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PERSONAL INFORMATION

DATE OF BIRTH:	May 9, 1974
NATIONALITY:	Danish
CIVIL STATUS:	Married, two children (born 2009 and 2011)

WORK EXPERIENCE

2018 – present

Senior Specialist, Computational Fluid Dynamics (CFD), Danfoss A/S, Refrigeration and Air Conditioning, Nordborg, Denmark

- Valve research and development:
  - CFD simulations
  - Acoustic measurements

2016 – 2018

Computational Fluid Dynamics (CFD) Expert, Danfoss A/S, Refrigeration and Air Conditioning, Nordborg, Denmark

2011 – 2016

Senior Research Engineer, Siemens A/S, Flow Instruments, Sønderborg, Denmark

- Flowmeter research and development:
  - Technology project management
  - Coriolis and electromagnetic flowmeters

2009 – 2011

Principal Scientist, ABB Switzerland Ltd., Corporate Research, Baden-Dättwil, Switzerland

- Air-insulated medium-voltage load break switches
- Gas-insulated medium- and high-voltage circuit breakers
- Pressure and optical flow measurements in circuit breakers

2006 – 2008

Scientist, ABB Switzerland Ltd., Corporate Research, Baden-Dättwil, Switzerland

2002 – 2005

Postdoctoral Associate, Massachusetts Institute of Technology (MIT), Cambridge, Massachusetts, USA

- Fusion plasma turbulence measurements using phase-contrast imaging and reflectometry
- Control software and camera for lower hybrid current drive

EDUCATION

1999 – 2002	**Ph.D. in Physics** from the Niels Bohr Institute at the University of Copenhagen, Denmark. The title of my Ph.D. Thesis is: "Turbulence in Wendelstein 7-AS Plasmas Measured by Collective Light Scattering" [Included a total of two years work at the Institut für Plasmaphysik in Garching, Germany]
1996 – 1998	**M.Sc. in Physics** from the Niels Bohr Institute at the University of Copenhagen, Denmark. The title of my M.Sc. Thesis is: "Modelling of Neutron Emissivities at JET Using Charge Exchange Spectroscopic Data" [Included a one-year stay at the Culham Science Centre in Culham, UK]
1993 – 1996	**B.Sc. in Physics** (Mathematics 2nd topic) from the Niels Bohr Institute at the University of Copenhagen, Denmark
1990 – 1993	**High School** focusing on Mathematics and Physics, Middelfart, Denmark

FURTHER EDUCATION

2017	**ANSYS AIM**, Nordborg/Kolding, Denmark
2017	**ANSYS Acoustics**, Nordborg, Denmark
2016	**ANSYS Mechanical**, Sønderborg, Denmark
2014	**Personal Performance**, Nordborg, Denmark
2013	**Multiphase Flow Modeling in ANSYS CFX**, Aarhus, Denmark
2012 – 2013	**Siemens People and Business Management 3 (PBM3)**, Billund, Denmark
2011	**Opera-3d software training course**, Kidlington, England
2011	**Introduction to ANSYS CFD with CFX**, Oslo, Norway
2009	**KARRASS Effective Negotiating**, Zürich, Switzerland
2007	**Introduction to Macroeconomics**, ETH Zürich, Switzerland
2007	**ABB Leadership Challenge Program**, Zürich, Switzerland
2006	**ABB Project Management Basics**, Ladenburg, Germany
2001	**16th NATO Advanced Study Institute School in Physics**, Geilo, Norway
1999	**4th Carolus Magnus Summer School on Plasma Physics**, Maastricht, The Netherlands
1997	**34th Culham Plasma Physics Summer School**, Culham, England

PUBLICATIONS IN REFEREED JOURNALS

First author: 16 publications, see Appendix A
Co-author: 24 publications, see Appendix B

NON-REFEREED CONFERENCE PUBLICATIONS

First author: 9 papers, 10 presentations, 10 posters
Co-author: 16 papers, 15 presentations, 27 posters (partial list)

PATENTS

Gas insulated circuit breaker, publication number EP 2 455 957 A1
Circuit breaker, publication number WO 2009/140999 A1

