

## Teaching portfolio

**1. Teaching CV: A list of any lecturing and supervision tasks, including specification of academic fields, scope, level (bachelor, master, continuing education, PhD) as well as any external examiner tasks.**

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### Course Teaching

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From 2000-2009 (including transitional curriculums) 1 ECTS corresponded to 5 lectures.

From 2009-now 5 ECTS corresponds to about 12 lectures (a work-load of 150h).

Have taught and supervised on as well Danish as English at our international studies.

### *Autumn 2000*

Supplementary teacher in "Thermodynamics for Mechanical Engineers 1" (Maskin & Produktion, 3rd semester) 2 ECTS.

### *Spring 2001*

Co-lecturer in "Modellering af termiske systemer" (TE-direction, 6th semester) 2 ECTS.

Co-lecturer "Modellering og optimering af termiske systemer" (TE-direction, 8th semester) 2 ECTS.

Supplementary teacher in "Thermodynamics for Mechanical Engineers 2" (Maskin & Produktion, 4th semester) 2 ECTS.

### *Autumn 2001*

Co-lecturer in lectures in "Fuel Cell Systems & Hydrogen Production" (TE-direction, 9th semester) 2 ECTS.

Supplementary teacher in "Thermodynamics for Mechanical Engineers 1" (Maskin & Produktion, 3rd semester) 2 ECTS.

### *Spring 2002*

Lecturer in "Modelling of Energy Systems" (TE-direction, 6th semester) 2 ECTS.

### *Autumn 2002*

Lecturer in "Modelling and Optimisation of Energy Systems" (TE-direction, 9th semester) 2 ECTS.

Lecturer in "Thermodynamics for Mechanical Engineers 1" (Maskin og Produktion, 3rd semester) 2 ECTS.

### *Spring 2003*

Lecturer in "Thermodynamics for Mechanical Engineers 2" (Maskin og Produktion, 4th semester) 2 ECTS.

Lecturer in "Modelling of Energy Systems" (TE-direction, 8th semester) 2 ECTS.

### *Autumn 2003*

Lecturer in "Energy System Economy" (Sustainable Energy Thermal SEE-T, 9th semester) 1 ECTS.

Co-lecturer in "RE - Renewable Energy Technologies" (Industri, Basis, 1st semester) 1 ECTS.

Lecturer in "Thermodynamics for Mechanical Engineers 1" (Industri, I3, 3rd semester) 2 ECTS.

Lecturer in "Modelling and Optimisation of Energy Systems" (TE-direction, 9th semester)

### *Spring 2004*

Lecturer in "Energy Resources" (Sustainable Energy Thermal SEE-T, 8th semester) 1 ECTS.

Lecturer in "Thermodynamics for Mechanical Engineers 2" (Industri, I4, 4th semester) 2 ECTS.

Lecturer in "Refrigeration- and Heating Technology" (FACE, 6th semester) 1 ECTS.

Lecturer in "Modelling of Energy Systems" (FACE, 6th semester) 1 ECTS.

Lecturer in "Thermal Process Design" (FACE, 8th semester) 1 ECTS.

### *Autumn 2004*

Co-lecturer in "RE - Renewable Energy Technologies" (Industri, Basis, 1st semester) 1 ECTS.

Lecturer in "Energy System Economy" (Sustainable Energi Thermal SEE-T, 9th semester) 1 ECTS.

Lecturer in "Thermodynamics for Mechanical Engineers 1" (Industri, I3, 3rd semester) 1 ECTS.

Lecturer in "Modelling and Optimisation of Energy Systems" (SEE-T+FACE, 9th semester) 2 ECTS.

### *Spring 2005*

Lecturer in "Energy Resources" (SEE-T, 8th semester) 1 ECTS.

Lecturer in "Thermodynamics for Mechanical Engineers 2" (Industri, I4, 4th semester) 1 ECTS.

Lecturer in "Refrigeration- and Heating Technology" (FACE6, 6th semester) 1 ECTS.

Lecturer in "Modelling of Energy Systems" (FACE6, 6th semester) 1 ECTS.

Lecturer in "Thermal Process Design" (FACE8, 8th semester) 1 ECTS.

### *Autumn 2005*

Co-lecturer in "RE - Renewable Energy Technologies" (Industri, Basis, 1st semester) 1 ECTS.

Lecturer in "Energy System Economy" (SEE-T, 9th semester) 1 ECTS.

Lecturer in "Thermodynamics for Mechanical Engineers 1" (Industri, I3, 3rd semester) 1 ECTS.  
Lecturer in "Modelling and Optimisation of Energy Systems" (SEE-T+FACE, 9th semester) 2 ECTS.

### **Spring 2006**

Lecturer in "Thermodynamics for Mechanical Engineers 2" (Industri, I4, 4th semester) 1 ECTS.  
Lecturer in "Dynamic Modelling of Thermal Systems" (FACE8+HYTEC8, 8th semester) 1 ECTS.  
Lecturer in "Optimisation of Thermal Energy Systems" (FACE8+HYTEC8, 8th semester) 2 ECTS.  
Lecturer in "Hydrogen Production and Storage" (FACE9+HYTEC9, 8th semester) 2 ECTS.

