

## Curriculum vitae for lektor(msk), dr.scient. Niels Engholm Henriksen

### Research profile:

Curiosity-driven research within theoretical chemistry, atomic-level description of chemical reactions; with the aim of explaining and predicting experimental observations in chemistry. Development of methods and concepts based on quantum mechanics. Emphasis on photo-induced reactions, description/interpretation of femtosecond pump-probe experiments, and the atomic-scale control of chemical reactions. Timely, early contributions to femtochemistry, in particular: quantum wave packet dynamics, field-free orientation of molecules, selective bond breakage in polyatomic molecules, electron dynamics, time-resolved x-ray diffraction, chemical dynamics induced by phase-shaped laser pulses, etc.

Published more than 85 papers in leading international chemistry and physics journals (principal author on the vast majority of the papers, single/first or last author on more than 80% of the papers).

Written (together with F.Y. Hansen) the book “Theories of Molecular Reaction Dynamics” (Oxford Graduate Texts, Oxford University Press, 2008, 392 pages).

### Education:

- Cand.polyt. (M.Sc.) in chemistry, Technical University of Denmark, 1983.
- Ph.D. in chemical physics, Technical University of Denmark, 1987.
- Dr.scient. (D.Sc., Doctor of Science), University of Copenhagen, 1994.

### Employment:

- 1987-1988 Postdoctoral research associate (in professor Eric J. Heller’s group - from 1994 at Harvard University), University of Washington, Seattle, Washington USA.
- 1988-1991 Seniorstipendiat, (senior research scholar), H. C. Ørsted Institute, University of Copenhagen.
- 1991-1995 Adjunkt (assistant professor) Chemistry Department B, Technical University of Denmark.
- 1995- Lektor (associate professor) Department of Chemistry, Technical University of Denmark.
- 2005-2013 Founding member of the Danish National Research Foundations “Center for Molecular Movies”.

### Awards/honors:

- Carlsberg foundation “J.C.Jacobsen” fellowship, 1987.
- Gold medal in chemistry, University of Copenhagen, 1990.
- Statoil Prize, 1996.

#### Administrative duties, recent and current :

2005-2014 Elected member of the Academic Council, Technical University of Denmark.

2012-2014 PhD Committee of Chemistry, Biotechnology and Chemical Engineering.

2008- Danish representative in the management committee' of two EUCOST actions.

2011-2016 Appointed to the research council FNU, i.e., the Danish Council for Independent Research | Natural Sciences.

#### International meetings - organizer:

Chair of FEMTO11, The Copenhagen Conference on Femtochemistry, Copenhagen (2013).

In addition, co-organizer of several conferences, e.g.: CERC3 Workshop on "Theory and Modelling of Chemical Systems and Processes", Perugia, Italy (1992); "MOLEC XI, 11'th European Conference on Dynamics of Molecular Collisions", Nyborg, Denmark (1996).

#### Referee - includes:

Many journals and research proposals: The British Engineering and Physical Sciences Research Council, United States Department of Energy, US National Science Foundation, United States-Israel Binational Science Foundation, Israel Science Foundation, German Science Foundation (DFG), European Research Council (ERC).

#### Editor:

Guest editor of Femtochemistry/FEMTO11 special issue of Chemical Physics (2014).

#### Visit to foreign institutions (visits longer than 1 month):

Max-Planck Institute, Göttingen, Germany; University of Washington, Seattle, USA; California Institute of Technology, Pasadena, USA.

#### Visiting Scientists (visits longer than 1 month):

Volker Engel (Universität Würzburg), Jeffrey L. Krause (University of Florida). Ashwani K. Tiwari (Indian Institute of Science Education and Research Kolkata).

#### Teaching experience:

Teaching physical chemistry, at all levels, for more than 20 years.

#### Students and postdocs-includes:

Bjarne Amstrup, Michael Grønager, Klaus B. Møller, Rasmus Gustavsen, Hans C. Westtoft, Gustavo Velardez, Ashwani K. Tiwari, Ulf Lorenz, Caralee Nelson, Chuan-Cun Shu, Asmus Dohn, Jacob S. Nielsen, Esben Thomas (current), Gianluca Levi (current), Mats Simmermacher (current), Alexandre Voute (current), David G. Bording (current) and several undergraduates.

#### Invited talks, recent:

Department of Chemistry, University of Birmingham (April 2014). Department of Chemistry, University of Potsdam (July 2014). CFEL/University of Hamburg (July 2014). COST Action, Gdansk University of Technology (September 2014). AMOC 2015, Madrid (April 2015). Nordita Workshop, Stockholm (June 2015). FEMTO12, Hamburg (14/7-2015). IBER2015 (Plenary Lecture), Aveiro, Portugal (7/9-2015). MOLIM 2017, ETH, Zürich (20/4-2017).