TEACHING

2018 – present	**External examiner** of mechanical engineering in the Danish university system
2000	**Teaching Assistant** during a one-semester course in Mathematics ("Matematik A") for first year Chemistry students at the University of Copenhagen, Denmark

SUPERVISION

2014 – 2016	Matej Simurda, Ph.D. student at the University of Southern Denmark "Mathematical Modeling of Ultrasound Propagation in Multi-phase Flow"
2016	Michael Leth-Nielsen, M.Sc. student at the University of Southern Denmark "Simulations of AC magnetic fields in flowmeters"
2015	Janna Hofmann, M.Sc. student at Karlsruhe Institute of Technology "Upgrade of a LabVIEW control system of a 3D measuring robot to analyze the magnetic field inside an electromagnetic flowmeter"
2015	Francesco Russo, intern at TU Delft CFD simulations of incompressible and compressible flow
2015	Dionysios-Konstantinos Neofytos, M.Sc. student at the University of Southern Denmark "High speed gas flow measurements and analysis in Coriolis flow meters"
2014	Darlene O'Carroll, intern at University of Limerick Competitor benchmarking
2014	Brice Rogié, M.Sc. student at INSA Toulouse "Water Hammer Effect on Coriolis Flowmeter – Pressure Wave Propagation"
2014	Yu Lin, M.Sc. student at the University of Southern Denmark "Numerical Modeling of Electromagnetic Flowmeter"
2014	Katrine A. Juhl, M.Sc. student at Aalborg University "Aerated Flow Measurement and Modelling of a Coriolis Flowmeter"
2013	Leah Hormann, M.Sc. student at the Mannheim University of Applied Sciences "Computational Fluid Dynamics Simulations of Electromagnetic Flowmeters"
2013	Matej Simurda, M.Sc. student at the University of Southern Denmark "Two Dimensional Analysis of Clamp-On Ultrasonic Flowmeters"
2012	Elvar Ásmundsson and Mikkel H. Callesen, B.Sc. students at the University of Southern Denmark EA: "Turbulent Flow in Straight Pipes" MHC: "Pressure Loss in Pipes"
2010	Christopher Kissing, M.Sc. student at the Cologne University of Applied Sciences "Untersuchung von dreidimensionalen Strömungen in einem kleinen Schaltermodell"
2004 – 2005	Arturo Dominguez, Ph.D. student in the MIT Department of Physics "Study of Density Fluctuations and Particle Transport at the Edge of I-Mode Plasmas"

REFEREEING

2018 – present	- Multidiscipline Modeling in Materials and Structures
2015 – present	- Measurement Science and Technology
2014 – present	- Flow Measurement and Instrumentation
2012 – present	- Journal of Physics D: Applied Physics
2010 – present	- Physics Letters A
2010 – present	- IEEE Transactions on Power Delivery
2009 – present	- Physics of Plasmas
2009 – present	- Plasma Physics and Controlled Fusion
2008 – present	- The Open Plasma Physics Journal
2007 – present	- IEEE Transactions on Plasma Science
2005 – present	- Nuclear Fusion
2004	- US Department of Energy

STANDARDISATION WORK

2015 – 2016	Member of Danish Standards Participation in ISO/TC 30/SC 5/WG 5 to write new standard: "Measurement of fluid flow in closed conduits – Guidance for the use of electromagnetic flowmeters for conductive liquids"

LANGUAGES

- Danish (mother tongue)
- English and German (fluently spoken and written)
- Swedish (spoken)
- French (basic knowledge)

FURTHER KNOWLEDGE

- Programming languages: Fortran, IDL, MATLAB, MDS+, Pascal
- Simulation tools: ANSYS CFD/Mechanical, STAR-CCM+ and Cobham Opera-3d (Vector Fields)
- Operating systems: Windows and Unix/Linux
- Signal processing
- Experimental skills: Acousto-optic modulators, data acquisition (CAMAC, compact PCI, PCI), flowmeters, high speed cameras, infrared and visible lasers and detectors, microphones, microwave components, optics, pressure sensors