### **Autumn 2006**

Lecturer in "Thermodynamics for Mechanical Engineers 1" (Industri, I3, 3rd semester) 1 ECTS.  
Lecturer in "Fuel Cell Systems" (FACE+HYTEC, 9th semester) 2 ECTS.

### **Spring 2007**

Lecturer in "Thermodynamics for Mechanical Engineers 2" (Industri, I4, 4th semester) 1 ECTS.  
Lecturer in "Dynamic Modelling of Thermal Systems" (FACE8+HYTEC8, 8th semester) 1 ECTS.  
Lecturer in "Refrigeration- and Heating Technology" (FACE6, 6th semester) 1 ECTS.  
Lecturer in "Modelling of Energy Systems" (FACE6, 6th semester) 1 ECTS.  
Lecturer in "Thermal Process Design" (FACE8+HYTEC8, 8th semester) 1 ECTS.

### **Autumn 2007**

Lecturer in "Thermodynamics for Mechanical Engineers 1" (Industri, I3, 3rd semester) 1 ECTS.  
Co-lecturer in "Fuel Cell Systems" (FACE+HYTEC, 9th semester) 2 ECTS.  
Co-lecturer in "Energy Systems of The Future" (Industri, Basis, 1st semester) 1 ECTS.

### **Spring 2008**

Lecturer in "Thermodynamics for Mechanical Engineers 2" (Industri, I4, 4th semester) 1 ECTS.  
Lecturer in "Energy Systems" (FACE6, 6th semester) 1 ECTS.  
Co-lecturer in "Chemical Reactors and Mixing" (TEPE2+HYTEC2, 8th semester) 1 ECTS.  
Main-lecturer in "Dynamic Modelling of Thermal Systems" (TEPE2+HYTEC2, 8th semester) 1 ECTS.  
Lecturer in "Fuel Processing Technology" (TEPE2+HYTEC2, 8th semester) 2 ECTS.

### **Autumn 2008**

Lecturer in "Thermodynamics" (Energi, E3, 3rd semester) 1 ECTS.  
Co-lecturer in "Data Acquisition Technology and Laboratory Safety" (ET3, MP3, 3rd semester) 1 ECTS.  
Lecturer in "Thermal Process Design" (TEPE1, 7. semester) 1 ECTS.  
Lecturer in "Fuel Cells and Hydrogen Technology" (TEPE+HYTEC, 9th semester) 1 ECTS.  
Lecturer in "Optimisation of Thermal Energy Systems" (TEPE+HYTEC, 9th semester) 1 ECTS.  
Co-lecturer in "Energy Systems of the Future" (Energi, Basis, 1st semester) 1 ECTS.

### **Spring 2009**

Lecturer in "Energy Systems" (FACE6 - temporary curriculum, 6th semester) 1 ECTS.  
Co-lecturer in "Chemical Reactors and Mixing" (TEPE1, 8th semester)  
Main-lecturer in "Dynamic Modelling of Thermal Systems" (TEPE2+HYTEC2, 8th semester) 1 ECTS.  
Lecturer in "Fuel Processing Technology" (TEPE2+HYTEC2, 8th semester) 2 ECTS.

### **Autumn 2009**

Lecturer in "Thermodynamics" (Energi, E3, 3rd semester) 1 ECTS.  
Co-lecturer in "Data Acquisition Technology and Laboratory Safety" (E3+MP3, 3rd semester) 1 ECTS.  
Lecturer in "Modelling of Thermal Energy Systems" (TE5, 5th semester) 1 ECTS.  
Lecturer in "Thermal Process Design" (TEPE7, 7th semester) 1 ECTS.  
Lecturer in "Fuel Cells and Hydrogen Technology" (TEPE+HYTEC, 9th semester) 1 ECTS.  
Lecturer in "Energy Technologies of the Future" (Energi, Basis, 1st semester) 1 ECTS.

### **Spring 2010**

Lecturer in "Energy Systems" (FACE6, 6th semester) 1 ECTS.  
Co-lecturer in "Chemical Reactors and Mixing" (TEPE2+HYTEC2, 8th semester) 1 ECTS.  
Main-lecturer in "Dynamic Modelling of Thermal Systems" (TEPE2+HYTEC2, 8th semester) 1 ECTS.  
Lecturer in "Fuel Processing Technology" (TEPE2+HYTEC2, 8th semester) 2 ECTS.

