

Biographical Sketch

Musaev, Djamaladdin (Jamal) G.

Director, Cherry L. Emerson Center for Scientific Computation, Emory University



Professional Preparation: Undergraduate, graduate and postdoctoral training

Institution	Major/Area	Degree	Year
Azerbaijan State University, Azerbaijan	Quantum Physics	BS & MS	1978
USSR Academy of Sciences, Moscow, Russia	Quantum Chem	Ph.D.	1985
Institute for Molecular Sci., Okazaki, Japan	Quantum Chem	JSPS fellow	1991-93

Appointments: **1.** Director, Cherry L. Emerson Center, Emory University (2006-present); **2.** Visiting Professor, Universitat de les Illes Balears, Palme de Mallorca, Spain, (Oct 2007); **3.** Visiting Professor The University of Tokyo, Japan (May 2002 – May 2003); **4.** Manager, Cherry L. Emerson Center, Emory University, (1993-2006); **5.** JSPS Research Associate, Institute for Molecular Science, Okazaki, Japan, (1991-1993); **6.** Senior Researcher, Inst. for New Chemical Problems, USSR Academy of Sciences, Chernogolovka, Moscow Region, Russia, (1986-1993); **7.** Junior Researcher, Inst. for New Chemical Problems, USSR Academy of Sciences, Chernogolovka, Moscow Region, Russia, (1981-1986); **8.** Visiting Scientist, Nesemyanov's Inst. of Organo-Element Compounds, USSR Academy of Science, Moscow, Russia, (1978-1981); **9.** Junior Scientist, Institute for Theoretical Problems of Chemical Processes, Azerbaijan Acad. of Science, Baku, Azerbaijan, (1978-1981).

RESEARCH INTERESTS:

1. Theoretical/Computational Studies of: (on Catalysis, Enzymatic Processes, Drug Design):

- Understanding of fundamental principles of transition metal-catalyzed (including nano-scale catalysts) nitrogen fixation, hydrocarbon oxidation, σ -bond (C-H, C-C etc) functionalization, alkene/alkyne boration, and olefin polymerization;
- Designing of Solar energy-driven robust multi-electron-transfer catalysts for water splitting. Hydrogen production, storage and transportation
- Search for new nano-scale materials with unusual physicochemical properties and reactivity.
- Elucidate mechanisms of enzymatic processes: Search for effective drugs against peroxynitrite toxicity. Application of nano-structures in biology.
- Seleno-metabolism: A search for effective Se-based anti-cancer drugs. Se transport mechanism in body, targeted drug delivery.
- Stereoselective C-H bond functionalization (oxidation, amination, alkylation, etc.)

2. The development of hybrid computational methods applicable to nano-scaled systems.

HONORS:

- Japan Society for Promotion of Science (JSPS) Senior Fellowship, **2013**
- Turkish Scientific and Technological Research Council fellow, **2011**
- Visiting Professor: Universitat de les Illes Balears, Palme de Mallorca, Spain, (Oct. **2007**)
- Visiting Professor: The University of Tokyo, Tokyo, Japan (**2002**)
- Japan Society for Promotion of Science (JSPS) Fellowship (**1991-1993**)

PUBLICATIONS: more than 321 papers, two Books, and six book chapters:
H-Index: 52 (Fifty two); **Total number of citations:** ~9300;

Lecture delivered: more than 370 lectures were delivered at the Universities and R&D companies of USA, Japan, Canada, Russia, Germany, France, Spain, Italy, Sweden, Israel, China, Korea, Taiwan, Azerbaijan,....

Synergistic Activities:

- **Founding Member of the National Science Foundation (NSF, USA) funded “Center for Stereoselective C-H Functionalization”.** Center includes 14 top Universities of USA, 2 leading pharma Companies, 25 Principal Investigators and over 70 researchers. Total finding for 5 years, ~\$20 mil. (see <http://www.nsf-cchf.com/>), Sept., 2012-current
- **Founding Member of the “Emory BioInspired Renewable Energy Center”.** (see <http://ebrec.emory.edu/>), Sept. 2006-current
- **Founder of the Emerson Center Lectureship Award with annual Symposium (2003-current).** (see: <http://www.emerson.emory.edu/conferences/index.html>)
- **Local Committee member** (coordinator of the scientific program) of the 9th Intern. Congress of Quantum Chemistry (9-14 June, 1997, Emory University, Atlanta, USA).
- **Chair of the Organizing Committee of the Intern. Symposium: “In the Frontiers of Quantum Chemistry and Chemical Reactions”** (Emory University, 21-22 May 1999).
- **Local Committee Member** of the International Conference of ADHOC-2002, July, 2002, Emory University
- **Organizer of the Symposium “The Interface of Computation with Chemistry and Biochemistry: Methods and Applications”** within 55th Southeast Regional Meeting of the American Chemical Society (SERMACS-03), November 16-19, 2003, Atlanta, Georgia.
- **Organizer of the International (NATO) Symposium “From Simplicity to Complexity in Chemistry and Beyond: Interplay Theory and Experiment”** (with Drs. C. Hill (USA), A. Muller (Germany), V. Farzaliyev (Azerbaijan)), May 26-29, 2008, Baku Azerbaijan.

Scientific Reviewer of the dozens peer-reviewed scientific journals (such as Nature, Science, JACS; JPC; Org. Let.; Organometallics; Inorg. Chem.; J. Comp. Chem., J. Mol. Str (Theochem), Biochemistry, Angwante Chem., Phys.Chem. Chem. Phys., and more).

Ad-hoc member of NIH reviewer panel, 2008-2009

DOE Catalysis grant reviewer panel, 2009-2014

Scientific reviewer of the DOE, NSF, NIH research proposals