Ghanbarpour, G. Salzar-Alvarez. Experimental investigation of the flow and heat transfer of magnetic nanofluid in a vertical tube in the presence of magnetic quadrupole field // *Experimental thermal and fluid science* 91. 2018. P. 155-165.
3. W. Hao, F. Björnerbäck, **Y. Trushkina**, M. Oregui-Bengoechea, G. Salazar-Alvarez, T. Barth, N. Hedin. High-performance magnetic activated carbon from solid waste from lignin conversion processes. Part I: Their use as adsorbents for CO₂ // *ACS Sustainable Chem. Eng.* 2017, 5 (4), P. 3087–3095.
4. J.-F. Boily, M. Yesilbas, Md. M. U. Munshi, L. Baiqing, **Y. Trushkina**, G. Salazar-Alvarez. Thin Water Films at Multifaceted Hematite Particle Surfaces // *Langmuir* 31 (48). 2015. P. 13127– 13137.
5. **Y.M. Trushkina**, E.N. Kotelnikova. Morphotropism, polymorphism and behavior on heating of odd monocarboxylic acids C_nH_{2n}O₂ in the homologous series $n = 11-21$ // *Journal of Structural Chemistry*. V. 55. I. 7. 2014. P. 1260-1267.
6. **J.M. Trushkina**, E.N. Kotelnikova. Polymorphism and morphotropy in homologues series of monobasic carboxylic acids C_nH_{2n}O₂ ($n = 11-21$) // *BIWIC 20th – Proceedings of International Workshop on Industrial Crystallization*. Odense, Denmark. 2013. P. 297-303.
7. **J.M. Trushkina**, E.N. Kotelnikova. Morphotropy, polymorphism and isomorphism of monobasic carboxylic acids // *Materials of VI All-Russian Conference by Organic Mineralogy*. Chernogolovka. Russia. 2013. P. 156-159.
8. **J.M. Trushkina**, E.N. Kotelnikova. Polymorphic modifications and thermo solid-phase transformations of stearic acid by the data of X-Ray and thermo X-Ray powder diffraction // *Proceedings of “Add 2013” conference – Analysis of diffraction data in real space*. Grenoble. France. 2013. P. 58.
9. **J.M. Trushkina**, E.N. Kotelnikova. Polymorphic variety of stearic acid by the data of X-ray and thermo-X-ray powder diffractometry // *ECCG4 – 4th European Conference on Crystal Growth*. Glasgow. UK. 2012.
10. E.N. Kotelnikova, **J.M. Trushkina**. Polymorphism of Normal Fatty Acids C_nH_{2n}O₂ ($n = 12-24$) and Their Double Compounds in Binary Even and Odd Systems // *BIWIC 18th – Proceedings of 18th International Workshop on Industrial Crystallization* — Delft. The Netherlands. 2011. P. 254-259.

11. Elena Kotelnikova, **Julia Trushkina**. Odd n-fatty acids $C_nH_{2n}O_2$ and their alloys on the X-ray powder diffraction data // Acta Crystallographica Section A: Foundations of Crystallography. 2011. P. 269-270.
12. **J.M. Trushkina**, E.N. Kotelnikova. X-ray study of the odd-numbered carbon acids and their binary compositions // Materials of XI conf. of stud. scientific society of Geological faculty. SPbU. St. Petersburg. 2011. P. 48-50.
13. **J.M. Trushkina**, E.N. Kotelnikova. Polymorphic variety of odd carbon acids by the data of X-ray diffractometry // Materials of IV International Symposium «Interactions between biogenic and abiogenic components in natural and anthropogenic systems». SPb. 2011. P. 429-432.
14. V.D. Franke, S.N. Bocharov, **J.M. Trushkina**. Influence of gelatin and aspartic acid on the morphology of calcium carbonate crystals // Materials of Int. Mineralogical Seminar "Mineralogical intervention in micro-and nano-world." Syktyvkar. 2009. P. 504-505.
15. **J.M. Trushkina**. The crystal growth from solution in the presence of gelatin // Materials of student conference of SPbU. St. Petersburg. 2009. P. 16-19.
16. V.D. Franke, A.E. Glikin, A.I. Shugaev. **J.M. Trushkina**. Dynamics of crystallization in natural bile and model solutions // Materials of VI Int. Symposium "Mineralogical museums". SPb. 2008. P. 261-262.