### **Autumn 2010**

Lecturer in "Thermodynamics" (Energi, E3, 3rd semester) 1 ECTS.  
Co-lecturer in "Data Acquisition Technologies and Laboratory Safety" (MP3+EN3, 3rd semester) 1 ECTS.  
Lecturer in "Modelling of Thermal Energy Systems" (TE5, 5th semester) 1 ECTS.  
Lecturer in "Thermal Process Design" (TE7, 7th semester) 1 ECTS.  
Lecturer in "Fuel Cells and Hydrogen Technology" (TEPE3+HYTEC3, 9th semester) 1 ECTS.  
Lecturer in "Optimisation of Thermal Energy Systems" (TEPE3+HYTEC3, 9th semester) 1 ECTS.

Co-lecturer in "Energy Technologies of the Future" (Energi, Basis, 1st semester) 1 ECTS.

### **Spring 2011**

Lecturer in "Energy Systems" (FACE6, 6th semester) 1 ECTS.

Co-lecturer in "Chemical Reactors and Mixing" (TEPE2+HYTEC2, 8th semester) 1 ECTS.

Main-lecturer in "Dynamical Modelling of Thermal Systems" (TEPE2+HYTEC2, 8th semester) 1 ECTS.

Main-lecturer in "Fuel Processing Technology" (TEPE2+HYTEC2, 8th semester) 2 ECTS.

### **Autumn 2011**

Co-lecturer in "Combustion Technology and Chemical Reactors" (TEPE7+Intro7, 7th semester) 5 ECTS.

Lecturer in "Modelling of Thermal Energy Systems" (TE5, 5th semester) 1 ECTS.

Lecturer in "Thermal Process Design" (TE5, 5th semester) 1 ECTS.

Co-lecturer in "Fundamental Thermal Disciplines" (EN3, 3rd semester) 5 ECTS.

Co-lecturer in "Laboratory Safety (gasses and liquids)" (EN3, 3rd semester) 1 ECTS.

### **Spring 2012**

Lecturer in "Design and modelling of thermal systems and Fuel Processing Technology" (TEPE8+HYTEC8, 8th semester) 5 ECTS.

### **Autumn 2012**

Co-lecturer in "Combustion Technology and Chemical Reactors" (TEPE7+Intro7, 7th semester) 5 ECTS.

Co-lecturer in "Fundamental Thermal Disciplines" (EN3, 3rd semester) 5 ECTS.

Main-lecturer in "Thermodynamical Systems and Machines 1" (TE5, TP5-Esbjerg via video, 5th semester) 5 ECTS.

### **Spring 2013**

Main-lecturer in "Design and Modelling of Thermal Systems and Fuel Processing Technology" (TEPE8, HYTEC8, 8th semester) 5 ECTS.

### **Autumn 2013**

Co-lecturer in "Combustion Technology and Chemical Reactors" (TP7-Esbjerg via video, TEPE7, 7th semester) 5 ECTS.

Main-lecturer in "Thermodynamical Systems and Machines 1" (TP5-Esbjerg via video and TE5, 5th semester) 5 ECTS.

### **Spring 2014**

Main-lecturer in "Design and Modelling of Thermal Systems and Fuel Processing Technology" (TEPE8+HYTEC8, 8th semester) 5 ECTS.

### **Autumn 2014**

Co-lecturer in "Combustion Technology and Chemical Reactors" (TEPE1+Intro1+TP7-Esbjerg via video, 7th semester) 5 ECTS.

Main-lecturer in "Thermodynamical Systems and Machines 1" (TE5+TP5-Esbjerg via video, 5th semester) 5 ECTS.

Co-lecturer in "Energy Technology" (TAN3+TAN5 Techno-Anthropology, 3rd+5th semester) 5 ECTS.

### **Spring 2015**

Co-lecturer in "Design and Modelling of Thermal Systems and Fuel Processing Technology" (TEPE8+HYTEC8, 8th semester) 5 ECTS.

Co-lecturer in "Energy Systems" (TAN6, Techno-Anthropology, 6th semester) 5 ECTS.

### **Autumn 2015**

Co-lecturer in "Combustion Technology and Chemical Reactors" (TEPE1+Intro1+TP7-Esbjerg via video, 7th semester) 5 ECTS.

Main-lecturer in "Thermodynamical Systems and Machines 1" (TE5, 5th semester) 5 ECTS.

Co-lecturer in "Energy Systems" (TAN3, Techno-Anthropology, 3rd semester) 5 ECTS.

### **Spring 2016**

Co-lecturer in "Design and Modelling of Thermal Systems and Fuel Processing Technology" (TEPE2+HYTEC2, 8th semester) 5 ECTS

### **Autumn 2016**

Main lecturer in "Modeling of thermal energy systems" (TE5, 5th semester) 5 ECTS.

Co-lecturer in "Energisystems" (TAN3, Techno Anthropology, 3rd semester) 5 ECTS.

Co-lecturer in "Combustion technology and chemical reactors" (TEPE1+HYTEC1+Intro1, 7th semester) 5 ECTS.

Co-lecturer in "Emerging and Cutting Edge Science" (TAN7, Techno Anthropology, Aalborg/Copenhagen, 7th semester) 5 ECTS.

