CURRICULUM VITAE

Agnieszka Starobrat a.starobrat@cent.uw.edu.pl

Higher education:

since 10/2015 **University of Warsaw, Inter-Faculty Individual Studies in Mathematics and Natural Sciences**
- PhD studies on novel hydrogen-rich materials
- supervised by W. Grochala and J. A. Majewski

10/2013 – 09/2015 **University of Warsaw, Faculty of Physics**
- Nanostructure Engineering – MSc (with honors)
- "*Synthesis and physicochemical characterization of selected mixed-metal scandium borides and borohydrides*" supervised by P. Leszczyński and J. Szczytko

10/2012 – 05/2016 **Warsaw University of Technology, Faculty of Physics**
- Applied Physics, specialization Materials and nanostructures – BEng (with honors)
- "*Optimization of nanocrystallization process of $Li_3V_2(PO_4)_2F_3$ glass analogue*" supervised by T. Pietrzak and P. Michalski

10/2010 – 07/2013 **University of Warsaw, Faculty of Physics**
- Nanostructure Engineering – Inter-Faculty studies in cooperation with the Faculty of Chemistry, BSc (with honors)
- "*Magnetic field-induced optical activity of cobalt nanoparticles*" supervised by J. Szczytko

Scientific activity:

since 10/2013 **Laboratory of Technology of Novel Functional Materials, Centre of New Technologies, University of Warsaw**
- synthesis of novel hydrogen-rich materials and their characterization with TGA/DSC, PXRD and FTIR methods
- co-investigator in MNiSW's grant "*Synthesis and physicochemical characterization of the derivatives of yttrium borohydride as potential hydrogen stores for fuel cells*" lead by T. Jaroń, 02/2014 – 12/2014
- co-investigator in NCN's grant "*HYDRA. From efficient hydrogen stores in the solid state to novel multinary and composite functional materials*" leaded by W. Grochala, since 10/2015

07/2016 – 09/2016 **Waterloo Institute For Nanotechnology, University of Waterloo, Canada**
- internship in group of prof. Linda F. Nazar
- synthesis of NASICON materials and their characterization with PXRD and Impedance Spectroscopy methods

06/2014 – 05/2016 **Solid State Ionic Division, Faculty of Physics, Warsaw University of Technology**
- synthesis of glass cathode materials and their characterization with DTA, PXRD and Impedance Spectroscopy methods

Conferences:

12-15/06/2016	**The 15th European Powder Diffraction Conference (EPDIC15), Bari, Italy** • poster “New organic derivatives of scandium borohydride – structure and properties” – main author
18-20/11/2015	**International Conference on Functional Molecular Materials FUNMAT 2015, Cracow, Polska** • poster “Synthesis and physicochemical characterization of selected scandium borohydrides” – main author
22-25/09/2015	**5th Polish Forum SMART ENERGY conversion & storage and 14th Symposium on Fast Ionic Conductors, Białka Tatrzańska, Poland** • poster “Synthesis, and Electrical and Thermal Properties of Li_2O-Me_2O_3-P_2O_5 Glasses and Nasicon-like Nanomaterials” - co-author
14-19/06/2015	**20th International Conference on Solid State Ionics (SSI-20), Keystone, Colorado, USA** • poster “Synthesis of nanostructured $Li_3M_2(PO_4)_2F_3$ glass-ceramics (M = V, Fe, Ti)” - co-author
23-27/03/2015	**58th Scientific Conference for Students of Physics and Natural Sciences - Open Readings 2015, Vilnius, Lithuania** • poster “Thermal decomposition of borohydrides – an attempt at obtaining mixed-metal borides” - main author • poster “Evaluation of new wet chemistry method of borohydrides synthesis” - co-author
7-10/09/2014	**II Ogólnopolskie Forum Chemii Nieorganicznej − Horyzonty Chemii (Polish Inorganic Chemistry Conference), Wroclaw, Poland** • poster “Borowodorki jako prekursory borków metali na przykładzie Mg i Sc” - co-author, honorable mention in Best Poster Award • poster “Ewaluacja metody syntezy borowodorków” - co-author • speech “Nowa metoda syntezy bogatych w wodór borowodorków” - co-author
31/08-5/09/2014	**30th European Conference on Surface Science (ECOSS-30), Antalya, Turkey** • poster “Synthesis of scandium borohydrides and their evaluation as precursors towards metal borides in bulk and as surface coatings” - main author
9-12/07/2013	**10th International Conference on Nanosciences & Nanotechnologies − NN13, Thessaloniki, Greece** • speech “Magnetic Moment and Plasma Frequency of Single Metal Nanoparticle Determined from Faraday and Cotton-Mouton Effect in Ferrofluids” - co-author
9-12/07/2013	**VI Polish Conference on Nanotechnology Nano_2013, Szczecin, Poland** • poster “Magnetic moment and plasma frequency of single metal nanoparticle determined from Faraday and Cotton-Mouton effect in ferrofluids” - main author
17-18/09/2012	**Nano-Biotechnology 2012, Warsaw, Poland** • participant
30/06-7/07/2012	**6th International Summer School on Nanosciences & Nanotechnologies, 9th International Conference on Nanosciences & Nanotechnologies, Thessaloniki, Greece** • participant

Publications:

A. Starobrat, M. J. Tyszkiewicz, W. Wegner, D. Pancerz, P. A. Orłowski, P. J. Leszczyński, K. J. Fijałkowski, T. Jaroń, W. Grochala, "*Salts of highly fluorinated weakly coordinating anions as versatile precursors towards hydrogen storage materials*", *Dalton Trans.*, 44 (2015) 19469.

A. Starobrat, T. Jaroń, W. Grochala, "*Synthesis and characterization of a series of mixed-cation borohydrides of scandium: [Cat][Sc(BH$_4$)$_4$], [Cat]=[Me$_4$N], [n-Bu$_4$N], and [Ph$_4$P]*", *Inorg. Chim. Acta*, 437 (2015) 70.

Languages:

English	advanced (Certificate in Advanced English)
German	intermediate
Spanish	pre-intermediate

Other skills:

programming in:	C, C++, Java, G (Certified LabVIEW Associate Developer)
ability to use:	MS Office, OpenOffice, Matlab, Origin, Jana2006, Topas, OPUS (Bruker), Proteus Analysis, X'Pert HighScore, Materials Studio, Inkscape, Gimp, Linux system
known research techniques:	FTIR, PXRD (including structure solving and refinement), TGA/DSC, MS, Impedance Spectroscopy, XPS, AFM/TEM/SEM/EDX, Raman spectroscopy, inorganic and organic synthesis

Additional information and awards:

vice-president of Nanotechnology Student Scientific Association "Nanorurki" at the Faculty of Physics, University of Warsaw in 2012-2015

3rd award in the European BEST Engineering Competition Final 2015 – category Case Study

member of Mensa Poland

scholarship in the Ministry of Science and Higher Education's program for the best students in academic year 2014/2015

European Social Fund "New challenges - new directions" scholarship for the best students in 2010-2015