

Education

1999

PhD in Chemistry, University of Southern Denmark. Thesis: Atmospheric Chemistry of Polycyclic Aromatic Compounds with Special Emphasis on Nitro Derivatives. Carried out at Risø National Laboratory.

1995

M.Sc.in Chemistry and Environmental Biology, Roskilde University. Thesis on: Spektrokinetic investigations of Freon substitutes. Carried out at Risø National Laboratory.

Occupation

Present

Associate Professor, Aarhus University, Dept. of Engineering. Leader of Air Quality Engineering Group.

2008 – 2010

Senior Scientist, Aarhus University, Dept. of Biosystems Engineering.

2008 – 2003

Consultant and project manager, Danish Technological Institute. Primary objective to develop online mass spectrometry for process monitoring and control.

2002 – 1999

Post Doc, Risø National Laboratory, Denmark. Project: Construction and application of a gas-phase peroxy radical detector based on chemical amplification.

Research management education

2007

Teknologisk Instituts Talentprogram.

2010

Project management course. Implement.

2011

Research management course. CBS-SIMI.

Research areas and competences

- Analytical chemistry: Online mass spectrometry (PTR-MS and MIMS), GC/MS, Cavity-ring-down spectroscopy, method development.
- Environmental technology: Chemical and biological air cleaning.
- Isotopic labelling for identification of microbial pathways.
- Gas phase and heterogeneous chemistry: Process characterization, source identification, kinetic modelling, interphase mass transfer.
- Environmental chemistry
- Project management.

Selected recent and ongoing projects

- HYDROGEN CONTROL for optimization of methane production from livestock waste (HYCON). Danish Strategic Research Council, 2011-2015. Overall project manager.
- BoP-OP: Balance of Plant Optimisation (Fuel cell project). EUDP, 2015-2017. Work package manager.
- Updating and mapping of ammonia emissions from cattle buildings. MAF 2014-2016. Overall project manager.
- SIMBA: SIMBA – Platform project on development and demonstration of small Fuel Cell units. EUDP, 2013-2016. Work package manager.
- BioPunkt: Biological Air Cleaning for Point Extraction. GUDP, 2013-2016. Overall project manager.
- Fungal VOC released from wood chips. INNO-MT, 2013-2014. Overall project manager.
- Optimization of a non-thermal plasma scrubber for odor removal. Nordforsk Public Private Partnership, 2010-2014.
- FUTUREMILQ. Innovation Consortium, 2012-2016.
- Application of Advanced Oxidation Processes for Air Cleaning. AU, 2011-2015. Overall project manager.
- Olfactometry and Chemical Analysis for Development of Odour Abatement Technologies. GUDP, 2011-2015. Overall project manager.
- CEBONA: Cost-effective biofilters for odour nuisance abatement in pig production. Danish Strategic Research Council, 2009-2012. Overall project manager.
- Ozone system for reduction of odour and preservation of nitrogen in manure. Innovation project, Danish Food Industry Agency, 2008-2010. Overall project manager.

International collaboration

Kei Toda: University of Kumamoto, Japan (BoP-OP)

Marcell Nikolausz: UFZ Helmholtz-Zentrum für Umweltforschung, Leipzig, Germany (HYCON)

Frank Keppler and Daniela Polag: Max Planck Institute for Chemistry at Mainz, Germany (HYCON)
Nico Ogink: Wageningen University Research, the Netherlands (Several projects)
Herman van Langenhove: University of Ghent, Belgium (Biopunkt)
Marc Deshusses: Duke University, USA (CEBONA)
Jon Are Beukes: Applied Plasma Physics, Norway (Nordforsk PPP)

Industrial collaboration

All projects mentioned above include industrial collaboration with e.g. SKOV, Novozymes, Xergi, Dantherm Power, SEGES, Weber Saint-Gobain, MT Højgaard, Verdo, Danish Technological Institute.

Other tasks

Reviewer for several journals e.g.: Environmental Science & Technology, Atmospheric Environment, Chemosphere, Chemical Engineering Journal, Environmental Technology, Journal of Environmental Quality. Member of MELT: Expert panel on Air Cleaning, Danish Environmental Protection Agency. Member of Atmospherica – AU network on atmospheric aerosols. Chairman of the Study Board for Aarhus School of Engineering and Department of Engineering.