### **Spring 2017**

Co-lecturer in "Chemical thermodynamics and proces optimization" (proces optimization part) (TE6, 6th semester) 5 ECTS. Co-lecturer in "Modelling of thermal systems" - 2/3 of the course about modelling and optimization.

**Autumn 2017** Co-lecturer in "Modelling of thermal systems" - 2/3 of the course about modelling and optimization (TE5, 5th semester) 5 ECTS.7

**Spring 2018** Co-lecturer in "Chemical thermodynamic and process optimization" (process optimization part) (TE6, 6th semester) 5 ECTS.

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#### **Ph.D. Courses**

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Lectures in more parts of the HyFC Ph.D. Summer School in "Industriens Hus", Copenhagen, 2008

Lecturer and Organizer of the course: "Modelling and Optimization of Thermal Process Systems" (held with Ph.D. Jeppe Grue), 2011.

Lecturer in multiple presentation on the Ph.D. course in hydrogen- and fuel cells held in the framework of the HyFC Ph.D. Research School, First Hotel, Aalborg, 12th-14th November 2012.

Lecturer in the course: "Engineering Economics and Techno-Economics Optimization Modelling", 2013.

Lecturer in the course: "Engineering Economics and Techno-Economics Optimization Modelling", 2014.

Lecturer and Organizer of the course: "Modelling and optimization of thermal systems", Autumn, 2017.

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#### **Supervision (B.Sc.+M.Sc.):**

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Have in total supervised 91 groups: 118 M.Sc. students and 234 B.Sc. students.

#### **Spring 2001**

Co-supervisor TE8 (3 students) - "Modellering af absorptionsvarmepumpe", Margret Arnadottir, Jan Jørgensen and Palle U. Knudsen.

#### **Autumn 2001**

Main Supervisor: EMSD10 M.Sc., long M.Sc., (3 students) "Design of a Fuel Cell System for a Transport Application", Anders Korsgaard, Morten Olesen Christensen and Claus Aabjerg.

#### **Spring 2002**

Main Supervisor: EMSD10 M.Sc., long M.Sc., (3 students), Anders Korsgaard, Morten Olesen Christensen and Claus Aabjerg.

#### **Autumn 2003**

Supervisor for I3, Industri (6 students) "Design og Konstruktion af en bådskran" Lars F. Christiansen, Kresten Krogh, Christian Munk, Karin Jessen Nielsen, Esben Lindegaard Olesen and Mikkel Melters Pedersen.

#### **Spring 2004**

Supervisor for FACE10 M.Sc. (1 student) "Modelling and Optimization of Reforming Systems" Melissa Berry.

Supervisor for SEET-8 (2 students) "Heat and Water Management in PEM Fuel Cell Systems" Mao Jie-Hua and Doina Iov.

#### **Autumn 2004**

Supervisor for I3, Industri (8 studerende) "Design og Konstruktion af bådskran" Andreas N. Madsen, Morten K. Bak, Simon Bøgh, Henning Hansen, Susanne Winther, Rasmus Carstens, Michael Hansen and Kristoffer Lund.

Supervisor for FACE9, Energi (3 students) "Modelling of CO Poisoning in PEM Fuel Cells" Angel Martin Peiró, Sajjad Haider and Rupesh Kumar.

#### **Spring 2005**

Co-supervisor for FACE8, Energi (4 students) "Hydrogen Storage Through Metal Hydrides" Diego de La Conception Gil, Manuel T. Solanas, Abishek S. and Rajani K. Buggeni.

Supervisor for SEET-8 (3 studerende) "Catalytic Conversion of Aqueous Biomass" Zuzanna Gruzd, Kent K. Håkans, Malgorzata Grzenda.

#### **Autumn 2005**

Supervisor for I3, Industri (8 students) "Design og konstruktion af en lystbådekran" Gardar Thor Gudbergsson, Esbel Aldal, Martin B. Mogensen, Jesper Christensen, Arni Hrannar Arngrimsson, Simon Lennart Sahlin, Troels Bach Nielsen and Senad Hodzic.

Main Supervisor for HYTEC7, Intro (2 students) "Optimization of the Fuel Cell Systems for the ECO-Marathon Racer" Gildas Courtet and Wei Zhe Tao.

Co-supervisor for FACE9 (2 students) "System Design of Ethanol Reformer" Matthias Mandø and Mirko Bovo.

### **Spring 2006**

Main Supervisor for FACE10 M.Sc. (2 students) "Characterization of a fuel processing unit for a 3kW fuel cell system" Matthias Mandø and Mirko Bovo.

Supervisor for FACE6 (3 students) "Implementering af brændselscelle i lystyacht" Rasmus Carstens, Susanne Winther and Ottar Kjartansson.

Supervisor for HYTEC8 (3 students) "Dynamic modelling and optimization of a fuel cell based CHP system" Gildas Courtet, Wei Zhetao and Kai Ammundsen.

### **Autumn 2006**

Supervisor for HYTEC9 (1 student) "Dynamic modelling of a fuel cell vehicle" Henrik Rønbjerg.

