

Curriculum Vitae

Name: Karl Erik BIRGERSSON

Present Appointment: Associate Professor

Contact Information:

Department of Mechanical Engineering

Engineering Science Programme

Faculty of Engineering

Block E2, #35-02

5 Engineering Drive 2, Singapore 117576

Tel: (65) 6516 7132



Research Areas:

- Energy systems: fuel cells, batteries, solar cells
- Transport phenomena, mathematical modeling

Teaching Areas:

- Programming in C, numerical methods, transport phenomena
- Engineering mechanics, design, energy systems, ethics

Academic/Professional Qualifications:

- Postdoctoral research fellowship (2004-2005) in responsive materials at Institute of High Performance Computing (IHPC), Singapore
- Licentiate (2003) and Ph.D. (2004) in Fluid Mechanics at the Department of Mechanics, FaxenLaboratoriet, KTH, Stockholm.
- Master of Science (1998) in Chemical Engineering, KTH, Stockholm
- Norrlandsjägare (Swedish Arctic Rangers, 1993-1994), squad leader, K4 Arvidsjaur

Awards/Honours (Post-PhD):

- Commendation List (2006/2007, 2007/2008, 2009/2010, 2010/2011), ESP Teaching commendation award (2011-2015), NUS
- Innovative Teaching Award (2007/2008), Engineering Educator Award (2012/2013,2013/2014,2014/2015), Annual Teaching Excellence Award (2012/2013,2013/2014,2014/2015), NUS
- President's Design Award 2015, Editor's Choice & Reader's Choice for Most Innovative Product: Air+ Smart Mask 2015, Top reviewer (Applied Energy, 2009, Elsevier)

Career History:

- Research engineer (2005-2006) at the Institute of High Performance Computing (IHPC), Singapore
- Associate (2006-present) of the Engineering Science Programme, NUS
- Adjunct faculty (2009-present) at SERIS
- Assistant Professor (2006-2014) at the Chemical and Biomolecular Engineering Department, NUS, Singapore
- Associate Professor (2015-present) at the Chemical and Biomolecular Engineering Department, NUS, Singapore

Administrative Leadership:

- Graduate program manager in ChBE (2015-2016), NUS; Chair of accreditation in ESP (2013-present), NUS
- Conference program chair for International Conference on Applied Energy (2010)
- Guest editor (2007); Innovation, the magazine of research & technology; Guest editor (2010), Applied Energy

Professional/Consulting Activities:

- Consultant (2004-2006) for Activemedia Pte Ltd in Multi-physics Modeling and Simulation with Comsol Multiphysics, introductory and advanced courses, Singapore
- Consultant (2013-2014) for Singapore Technologies Dynamics Pte Ltd
- Consultant (2015-2016) for Innosparks Pte Ltd

Major Publications (Maximum of 3):

- E. BirgerSSon, H Li and S Wu, Transient analysis of temperature-sensitive neutral hydrogels, J. Mech. Phys. Solids, 56 (2008)
- E. BirgerSSon, M. Noponen and M. Vynnycky, Analysis of a two-phase non-isothermal model for a PEFC, J. Electrochem. Soc., 152 (2005)
- E. BirgerSSon et al., Reduced two-phase model for analysis of the anode of a DMFC, J. Electrochem. Soc., 151 (2004)

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