

SOPHYA GARASHCHUK

Associate Professor
Department of Chemistry and Biochemistry
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PROFESSIONAL PREPARATION

Moscow Institute of Physics and Technology, Moscow, Russia
MS Magna Cum Laude, 1992
University of Notre Dame, IN, Ph. D. Physics, 1998
University of Chicago, The James Franck Institute, 1999-2001

APPOINTMENTS

Associate Professor of Chemistry, U of South Carolina, Columbia, SC 2013-present
Assistant Professor of Chemistry, U of South Carolina, Columbia, SC 2008-2013
Assistant Research Professor, Chemistry, U of South Carolina, Columbia, SC 2002-2004, 2007
Research Associate, Chemistry Dept, Northwestern University, Evanston, IL, 2005-2006

PUBLICATIONS : ORCID <http://orcid.org/0000-0003-2452-7379>

ACCOLADES

Visiting research prof., California Institute of Technology, Pasadena, CA, Fall 2016
Visiting research prof., ADFA/U of New South Wales Canberra, Australia, Summer 2016
USC Rising Star 2012
NSF:CAREER 2011
Doctoral New Investigator ACS-PRF 2011
IBM-Lowdin Fellowship, Sanibel symposium 2004

SYNERGISTIC ACTIVITIES

Co-organizer of the South Carolina Computational Chemistry Consortium (SC4) enabling access to computational chemistry tools for 9 predominantly undergraduate institutions (3 HBCU, 2 minority serving)

Developed and implemented the computational chemistry laboratories for undergraduates (general and organic chemistry labs); developed the computational chemistry graduate course for experimental students to facilitate computational chemistry use in the Department

Mentor, reviewer and judge for the Magellan Scholar program (undergraduate research) at USC. Research mentor for pre-college students via USC SPRI and ASC-SEED programs

Reviewer for 8 physics and chemistry journals and 3 grant agencies

Research computing including user training and HPC access/facilities, University and Senate Research Computing committees

RESEARCH INTERESTS

Theoretical and computational chemistry: theory of quantum, classical and semiclassical reaction dynamics; scattering theory; simulation of quantum effects due to nuclear motion in large systems (reactions coupled to molecular environment and in condensed phase); role of the nuclear quantum effects on properties of materials

COLLABORATORS & OTHER AFFILIATIONS

Collaborators: J. Jakowski (NICS/UTK), B. G. Sumpter (ORNL), V. A. Rassolov (UofSC), G. C. Schatz (NWU), T. K. Minton (MSU), O. V. Prezhdo (U Rochester), B. J. Braams (International Atomic Energy Agency, Vienna, Austria).

D. J. Tannor (The Weizmann Institute of Science, Ph.D. mentor), J. C. Light (U of Chicago, postdoctoral mentor)

Thesis advisor: N. Ekanyake (current), B. Gu (Ph. D. 2016), J. Mazzuca (Ph. D. 2014, Alma College, MI)

Postdoctoral advisor: D. Dell'Angelo, 2012-2013; S. Ghanta, 2012; W. Lei, 2013-2015; T. Vazhappilly, 2009-2011; M. Volkov, 2011-2012

Research advisor for 10 undergraduate and 5 pre-college students

TEACHING

CHEM 112 General Chemistry II

CHEM 542 Physical Chemistry II – Quantum Mechanics and Spectroscopy

CHEM 743 Quantum Chemistry (graduate)

CHEM 643 Computational Chemistry (undergraduate)

CHEM 749/649 Computational Chemistry (graduate/undergraduate)