

## Matthew S. Johnson, Curriculum vitae

Department of Chemistry, University of Copenhagen  
Universitetsparken 5; DK-2100 Copenhagen Ø, Denmark  
Born 14 December, 1966

T: +45 3532 0302  
F: +45 3532 0322  
E: [msj@kiku.dk](mailto:msj@kiku.dk)  
W: <http://kl5.ki.ku.dk/~msj/>

### Education

B.A., 1989, Macalester College, St. Paul Minnesota, *Cum Laude, Highest Honors in Chemistry*  
Thesis title: *Linkage isomerism in the cyanate anion*

Ph.D., 1995, California Institute of Technology (Caltech), Division of Chemistry; Ph.D. candidacy exam 1991. Thesis title: *Spectroscopy of Reactive Molecules and Clusters*

### Employment History

05/86-12/87	Computer Programmer, Honeywell Inc., Minneapolis Minnesota, Laser Gyroscopes
09/86-12/88	Teaching Assistant, Macalester College; Biology, General and Physical Chemistry
05/89-09/89	Research Intern, Medtronic Inc., Fridley Minnesota, Bioactive Surfaces
09/89-06/95	Doctoral Candidate, Caltech; Teaching Physical, Inorganic, and General Chemistry
07/95-05/96	Fulbright Fellow, MAX-Lab Electron Accelerator, Lund Sweden, US State Dept.
06/96-01/98	Research Engineer, MAX-Lab Electron Accelerator, Lund Sweden, EU funded
02/98-05/02	Assistant Professor, Department of Chemistry, University of Copenhagen
05/02-04/10	Associate Professor ( <i>Lektor</i> ), Department of Chemistry, University of Copenhagen
05/10 -	Senior Lecturer ( <i>Seniorlektor</i> ), Department of Chemistry, Uni. Copenhagen

### Highlights

CRC Freshman Chemistry Award, 1986; Phi Beta Kappa and American Inst. of Chem. awards, 1989.

Graduate fellowships: U. S. Dept. of Energy Scholar, 1991-92; Grace/Bray Fellow, 1993-95.

Voted the best Teaching Assistant in General Chemistry by the Caltech freshman class, 1992.

Initiation, planning and teaching of new courses: The Physics of Molecules (BSc, 05 - present),  
Scientific Writing and Presentation (MSc, PhD, 07 - 10).

Teaching: Spectroscopic Identification (BSc, 98 - 03); Atmos. Chem. for Geophysicists (Bsc, 98 - 04); Atmos. Env. Chem. (MSc, 99 - present); Introduction to Environmental Chemistry (BSc, 00 - present); Reaction Kinetics (BSc, 01 - present); Air Pollution and Health (elite MSc, 09-present).

Initiator and coordinator of the Nordic Network for Chemical Kinetics with funding from the Nordic Council of Ministers (NorFA/NordForsk), 2000 - 05, the network included 14 universities in Scandinavia and the Baltic region.

Organizer for the First through the Tenth Informal Conferences on Atmospheric and Molecular Science, (editor, secretary, many times as chair), 2000 - 11.

Advisory committee for the Second, Third and Fourth International Symposia on Isotopomers; co-organizer of the Fifth International Symposium on Isotopomers, Amsterdam, June 2010.

Secretary of the Danish Chemical Society 2003 - 06.

Member of the Board of the Department of Chemistry, University of Copenhagen, 2008 - present.

Elected Member of the Natural Sciences Faculty Board for Bachelor Studies, 2007 - 10.

Steering Committee of the Copenhagen Center for Atmospheric Research (CCAR), 2006 - present.

EU project INTRAMIF, member of Executive Board; Training Coordinator, 2009 - 12.

Currently supervisor for 2 postdocs, 4 PhD students and 3 MSc students.

77 publications in international refereed journals, these publications are cited by 1030 other articles, H-index of 20 (Google Scholar).