REFERENCES

Available upon request

APPENDIX A - FIRST AUTHOR

1. **Turbulence intensity and the friction factor for smooth- and rough-wall pipe flow**, N.T.Basse, Fluids 2 (2017) 30
2. **Coriolis flowmeter damping for two-phase flow due to decoupling**, N.T.Basse, Flow Measurement and Instrumentation 52 (2016) 40-52
3. **A review of the theory of Coriolis flowmeter measurement errors due to entrained particles**, N.T.Basse, Flow Measurement and Instrumentation 37 (2014) 107-118
4. **Measured 3D turbulent mixing in a small-scale circuit breaker model**, N.T.Basse et al., Journal of Physics D: Applied Physics 44 (2011) 245201
5. **Measured turbulent mixing in a small-scale circuit breaker model**, N.P.T.Basse et al., Applied Optics 48 (2009) 6381-6391
6. **Quantitative analysis of gas circuit breaker physics through direct comparison of 3D simulations to experiment**, N.P.Basse et al., IEEE Transactions on Plasma Science 36 (2008) 2566-2571
7. **A study of multiscale density fluctuation measurements**, N.P.Basse, IEEE Transactions on Plasma Science 36 (2008) 458-461
8. **Diagnostic systems on Alcator C-Mod**, N.P.Basse et al., Fusion Science and Technology 51 (2007) 476-507
9. **Density fluctuations on mm and Mpc scales**, N.P.Basse, Physics Letters A 340 (2005) 456-460
10. **Characterization of core and edge turbulence in L- and enhanced D-alpha H-mode Alcator C-Mod plasmas**, N.P.Basse et al., Physics of Plasmas 12 (2005) 052512 (14 pages)
11. **Small-angle scattering theory revisited: Photocurrent and spatial localization**, N.P.Basse et al., Physica Scripta 71 (2005) 280-292
12. **Study of intermittent small-scale turbulence in Wendelstein 7-AS plasmas during controlled confinement transitions**, N.P.Basse et al., Physics of Plasmas 12 (2005) 012507 (11 pages)
13. **Characterization of turbulence in L- and ELM-free H-mode Wendelstein 7-AS plasmas**, N.P.Basse et al., Plasma Physics and Controlled Fusion 45 (2003) 439-453
14. **Turbulence at the transition to the high density H-mode in Wendelstein 7-AS plasmas**, N.P.Basse et al., Nuclear Fusion 43 (2003) 40-48
15. **Spatial distribution of turbulence in the Wendelstein 7-AS stellarator**, N.P.Basse et al., Plasma Sources Science and Technology 11 (2002) A138-A142
16. **Low- and high-mode separation of short wavelength turbulence in dithering Wendelstein 7-AS plasmas**, N.P.Basse et al., Physics of Plasmas 9 (2002) 3035-3049