### **Spring 2007**

Supervisor for HYTEC8 (5 students) "Investigation of HTPEM technology for automotive applications" Leanne Ashworth, Ian Nataniel Menjón Remón, Jorge Leonel Garza-Cantú, Merle Klages and Peder Lund Rasmussen.

Supervisor for HYTEC10 (1 student) "Design and control of a PEM fuel cell systems based on the Ballard MK9 Stack" Henrik Rønbjerg.

### **Autumn 2007**

Supervisor for HYTEC9 (1 student) "Modelling the operation of an electrolysis system and a heat pump in an existing CHP-system" Gildas Courtet.

Supervisor for FACE7 (3 students) "Modelling and construction of a test facility for analysis of catalytic material" Kamil Borawski, Michael Haarup Sørensen and Rasmus Carstens.

### **Spring 2008**

Supervisor for FACE6 (2 students) "Modellering af SOFC-system til fremtidens kraftværk" Jakob Rabjerg Vang and Lars Christian Riis Johansen.

Supervisor for HYTEC2 (3 students) "Shell ECO-racer - Modelling and design of a fuel cell propulsion system" Anders Christian Olesen, Julian Jensen and Marcos Rupérez Cerqueda.

Supervisor for HYTEC4 M.Sc. (1 student) "Investigation of Lifetime Issues in HTPEM Fuel Cell Based CHP Systems: Stack Level Degradation" Peder Lund Rasmussen.

Supervisor HYTEC4 M.Sc. (2 students) "Methanol Reformer" Leanne Ashworth and Ian Natanael Menjón Remón.

Supervisor FACE4 M.Sc. (1 student) "Investigation of the potential of ultra-super critical coal fired power plants" Ottar Kjartansson.

Supervisor MP2 - Maskin og Produktion, Basis - (7 students) "Transportabel generator til friluftsb brug", Edin Ahmetpahic, Mikkel Præstholm Ehmsen, Wisam El-Khatib, Bjarke Lykke Gøte, Ole Jensen Scharff, Michael Valsted Sørensen and Morten Hyldgaard Sørensen.

### **Autumn 2008**

Supervisor ET3 (7 students) "Energikonvertering ved Solid Oxide Electrolyser Cells", Martin Larsen, Linn Laurbjerg Jensen, Bjarni Thorsteinsson, Marie Cecilie Pedersen, Morten Ryge Bøgild, Lars Grundahl and Rasmus Bering.

Supervisor HYTEC3 (2 students) "Modelling and optimization of a methanol steam reforming reactor with a commercial catalyst" Anders Christian Olesen and Marcos Rupérez Cerqueda.

Supervisor MP1 - Maskin og Produktion, Basis - (7 students) "Elbilen - Udbredelse og Udvikling" Kristoffer Andersen, Lennart E. Hansen, Matti S. Wulff, Morten B. Rosengreen, Niels R. Kristensen and Peter G. Fritsen.

Supervisor EN1 - Energi, Basis - (8 students) "Energilagring - Overskudsenergi til erstatning af mobile generatorer", Christian Jeppesen, Jess Grotum, Mathias Junge, Pia Schioldan, Rasmus Maarbjerg, Sune Niemann and Sonny Sune Quillo.

### **Spring 2009**

Co-supervisor HYTEC2 (3 students) "Modeling and Parametric study of a micro CHP HTPEM Fuel Cell System" Jakob Rabjerg Vang, Rasmus Larsen Mosbæk and Alfredo Alejandro Mehea.

Supervisor ET4 (6 students) "Regulering af udsugningsanlæg", Morten Ryge Bøgild, Morten Aalbæk Kristensen, Emil Zachø Rath, René Haller Schultz, Rasmus Møller Bering and Kåre Elgaard Buskov.

Supervisor HYTEC4 (1 student) "Formula Zero Gokart" Marcos Rupérez Cerqueda.

Supervisor MP2 - Basis - (6 students) "Produktanalyse - Positionsstyring", Kevin Strandby Rice, Bjarke Dalgaard Justesen, Nicolai Vangsgaard, Michael Fly Pedersen, Leif Malle and Christian Fløe Nissen.

### **Autumn 2009**

Supervisor ET3 (5 students) "Varmesystem til Elbiler", Steffen Christensen, Christian Frandsen, Sonny Sune Quillo, Claus Vad and Christian Aaen.

Supervisor TE5 (5 students) "Simulation of WFPP and Optimization of Electrical Efficiency", Jonas Lundsted Poulsen, Morten Egestrand, Kristine Husballe Munk, Linn Laurbjerg Jensen and Jakob Holmer Sehested.

Supervisor HYTEC9 (2 students) "Modeling and Optimization of a Methanol Reformer", Marcos Rupérez Cerqueda and Anders Christian Olesen.

Supervisor MP1 - Basis - (6 students), "Stirlingmotor til lystfartøjer", Lisa Nielsen, Casper Pedersen, Jacob Bossen, Niels Goul, Søren Mark and Anders Lauridsen.

