

Oksana Mozgina

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PROFESSIONAL PROFILE

- A highly motivated professional with extensive experience in the field of advanced oxidation technologies and non-thermal plasma.
- Design, construction, testing, optimization and troubleshooting of prototype system utilizing high voltage, fluidics, high pressure gas mixtures for water treatment from organic and high-energetic materials.
- Spectroscopic characterization and environmental utilization of atmospheric pressure non-thermal plasma.
- Operation, maintenance and troubleshooting of analytical equipment: Optical Emission Spectroscopy, Atomic Absorption Spectroscopy, UV-VIS Absorption Spectroscopy, HPLC, GC-MS.

EDUCATION

Stevens Institute of Technology, Hoboken, NJ

2009 Doctor of Philosophy in Physics / Environmental Engineering

Thesis *Pulsed electrical discharge in bubbled water for environmental applications.*

Saint Petersburg State Polytechnic University, Russia

2000 Master of Science in Management

Thesis *Modeling of the informational flows structure in public enterprise financing activities.*

Saint Petersburg State Polytechnic University, Russia

1998 Master of Science in Physics

Thesis *Computer modeling of hydrated ions dynamics in atmosphere.*

Saint Petersburg State Polytechnic University, Russia

1996 Bachelor of Science in Physics

EXPERIENCE

Founder / Math Teacher 2018 – Present

Tri-Valley Math Circles, San Ramon, CA

- Development and teaching of Math Competition classes and Standardized Test Preparation classes.

Vice-Principal / Math Teacher 2016 – 2018

Russian School of Mathematics, Dublin, CA

- Managing operation of the office with more than 800 students.
- Teaching middle, high school, and college level math courses, competition math, and college test preparation in classes averaging 17 students.
- Training and mentoring new teachers and staff.

Co-Founder / Project Manager 2010 – 2012

Corvus LLC, Irvine CA

- Assembly and quality control of dynamic light scattering instrumentation modules.
- Managed daily activities and research account, including budgeting and spending.
- Phone customer support of particle size instrument operation and data analysis.

Research Assistant

2002 – 2009

Stevens Institute of Technology, Hoboken, NJ

- Conducted independent interdisciplinary research in the field of non-thermal plasma science and technology, focusing on pulsed electrical discharge in bubbled water.
- Design, constructing, testing and optimization of prototype treatment system for cleaning water, contaminated with explosive materials, using electrical discharge in bubbled water.
- Investigation of the processes involved in the plasma water treatment and analysis of long- and short-lived active species produced by electrical discharge in water.
- Design and assembly of optical emission spectroscopy set-up for the characterization of discharge.
- Investigation of capillary discharge plasma and dielectric barrier discharge plasma efficiencies at ambient pressure for the treatment of vehicle exhaust fumes.
- Analysis of the energy consumption and operating costs of the treatment systems. Scale-up parameters.
- Preparation of quarterly project updates and yearly final reports for implementation of water remediation projects for the Picatinny Arsenal.
- Supervised and mentored junior research group members in research projects; trained sessions in the use of scientific instrumentation and computer data acquisition systems.
- Led weekly laboratory sessions in Modern Physics, Optics, and Electromagnetism.

Finance Planning Manager

1998 – 2001

Avrora Corporation, Saint Petersburg, Russia

- Performed financial planning, cash flows structuring, managing corporate securities. Prepared financial forecasts. Monthly, quarterly and annual financial statements.
- Reorganized and coordinated interdepartmental financial information flows.
- Modeled the corporation financial activity.

Research Assistant

1996 – 1998

Saint Petersburg State Polytechnic University, Russia

- Computer modeling of the dynamics of hydrated ions in the top layers of radiation-contaminated atmosphere.
- Mentoring and training undergraduate students and junior group members in research projects and in use of scientific instrumentation lab.

Supervisor / Interviewer

1993 – 1998

Nielsen Corporation, Saint Petersburg, Russia

- Conducted social and marketing research for corporate clients such as Philip Morris and Johnson & Johnson.
- Designed research topics, focus groups and interviews. Performed data analysis and generated reports.

PUBLICATIONS

- [O. Mozgina](#), A. Koutsospyros, S. Gershman, A. Belkind, C. Christodoulatos, K. H. Becker; Decomposition of Energetic Materials by Pulsed Electrical Discharges in Gas-Bubbled Aqueous Solutions. *IEEE Transactions on Plasma Science*, **37**, [6](#) (2009)
- A. Belkind, S. Gershman, [O. Mozgina](#), C. Christodoulatos, K. Becker; Pulsed electrical discharges in water: fundamentals and applications, *Proceedings of 28th ICPIG*, [16](#) (2007).
- S. Gershman, [O. Mozgina](#), A. Belkind, K. Becker, E. Kunhardt; Electrical Discharges in Bubbled Water, *Contrib. Plasma Phys.*, **47**, [1](#) (2007).
- [O. Mozgina](#), S. Gershman, A. Belkind, K. Becker, C. Christodoulatos; Pulsed Electrical Discharges in Bubbled Water for Environmental Applications, *PRE-8 Conference proceedings* (2006).

PRESENTATIONS

- [O. Mozgina](#), S. Gershman, A. Belkind, K. Becker, C. Christodoulatos; Degradation of Energetic Materials by Pulsed Electrical Discharge in Bubbled Water, [CAPPSA-2007](#), Ghent, Belgium.
- [O. Mozgina](#), S. Gershman, A. Belkind, K. Becker, S. Shah, C. Christodoulatos; Environmental Application of Electrical Discharge in Bubbled Water, [PPPS-2007](#), Albuquerque, NM.
- [O. Mozgina](#), S. Gershman, A. Belkind, K. Becker, C. Christodoulatos; Pulsed Electrical Discharges in Bubbled Water for Environmental Applications, *PRE-8*, 2006, Chania, Greece.
- [O. Mozgina](#), S. Gershman, A. Belkind, K. Becker, C. Christodoulatos; Pulsed Electrical Discharges in Bubbled Water for Environmental Applications, [ICoPS 2006](#), Traverse City, MI.
- [O. Mozgina](#), S. Gershman, A. Belkind, K. Becker, C. Christodoulatos; Pulsed Electrical Discharges in Bubbled Water for Environmental Applications, [ICoPS 2005](#), Monterey, CA.

LINKS

- [Tri-Valley Math Circles](#)
- [Online version of this CV](#)