

Ilya Litvak

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Education

- PhD, Chemistry, University of California, Irvine, CA, earned December, 2009
research topic: *Pneumatically switched variable angle spinning NMR probe with capacitively coupled RF coil for solid state NMR of oriented systems.*
- MS, Chemistry, University of California, Irvine, (GPA 3.9) 2005
- BS, Chemistry, Moscow State University, Moscow, Russia, 1998
research topic: *Ion-selective electrodes for the determination of phenolic acids.*

Research interests

- Scientific/analytical instrumentation, chemical analysis

Research experience

- Graduate student researcher, University of California, Irvine 2003-2009
NMR probehead with pneumatically switched spinning angle for the new structural studies of membrane proteins
Study of clathrates of hydrocarbons by solid state NMR at cryogenic temperatures.
Converted a commercial solid state NMR probe into variable temperature probe (-150°C to room temperature)
- Lecturer, State University for Oil and Gas, Moscow, Russia 1999-2001
Liquid-liquid type voltamperometric electrochemical sensors
- Undergraduate research at Moscow State University 1995-1998
Ion-selective electrodes for the determination of anionic surfactants and phenolic acids.

Professional and teaching experience

- Teaching assistant, University of California, Irvine 2003-2009
Lower division classes: general chemistry labs and general chemistry discussions.
Upper division labs: analytical chemistry, radioisotope techniques, physical chemistry.
Upper division discussions: physical chemistry.
Graduate level classes: quantum mechanics, classical mechanics and electromagnetic theory, chemical kinetics.
- Analytical laboratory director, Independent Mushroom Plant, Zvenigorod, Russia April-September, 2002
Quality- and process- control analyses of fertilizer samples, procedure refinement for better reproducibility at a startup organic fertilizer plant.
- Technician, State Research Center for Preventive Medical Care, Moscow, Russia August, 2001-December, 2002
Experiments with blood samples for medical research on thrombocyte aggregation.
- Lecturer, State University for Oil and Gas, Moscow, Russia January, 1999-August, 2001
General chemistry labs, lectures and discussions.

Mentoring undergraduate research projects in electroanalytical chemistry.

Waste water quality control analysis.

Software and equipment skills

experienced with CAD software (Autodesk Inventor), familiar with 3D electromagnetic simulation software (CST)

design and fabricate prototypes on professional machine shop equipment

experienced in electrochemical nanofabrication, electroanalytical chemistry and various methods of chemical analysis, electron microscopy (SEM)

familiar with rf test equipment (oscilloscope, spectrum analyzer, function generator)

office software: MS Office and OpenOffice, LaTeX, familiar with Linux-based OS

have deep knowledge of physical and analytical chemistry

Conferences and publications

Southern California Users of Magnets (SCUM) meeting, December 5, 2009, Riverside, California (invited talk)

50th Experimental Nuclear Magnetic Resonance Conference (ENC), March 29 - April 3, 2009, Pacific Grove, California (poster presentation)

50th Annual Rocky Mountain Conference on Analytical Chemistry (RMC), July 27-31, 2008, Breckenridge, Colorado (poster presentation)

41st ACS Western Regional Meeting, October 9-13, San Diego, California (poster presentation)

International Congress on Analytical Chemistry ICAC 97, June 18-22, Moscow, Russia (poster presentation)

Arylboronic compounds - novel carriers for catecholamine selective membrane electrodes, Pletnev I.V., Shvedene N.V., Lyutikova I.V., Nazarova I.A., Litvak I.M., Mikhura I.V., Zolotov Y.A., *Fresenius J Analyt Chem*, Vol. 364 (8), p 682-685 (1999)