Funding from EU project INTRAMIF; EU project EUROCHAMP-2; Villum Kahn Rasmussen Foundation; Private venture capital; Carbon Capture Mongstad project from Statoil, Gassnova and the Norwegian Government; Copenhagen Cleantech Cluster; Carlsberg.

Coauthor of the textbook *Chemistry and the Environment*, Cambridge University Press, 448 pages, 2012.

### Research interests

1. Air purification. Research prototype installed in cleantech showcase building during fall of 2009. Patent rights owned by the University of Copenhagen: A method and device for cleaning air by M. S. Johnson and J. Arlemark, European Patent Agency 08388017.9, International Patent Cooperation Treaty PCT/EP2009/055849. Establishing spin-off company.
2. Isotope effects in atmospheric chemistry. See for example Y. Ueno, M. S. Johnson et al., Geological Sulfur Isotopes Indicate Elevated OCS in the Archean Atmosphere, Solving the Faint Young Sun Paradox, *Proceedings of the National Academy of Sciences*, 106(35), 14784 - 14789, 2009.
3. Atmospheric photochemistry, climate change, air pollution, atmospheric chemistry of biofuels, spectroscopy and kinetics, chemical microscopy of levitated particles.

### **Fundraising as Principle Investigator (2011)**

Copenhagen Cleantech Cluster, GAP funding pool with venture capital for commercial development, Photochemical Air Purification (2011), 500.000 DKK  
Carlsberg Fund, The Disposable Photoreactor (2011), 600.000 DKK  
Statoil/Sintef, Nitrosamine Photolysis (2011), 653.315 DKK  
Statoil/Sintef, Chlorine chemistry of amines (2011), 862.881 DKK  
Co-financing of PhD position, NBI Center for Ice and Climate 500.000 DKK, Department of Chemistry ca. 6 months, IntraMIF project 1.5 years (2012)  
IntraMIF EU ITN (2009 - 2013), 4.000.000 DKK

### **Postdoc Supervisor (2011)**

Karen Feilberg, Jimmy Heimdal, René Wugt Larsen

### **PhD Supervision (current)**

Primary Supervisor for Johan Schmidt, Carl Meusinger, and Magnus Joelsson  
Co-Supervisor for Helle Kjaer, Tesfaye Berhanu

### **Msc Supervision (current)**

Vitalijs Rodins, Mehrnoush Fard, Denise Jensen, Hans Christian Budtz

### **Outreach - Industry - Consulting**

Construction of industrial scale emissions control prototype in a shipping container, collaboration with LM Windpower and Copenhagen Cleantech Cluster  
Member of expert committee on pollution remediation for Region Hovedstad  
Advisor to Norwegian Pollution Agency regarding emissions from transportation sector  
NASA expert panel on use of stable isotopes to study sulfur in the atmosphere, Washington DC.  
Session Chair, Atmospheric Sciences section, European Geophysical Union annual meeting, Vienna.  
Organizer of The Tenth Informal Conference on Atmospheric and Molecular Science, Royal Danish Academy of Sciences and Letters, June 2011.

### **Censor/Judge/PhD thesis evaluation:**

Kent Salo, Department of Chemistry, University of Gothenberg, PhD thesis, Faculty Opponent, Physical Properties and Processes of Secondary Organic Aerosol and its Constituents  
Mauritz Ryding, Department of Chemistry, University of Gothenberg, PhD, thesis evaluation committee, Experimental Studies of Cluster Ions Containing Water, Ammonia, Pyridine and Bisulphate  
Environmental Chemistry, Bsc, Uni So Denmark Odense  
Chair of evaluation committee for Assistant Professor in Surface Chemistry, Department of Chemistry, University of Copenhagen 2012.

### **Refereeing for journals in 2011:**

Atmospheric Chemistry and Physics (2x), Analytical Chemistry, Atmospheric Environment, Chemical Physics Letters (2x), Journal of Chemical Physics, Journal of Physical Chemistry A, Nature, Science