### **Spring 2010**

Supervisor ET4 (5 students) "Regulering af Solfangeranlæg: Design af trinløs regulering til et Solfangeranlæg", Jess Grotum Nielsen, Jens Henning Bitsch, Anders Holten, Steffen Grumstrup Christensen and Lars Houbak Jensen.

Supervisor TEPE2 (4 students) "Simulation and Optimisation of an Integrated Catliq-process at Nordjyllandsværket", Mads Boel Overgaard Andersen, Jan Kragbæk, Lars Kuur and Nis Peder Reinholdt.

Supervisor EN2 - Basis - (7 students) "Biodiesel - Brændstof til eftertanke", Kristian Zinck Bach, Jacob Gert Kristensen, Anders Vendelbo Tomra, Frederikke Elisabeth Johansen and Jon Rasmussen.

### **Autumn 2010**

Supervisor ET3 (5 students) "Modellering of indpasning af solfangeranlæg i en enkeltfamilies husstand: Solfangeranlæg integreret med jordvæmpumpe", Emil Schmidt, Erik Block Nielsen, Jesper Moos, Jonas Weiss Mortensen and Peter Hedegaard Thomassen.

Supervisor TE5 (3 students) "Modelling of CHP plants: Development of modeling software for design and optimization of CHP-plants", Anders Holten, Lars Houbak-Jensen and Sune Niemann Jensen.

### **Spring 2011**

Supervisor FACE2 (4 students) "Modelling and Optimization of Solid Oxide Fuel Cell System", Thomas Helmer Pedersen, René Haller Schultz, Jonas Lundsted Poulsen and Troels Bartholin Bertelsen.

Supervisor ET4 (5 students) "Regulering af spånsugningsanlæg: Modellering af simulering i Simulink af et dynamisk udsugningssystem", Jakob Hærvig, Michael Hove Knudsen, Mikael Skrydstrup, Kristian Zinck Bach and Simon Sand Nielsen.

Supervisor EN2 (5 students) "Vawahawt - kombineret vertikalt asklet vindmølle og vandmølle", Camilla Hansen, Søren Christian Jensen, Mikkel Vejle Larsen, Niels Henrik Pedersen and Mark Søndergaard Sørensen.

### **Autumn 2011**

Supervisor TE5 (4 students) "Future optimisation and configuration of Manna-Thise CHP", Emil Schmidt, Mikael Skrydstrup, Mads Smed Christensen and Christian Handl.

Supervisor TE3 (5 students) "Design af batteripakke til en Audi A8", Niels Henrik Pedersen, Anders Schou Simonsen, Mark Søndergaard Sørensen, Johan Kjøp Nørgaard and Søren Christian Jensen.

Supervisor TEPE3 (4 students) "Modelling and Optimization of Solid Oxide Fuel Cell System" Troels Bartholin Bertelsen, Thomas Helmer Pedersen, Jonas Lundsted Poulsen and René Haller Schultz.

Supervisor for P1 - Basis - (6 students) "Design og modellering af Shell Eco-racer", Lars S. Bruntse, Jens-Kristian Egsgaard Langkjær, Anders Nielsen, Kristian Porsborg-Smith and Mark B. R. Rugholt.

### **Spring 2012**

Supervisor EN2 (7 students) "Biodiesel", Chris Skovgaard Hansen, Kasper Molbo Ib, Kristian Didriksen Lund, Lau Hedensted, Lea Duedahl Pedersen, Nicholas Thorsgaard and Sophie Wiborg Jensen.

Supervisor EN4 (5 students) "Regulation of a Shower Power Liquid Cooling Circuit", Maya Andersen, Fredrik Bentsen, Anders Nørmølle, Ida Kobbensmed Nielsen and Simon Sønderby.

Supervisor TEPE8 (4 students) "Dynamic Model of CO2 Heat Pump and Thermal Storages: Implemented in a Conceptual CHP Plant with Flue Gas Heat Recovery" Eider Usar Recarte, Pablo Herrero Solsona, Anders Holten and Lars Houbak-Jensen.

Supervisor TEPE10 M.Sc. (2 students) "Technical and Economic Assessment of Methanol Production from Biogas" René Haller Schultz and Thomas Helmer Pedersen.

### **Autumn 2012**

Supervisor EN1 (6 students) "Hydrogen som Energibærer", Camilla N. Gade, Jakob B. Larsen, Kristine Askeland, Magnus F. Asmussen, Ryan Y. P. Hansen and Tom Erik Lindberg.

Supervisor Basis P1 (6 students) "Den Termoelektriske Generator", Kasper Nielsen, Nicolaj Winther Johansen, Mathias Poulsen, Peter Junker, Claudiu Ionita and Søren Ketelsen.

Supervisor EN3 (5 students) "Luftsol-fanger som forvarmer til varmpumpe: Karakteristik og modellering", Anders Nielsen, Kristian Porsborg-Smith, Jens-Kristian Egsgaard Langkjær, Martin Folmer Andersen and Lars Stenstrup Bruntse.

