

Alexander S. Shaplov, Assoc. Prof., Doctor of Sci., PhD

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<http://www.researcherid.com/rid/D-9317-2014>

SUMMARY

Team oriented, highly accomplished polymer chemist with an expertise in the state of the art of monomer and polymer synthesis, polymeric advanced materials, fabrication of ultrathin films and layered assemblies as well as in "classic" electrochemistry techniques. Exceptional record of success performing and leading complex, high-level Academic research and industrial research for Merck KGaA, Samsung Group, LG Electronics in Ionic Liquids and Polymer Engineering, PhD in Polymer Chemistry, and 14 years of professional experience. Key accomplishments:

- Development of new trend in polymer chemistry associated with the use of ionic liquids (ILs) in synthesis and modification of polymers.
- Synthesis of more than 30 novel functional ionic monomers, preparation of polymers on their basis and subsequent construction of first all-polymer-based organic electrochromic devices (ECD) with fast switching time and high coloration efficiency.
- Design and creation of new highly conductive ionic liquids and their successful application as electrolytes in batteries and supercapacitors fabrication.
- Development of patented innovative networked polymer films with high conductivity and stretchability for solid-state Li batteries.
- Elaboration of patented polymer gel materials for solar cells (photovoltaic cells for renewable energy).
- Trained students, colleagues, PhD students and investigators in polymer synthesis and characterization techniques, presentation of the lab on project teams and internationally.

Co-inventor on 5 published patents, author of 3 book chapters and 53 papers in leading refereed journals including 3 reviews, many as first or senior author and author of 43 oral lectures (included 9 invited talks) and 36 posters on International conferences. **Bibliometry** (as of 20/07/2015): **H-index = 18**, citations = **977 (819 w/o self-citations)**, average citations per article = **21.24**; **8** publications are with $IF > 5$: *Chem. Commun.* (1), *Polym. Chem.* (2), *J. Mater. Chem. A* (2), *Macromolecules* (3). Full texts: https://www.researchgate.net/profile/Alexander_Shaplov

CAREER AND EDUCATION

- **Visiting Professor** (Universidad del País Vasco/Euskal Herriko Unibertsitatea, POLYMAT, Spain, Prof. David Mecerreyes) 7 months 2015.
- **Doctor of Science degree in polymer chemistry (D. Sc.; Dr. habil.; HDR)** (A.N. Nesmeyanov Institute of Organoelement Compounds Russian academy of sciences (INEOS RAS)) 2014.
- **Invited scientist** (École Polytechnique Fédérale de Lausanne (EPFL), Switzerland with PD Dr. C. Wandrey) 4 months during 2010-2012.
- **Associate Professor degree in polymer chemistry** (INEOS RAS) 2010.
- **Senior researcher** (INEOS RAS) 2009-2014.
- **Invited associated professor (Maitres de conférences et professeurs (MCF)) and further Invited professor** (Université de Cergy-Pontoise, France with Prof. Frederic Vidal and Prof. Dominique Teyssié) 14 months during 2008-2014.
- **Invited scientist** (Leibniz-Institut für Oberflächenmodifizierung e.V. (IOM), Germany with Prof. M.R. Buchmeiser) 2007.
- **Researcher** (INEOS RAS) 2005-2009.
- **Post-doctoral Fellow** (Leibniz-Institut für Oberflächenmodifizierung e.V. (IOM), Germany with Prof. M.R. Buchmeiser) 2006.
- **PhD in polymer chemistry** (INEOS RAS with Prof. Ya. S. Vygodskii) 2001-2005.
- **Junior researcher** (INEOS RAS) 2000-2005.
- **Engineer's degree (Dipl.-Ing.), chemical technology of polymers** (D.I. Mendeleev University of Chemical Engineering of Russia), 1995-2001, Awarded *diploma with distinction*.

AWARDS AND FELLOWSHIPS

- 2013: **S.V. Lebedev's Award** presented by Russian Academy of Sciences for outstanding work in the field of chemistry and technology of synthetic rubber and other synthetic polymers.
- 2008: **Gold medal** from the XI International saloon of industrial properties "Archimed-2008" in the nomination of "Invention, industrial samples, trade marks".
- 2007: **Academia Europaea's Award** (The Academy of Europe) for young Russian scientists in chemistry field, prize-winner of the 14th competition (<http://www.ae-info.org>);
- 2005: Awarded by a **prize "Best Russian Paper in Polymer Science-2004"** from "Nauka/Interperiodica" and Pleiades Publishing Inc., New York, USA publishing houses;
- 2005-09: Three **Fellowships** from President of Russian Federation for young outstanding PhD scientists;
- 2001: Awarded **diploma with a distinction** (all subjects A) from D.I. Mendeleev University of Chemical Engineering of Russia;
- 1996-01: Was honored five times by special scholarships of Academic Council at D.I. Mendeleev University of Chemical Engineering of Russia;
- 1995: Awarded with a **State silver medal** at V. G. Belinskii High school №19.

RESEARCH FUNDING

- 7th EU Commission program FP7-PEOPLE-2012-IRSES, project 318873 «IONRUN» (2012-15); Swiss National Science Foundation (SNCF) SCOPES grant IZ73Z0_128071 / 1 (2010-13); Deutsche Forschungsgemeinschaft – 2 (2006-07); Russian Foundation for Basic Research (RFBR) – 19 projects (2004-14); Scientific grants from Russian academy of Sciences – 6 projects (2002-14); Fellowships from President of Russian Federation - 3 (2005-09); Grant from Independent International Association formed by EU (INTAS) -1 (2005-08). Total: more than \$ 660,000.

PROFESSIONAL SOCIETIES

American Chemical Society (full member since 2012).

SKILLS

Polymer chemistry and characterization:

- Strong background and extensive hands-on experience in general organic and polymer synthetic chemistry. Experience in various polymerization techniques (radical polymerization, polycondensation, ROMP, cyclopolymerization, electropolymerization, vapor phase polymerization, polycyclodehydration, polyaddition, oxidative polymerization, etc.).
- Preparation of advanced polymer materials including gel and porous ones, filled membranes, composite materials, interpenetrating polymer networks, etc.
- Experience with standard wet- and air-sensitive chemistry techniques for molecular synthesis and characterization (chromatography, Schlenk, glovebox, nmr and optical spectroscopy, etc.).
- Use of modern characterization techniques including NMR, FT-IR, ATR, TGA, DSC, DMTA, TMA, UV-visible-NIR, AFM to characterize new materials.

Electrochemistry:

- Design and synthesis of conductive functional polymers that possess required properties to be used for lithium-ion batteries, solar cells (photovoltaic cells), fuel cells, etc.
- Fabrication of lithium-ion cells, solar cells, electrochromic devices and their subsequent testing.

General:

- Collaboration in the development of research proposals and new scientific initiatives. Excellence in written and oral communication skills: writing of research projects, preparation of manuscripts, reports and presentations.
- The ability to lead research projects at various levels: from academic to industrial ones.
- The ability to work creatively and independently with a high level of scientific judgment and initiative and a willingness to become a member of a diverse multi-disciplinary research team.