S. Hessam M. Mehr

Department of Chemistry
University of British Columbia
D223 - 2036 Main Mall
Vancouver, BC V6T 1Z1

+1 (778) 322-5954
http://hessammehr.github.io
hessam@chem.ubc.ca

OBJECTIVE

Accelerated chemical discovery through pervasive use of novel software and automation techniques.

AREAS OF RESEARCH INTEREST

Automated design/discovery of taylor-made catalysts, biomimetic design of supramolecular systems, novel NMR techniques.

EDUCATION

Doctor of Philosophy Chemistry, *University of British Columbia*, Vancouver, Canada
Supervisor: Prof. Mark MacLachlan 2011–2017

Bachelor of Science Electrical Engineering, *Sharif University of Technology*, Tehran, Iran
Supervisor: Prof. Khashayar Mehrani 2005–2009

PUBLICATIONS

Tuning the tautomeric behavior of tris(salicylaldimines)
Mehr, S. H. M.; Oshima, H.; Carta, V.; Patrick, B. O.; White, N. G.; MacLachlan, M. J. *Org. Biomol. Chem.*, **2017**, 15, 8418–8424

Formylation of phenols using formamidine acetate
Mehr, S. H. M.; Depmeier, H.; Fukuyama, K.; Maghami, M.; MacLachlan, M. J. *Org. Biomol. Chem.*, **2017**, 15, 581–583

Stabilization of a Strained Heteroradialene by Peripheral Electron Delocalization
Mehr, S. H. M.; Patrick, B. O.; MacLachlan, M. J. *Org. Lett.*, **2016**, 18 (8), 1840–1843

Deuteration of Aromatic Rings Under Very Mild Conditions Through Keto-Enamine Tautomeric Amplfication
Mehr, S. H. M.; Fukuyama, K.; Bishop, S.; Lelj, F.; MacLachlan, M. J. *J. Org. Chem*, **2015**, 80 (10), 5144–5150

Novel PPV/Mesoporous Organosilica Composites: Influence of the Host Chirality on a Conjugated Polymer Guest
Mehr, S. H. M.; Giese, M.; Qi, H.; Shopsowitz, K.; Hamad, W. Y.; MacLachlan, M. J. *Langmuir*, **2013**, 29 (40), 12579–12584

Role of Entropy and Autosolvation in Dimerization and Complexation of C_{60} by Zn_7 Metallocavitands
Frischmann, P.D.; Mehr, S. H. M.; Patrick, B. O.; Lelj, F.; MacLachlan, M. J. *Inorg. Chem.*, **2012**, 51 (6), 3443–3453

Influence of asymmetry on the band structure of photonic crystals
Mehr, S. H. M.; Khorasani, S. in *OPTO*, International Society For Optics And Photonics, **2010**, 76091–76091

eXAM: A Distributed Online Examination System
Mehr, S. H. M.; Bahraini, M. in *18th International Conference on Chemical Education*, IUPAC, **2004**, Turkey

TALKS AND POSTER PRESENTATIONS

Badass Bonding — Unsettled Electrons in Shape-Shifting Molecules
Inorganic Discussion Group, Department of Chemistry, 2016, UBC

A Switch in Character: Deriving Novel Reactivity from Tautomerism
ISMSC 2015: 10th International Symposium on Macrocyclic and Supramolecular Chemistry, 2015, Strasbourg

Kinetics by NMR: A Live Demonstration
8th Annual VIVA NMR Symposium, August, 2014, Vancouver

Using Tautomers for Gentle Deuteration of Benzene Rings
97th Canadian Chemistry Conference and Exhibition, June, 2014, Vancouver

Macrocycles as Functional Materials
Canada-Japan Joint Symposium on Supramolecular Nanomaterials Science, May, 2012, Whistler

OTHER RESEARCH

Summer, Fall 2009
Supervisor: Prof. Khashayar Mehrany — Sharif University of Technology
(BSc. Thesis) Time-domain study of beam scattering by finite-sized photonic crystals

Spring, Summer 2008
Institute of Biochemistry & Biophysics (IBB) — University of Tehran
Monte Carlo simulation of DNA damage by gamma rays

LEADERSHIP, SERVICE

Vice president Chemistry Graduate Student Society (CGSS), UBC, 2013–2014

Presenter/facilitator *Chemistry Field Trips* for high school students, UBC, 2012–2016

Presenter/facilitator *Chemistry Beyond the Magic* open house, UBC, 2011–2015

Mathematical illustrator Shahshahani, S. M. *Calculus*, 2007–2008[1]

TEACHING EXPERIENCE

Shared Instrument Facility (TA) University of British Columbia, 2012–2016

Organic Chemistry Farzanegan High School, 2005–2010

Digital Signal Processing Lab (TA) Sharif Univ. Tech., 2009–2010

Chemistry for the IChO Allameh Helli High School, Tehran, Iran, 2004–2010

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

STUDENTS SUPERVISED

Hannah Depmeier	Multiple-formylation of electron-rich phenols	2016 (BSc)
Mahboobeh Maghami	Tautomerism in Schiff base macrocycles	2014–2015 (PhD)
Stephanie Bishop	Facile H/D exchange in salicylideneamine derivatives	2013–2014 (BSc)
Marcus Farnfield	Salicylaldimines as photodegradable crosslinkers	2013–2014 (BSc)
Jason Yang	Molecular capsules based on salicylaldimines	2013–2014 (BSc)

SOFTWARE

Computational chemistry Gaussian + NBO and AIM interpretations

Programming Python, Clojure, C, Rust, Javascript, LaTeX (github.com/hessammehr)

Numerical/symbolic computing Julia, MATLAB, NumPy/SciPy, Mathematica

LANGUAGES

English, Farsi Native

French, Italian Fair

REFERENCES

Available upon request.

[1] ISBN: 978-964-318456-8, , Fatemi Publications, Tehran, Iran