### **Spring 2013**

Supervisor TEPE8 (4 students) "Modelling and Optimization of a Small Scale District Heating System - Development of operation strategy using genetic optimisation algorithm" Jakob Hærvig, Michael H. Knudsen, Mikael S. Kristensen and Emil Ø. Schmidt.

Supervisor TEPE8 (3 students) "Dynamic modelling of local village heating" Katrine Arnoldsen Juhl, Matthieu Marissal and Morten Lind Andraesen.

Supervisor TEPE10 (1 student) M.Sc. "Absorption Heat Pump for Air Conditioning Driven by Fuel Cell Waster Heat" Irene Albacete Cachorro.

Supervisor HYTEC8 (3 students) "Development of fuel cell based hybrid generator for carnival vehicle" Jefferson Sebban, Apoline Pepin and Seyma Hacibektasoglu.

Supervisor - Energi Basis P2 - (7 students) "Vertical Wind Turbines as a Residential Power Source", Frederik Jørgensen, Jakob Borgen Larsen, Laurids Andersen, Morten Bonderup Østergaard, Nicolaj Kærgaard Eriksen, Tobies Grundsøe Naur Hansen and Torben E. L. Jørgensen.

Supervisor for P2 Basis (6 students) "Udvikling af Miljøvenlig Energiforsyning til Karnevalsvoغن", Ryan Y. P. Hansen,

Simon Bjerggaard Jørgensen, Nicklas Koldkjær Jensen, Michael Thorbøll Kristensen, Stig Seiferheld and Nicolaj Winther Johansen.

Supervisor for TEPE10 (2 students) "Udvikling af en absorptionskøler der udnytter restvarmen fra et indirekte methanol brændselscellesystem", Lars Houbak-Jensen and Anders Holten.

### **Autumn 2013**

Supervisor EN1 - Basis - (5 students) "Modellering af Mikrokraftværk i Husstand: Brint som energibærer", Mathias Vestergaard Steenstrup, Lars Holm, Jacob Andersen, Thomas Egsgaard Pedersen and Niklas Depcik.

Supervisor EN1 - Basis - (6 students) "Hydrogen som energibærer i biler: Produktion, lager og brændselsceller", Jacob Bitsch Nørgaard, Peter Hove Torp, Michael Noe Christiansen, Troels Beck Landbo, Mads Kjeldal Graungaard and Charlie Sørensen.

Supervisor EN3 (6 students) "Modellering og indpasning af solfangeranlæg i enkeltfamilieshus: Optimering af solfangers vinkel", Søren Søndergaard Batz, Lea Bandholtz Jørgensen, Lone Brit Nielsen, Kristian Kristensen, Michael Skyum and Jakob Borgen Larsen.

Supervisor TE5 (4 students) "Household Heating Production: Solar Thermal & Heat Pump System", Sophie Wiborg Jensen, Nikolaj Kortbek Andersen, Lea Duedahl Pedersen and Thibaut Oliver.

Supervisor TE5 (4 students) "Theoretical modeling of a Combined Heat Pump and Solar Collector System", Lau Hedensted, Line Groth Justesen, Alejandro Moreno Martin and Nicklas Overgaard Andersen.

Co-supervisor TAN1 (6 students) "Fortalere for brintbiler", Aden Rovcanin, Christoffer Eskildsen, Jakob Holm Jensen, Kim Sung Dahl Pedersen, Mark Benjaminsen Baruch and Rune Bo Jakobsen.

Co-supervisor TAN1 (6 students) "Komfort i lavenergihuse", Rene Viese Rosengren, Sira Liv Brohus Christiansen, Jonas Rabølle Knudsen, Jonas Agergaard Christensen, Jesper Christensen and Andreas Taagaard.

### **Spring 2014**

Supervisor HYTEC8 (3 students) "Comparative Modeling of High and Low-Temperature Electrolysis - A System Approach" Diego Fraguas Tejero, Steffen Frensch and Gisli Lárusson.

Supervisor TEPE8 (1 student) "Modeling Water Balance in a Proton Exchange Membrane Fuel Cell" Sudeshna Mandal.

### **Autumn 2014**

Supervisor TE5 (4 students) "Modellering og simulering af bæredygtig samt vedvarende energiforsyning til Livø", Stephanie Sigvert Sørensen, Camilla Nødbak Gade, Nick Høy Hansen, Janus Maack.

Supervisor TE5 (4 students) "Stirlinganlæg: Alternativ til energiforsyningsløsning til Livø", Nicolai Tank, Kristine Askeland, Christian Bjørn and Kristian Porsborg-Smith.

Supervisor TEPE9 (1 student) "Local Village Heating: Design and Optimization of the District Heating Network in Livø" Gisli Lárusson.

Supervisor TAN9 - Techno-Anthropology (Field-study) (1 student) "Internship at Insero Energy in Horsens" Trine Skriver Breum.

