S. Hessam Moosavi Mehr

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Personal information

Date of birth August 7, 1987, Tehran, Iran

Education

MASc Electrical Engineering, University of British Columbia, Vancouver, Canada 2011–

BSc Electrical Engineering, Sharif University of Tech., Tehran, Iran (GPA: 16.5/20) 2005–2009

Preparatory School for the 37th Intl. Chem. Olympiad (IChO), YSC[1], Tehran, Iran 2004–2005

Diploma in the Physical Sciences, Allameh Helli High School, Tehran, Iran 2001–2004

Research interests

Optical excited states, supramolecular chemistry, molecular devices

Research experience

Summer 2010
Sina Khorasani — IPM + Sharif University of Technology
Parallel FDTD applied to the problem of scattering off a metal-patterned dielectric slab.

Summer, Fall 2009
Khashayar Mehrany — Dept. of Electrical Eng., Sharif Univ. of Tech.
(BSc. Thesis) Time-domain study of beam scattering by finite-sized photonic crystals using MEEP.

Spring, Summer 2009
Sina Khorasani — Dept. of Electrical Eng., Sharif Univ. of Tech.
The influence of asymmetry on the band structure of photonic crystals using MIT Photonic Bands (MPB), including development of a Python front-end to MPB.

Spring, Summer 2008
Laboratory of Biophysics & Molecular Biology — Institute of Biochemistry & Biophysics (IBB)
Monte Carlo study of DNA damage as a result of gamma radiation.

Publications

S. H. Mousavi Mehr, S. Khorasani Influence of asymmetry on the band structure of photonic crystals , presented at SPIE Photonics West, 2010, San Francisco, CA, USA

(As mathematical illustrator) S. M. Shahshahani Calculus[2], 2008, Fatemi Publications, Tehran, Iran

S. H. Moosavi Mehr Organic Chemistry in a Nutshell [3], March 2008

S. H. Moosavi Mehr, M. Bahraini eXAM: An Distributed Online Examination System, Proceedings of the 18th International Conference on Chemical Education, 2004, Turkey

[1] Young Scholars Club
[2] ISBN: 978-964-318456-8
[3] Lecture notes for a one-day crash course I taught in Spring 2008, available on my website

Presentations & talks

Electronic excited states of chlorophyll a, Spring 2011, University of British Columbia.

Superconducting Single Photon Detectors, Winter 2010, Sharif University of Tech.

Quantum Espresso, December 2009, Sharif University of Technology

Qt: What? Why? How?, October 2009, Sharif University of Technology

Gamma-Ray Damage to DNA: Method of Study and Phenomenology as Related to it, September 2008, Institute of Biochemistry & Biophysics (IBB), University of Tehran

TEX, April 2007, Sharif University of Technology

Wavelets, January 2007, Sharif University of Technology

Teaching experience

Organic Chemistry Farzangan High School, 2005–2010

Laboratory Instructor Digital Signal Processing Lab, Sharif Univ. Tech., 2009–2010

Chemistry for the IChO Allameh Helli High School, 2009–2010, 2004–2006

Electromagnetics (TA) Spring 2009, Sharif Univ. Tech.

Laboratory Instructor National Biology Olympiad, YSC, August 2008

Laboratory Assistant National Chemistry Olympiad, YSC, August 2006

Selected graduate courses

Nanoscale modeling and simulation

Organometallic chemistry

Photonic crystals

Applied quantum mechanics

Advanced computer programming

Areas of special ability

Interdisciplinary research

Experimental and computational research

Teaching and leadership of scientific communities

Technical writing and computer typesetting

Honors & awards

Ranked 3rd Photonics graduate entrance exam, 2009

Gold Medal (national top 6) National Chemistry Olympiad, Summer 2004, YSC[4], Tehran, Iran

Best Presentation Award First National Symposium on eLearning, 2003, Tehran, Iran

[4] Young Scholars Club is the regulating authority for national and international scientific Olympiads in Iran.

Computer skills

Operating systems Linux, Mac OS X, Windows

Typesetting and publishing LaTeX, Adobe InDesign

Scientific computation Gaussian, GAMESS, MEEP, MPB, FEMLAB

Programming Python, Ruby, C/C++, JavaScript, HTML/CSS, x86 Assembly

Databases SQLite, SQL Server, NoSQL

Numerical/symbolic computing MATLAB, SciPy, Mathematica

Languages

Farsi Native

English Fluent

French Fair

Test scores

TOEFL iBT, August 2010 117/120

GRE General, October 2008 Verbal: 530/800 (68%), Quantitative: 800/800 (94%), Writing: 4.0/6.0 (37%)

GRE Physics, October 2008 940/990(92%)

TOEFL iBT, August 2008 115/120

TOEFL PBT, December 2004 633/670

Service

Head Resana Science[5], 2008–2009

Team Guide 38th Internation Physics Olympiad, July 2007, Isfahan, Iran

Jury Member Giffoni Film Festival, July 2000, Giffoni, Italy

[5] Resana Science is the name collectively given to independent research by the student community in the Department of Electrical Engineering, Sharif University of Technology.