APPENDIX B - CO-AUTHOR

1. **Fourier collocation approach with mesh refinement method for simulating transit-time ultrasonic flow meters under multiphase flow conditions**, M.Simurda, L.Duggen, N.T.Basse and B.Lassen, IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control 65 (2018) 244-257
2. **A Fourier collocation approach for transit-time ultrasonic flowmeter under multi-phase flow**, M.Simurda, B.Lassen, L.Duggen and N.T.Basse, Journal of Computational Acoustics 25 (2017) 1750005
3. **Scaling of turbulence intensity for low-speed flow in smooth pipes**, F.Russo and N.T.Basse, Flow Measurement and Instrumentation 52 (2016) 101-114
4. **Focused shadowgraphy in the heating volume of a high-voltage gas circuit breaker**, R.Wiget, F.Lundqvist and N.T.Basse, IEEE Transactions on Plasma Science 39 (2011) 2852-2853
5. **Arc-induced turbulent mixing in an SF_6 circuit breaker model**, R.Bini, N.T.Basse and M.Seeger, Journal of Physics D: Applied Physics 44 (2011) 025203
6. **Overview of the Alcator C-Mod research programme**, S.Scott, A.Bader, M.Bakhtiari, N.Basse et al., Nuclear Fusion 47 (2007) S598-S607
7. **Energetic particle physics studies on Alcator C-Mod**, J.A.Snipes, N.Basse et al., Fusion Science and Technology 51 (2007) 437-450
8. **Internal transport barriers in Alcator C-Mod**, C.L.Fiore, D.R. Ernst, J. E. Rice, K. Zhurovich, N. Basse et al., Fusion Science and Technology 51 (2007) 303-316
9. **Confinement and transport research in Alcator C-Mod**, M.Greenwald, N.Basse et al., Fusion Science and Technology 51 (2007) 266-287
10. **Phase contrast imaging of waves and instabilities in high temperature magnetized fusion plasmas**, M.Porkolab, J.C.Rost, N.Basse et al., IEEE Transactions on Plasma Science 34 (2006) 229-234
11. **Comparisons of small ELM H-mode regimes on the Alcator C-Mod and JFT-2M tokamaks**, A.E.Hubbard, K.Kamiya, N.Oyama, N.Basse et al., Plasma Physics and Controlled Fusion 48 (2006) A121-A129
12. **Transport phenomena in the edge of Alcator C-Mod plasmas**, J.L.Terry, N.P.Basse et al., Nuclear Fusion 45 (2005) 1321-1327
13. **Overview of the Alcator C-Mod program**, M.Greenwald, D.Andelin, N.Basse et al., Nuclear Fusion 45 (2005) S109-S117
14. **Observation and modelling of ion cyclotron range of frequencies waves in the mode conversion region of Alcator C-Mod**, Y.Lin, S.Wukitch, A.Parisot, J.C.Wright, N.Basse et al., Plasma Physics and Controlled Fusion 47 (2005) 1207-1228
15. **W7-AS: One step of the Wendelstein stellarator line**, F.Wagner, S.Bäumel, J.Baldzuhn, N.Basse et al., Physics of Plasmas 12 (2005) 072509 (22 pages)
16. **Ion cyclotron range of frequency mode conversion physics in Alcator C-Mod: Experimental measurements and modeling**, S.J.Wukitch, Y.Lin, A.Parisot, J.C.Wright, P.T.Bonoli, M.Porkolab, N.Basse et al., Physics of Plasmas 12 (2005) 056104 (8 pages)
17. **Active and fast particle driven Alfvén eigenmodes in Alcator C-Mod**, J.A.Snipes, N.Basse et al., Physics of Plasmas 12 (2005) 056102 (8 pages)
18. **Toroidal rotation and momentum transport in Alcator C-Mod plasmas with no momentum input**, J.E.Rice, W.D.Lee, E.S.Marmar, N.P.Basse et al., Physics of Plasmas 11 (2004) 2427-2432
19. **Investigation of ion cyclotron range of frequencies mode conversion at the ion-ion hybrid layer in Alcator C-Mod**, Y.Lin, S.Wukitch, P.Bonoli, E.Nelson-Melby, M.Porkolab, J.C.Wright, N.Basse et al., Physics of Plasmas 11 (2004) 2466-2472
20. **Local threshold conditions and fast transition dynamics of the L-H transition in Alcator C-Mod**, A.E.Hubbard, B.A.Carreras, N.P.Basse et al., Plasma Physics and Controlled Fusion 46 (2004) A95-A104
21. **Changes in density fluctuations associated with confinement transitions close to a rational edge rotational transform in the W7-AS stellarator**, S.Zoletnik, N.P.Basse et al., Plasma Physics and Controlled Fusion 44 (2002) 1581-1607
22. **CO2 laser based two-volume collective scattering instrument for spatially localized turbulence measurements**, M.Saffman, S.Zoletnik, N.P.Basse et al., Review of Scientific Instruments 72 (2001) 2579-2592
23. **Trace tritium and the H-mode density limit**, G.F.Matthews, K.-D.Zastrow, P.Andrew, N.P.Basse et al., Journal of Nuclear Materials 266-269 (1999) 1134-1138
24. **Neutron profile measurements for trace tritium experiments**, M.J.Loughlin, N.Watkins, J.M.Adams, N.Basse et al., Review of Scientific Instruments 70 (1999) 1123-1125