### **Spring 2015**

Supervisor TEPE8 (4 students) "Modelling and Heat Integration of a Combined Solid Oxide Steam Electrolysis and Biomass Gasification Plant for Methanol Synthesis" Lau Hedensted, Nicklas Overgaard Andersen, Nikolaj Kortbek Andersen and Rodica Elisabeta Stroe.

Supervisor (1 student) "Local Village Heating: Design and Optimisation of the District Heating Network in Livø "ammendment", Gisli Lárusson.

### **Autumn 2015**

Supervisor TE5 (3 students) "CSP and Brønderslev District Heating" Rashed Fallah, Simon Bjerggaard Jørgensen and Troels Bech Landbo.

Supervisor TE5 (3 students) "Modelling of Combined Heat and Power Plant with Concentrated Solar Power" Morten Krantz, Nicolai Hede Kirkedal and Asger Mathias Høj Winther.

Supervisor TEPE3 - Internship - (1 studerende) Case based internship report written at Johnson Controls, Sophie Wiborg Jensen.

### **Spring 2016**

Supervisor TEPE4 (M.Sc., 1 student) "Heat Transfer Inside a Reciprocating Compressor" Sophie Wiborg Jensen.

Supervisor TEPE2 (M.Sc. 3 students) "Dynamic Modeling of the Air Side of a PEM Fuel Cell System" Kristian Kristensen, Lasse Brams Vinther and Søren Søndergaard Batz.

Supervisor TEPE2 (M.Sc. 3 students) "Dynamic Modeling of Humidifiers for PEM Fuel Cell Systems" Josip Gomboc, Dario Taini and Andrea Nyeman-Thode.

### **Autumn 2016**

Supervisor TE5 (B.Sc. 6 students) "Optimization of Solar Heating Solution for a Group of Houses". Henrik Møller Madsen, Kasper Breede Birk, Kasper Ginnerup Nielsen, Martin Rubæk, Martin Slots Pedersen og Rasmus Simonsen Dueholm.

Supervisor TE5 (B.Sc. 6 students) "Optimization of Solar Heating Solution for a Group of Houses". Erica Arberg, Esben Ravn, Gudjon Thor Olafsson, Kasper Vestdam, Line Dyhr Damsgaard Blæsbjerg og Martin Rønno Andersen.

Supervisor TAN7 - Techno Anthropology - (M.Sc. 1 student) "Implementing CSP in Residential Houses". Jonas Agergaard Christensen.

Supervisor TEPE3 (M.Sc. 1 student) "Transient mapping af dampreformer". Internship at Serenergy A/S in Aalborg. Lasse Brams Vinther.  
Supervisor TEPE3 (M.Sc. 1 student) "Optimisation of a hydrogen refuelling station - Tank Size determination". Internship at NREL Hydrogen Fueling in Herning. Dario Taini.  
Co-supervisor TEPE3 (M.Sc. 1 student) "Pooling Heat Pumps in the Smart Grid". Internship at Fraunhofer Institute for Solar Energy Systems (ISE), Freiburg, Tyskland. Marc-André Triebel.  
Supervisor TEPE2 (re-exam) (M.Sc. 2 students) "Dynamic Study and Modelling of a Membrane Humidifier for PEM Fuel Cell Systems". Dario Taini og Josip Gomboc.

### **Spring 2017**

Supervisor TAN7 (re-exam) (M.Sc. 1 student) "Networks of energy - The Implementation of a Niche Technology". Jonas Agergaard Christensen.  
Supervisor TEPE2 (M.Sc. 5 students) "Optimization of asphalt plants". Michel Noaparast, Allan Bjerg, Asger Mathias Høj Winther, Kristian Fodgaard Christoffersen and Simon Schraml.  
Supervisor TEPE4 (M.Sc. 1 student) "Modeling and optimization of methanol reforming system". Lasse Brams Vinther.  
Supervisor TEPE4 (M.Sc. 1 student) "Cost-efficient operation of heat pump pools". Marc-André Triebel.  
Supervisor TEPE4 (M.Sc. 2 students) "Integration of heat storage at Nordjyllandsværket". Oscar Miralles Perez og Federico Lo Brutto.

### **Autumn 2017**

Supervisor TAN7 (M.Sc. 3 students) "Mobilizing the HTPeM-fuel cell". Jens Nygaard Rasmussen, Michael Riis Allesøe and Theis Hæstrup. Supervisor TE6-diploma (Diploma Engineer, 1 students) "Fjernvarmemodeller og pumpedrift i Klarup". Thomas Nielsen.  
Supervisor TEPE3 (M.Sc. internship, 1 student) "Non-Newtonian Pressure Drop in Helicoid Heat Exchangers for Biogas Plant". Troels Bech Landbo.  
Supervisor EN3 (B.Sc., 6 students) "Modellering af 3-strengt vandbåren gulvvarmesystem. Benjamin Holt Kjærsgaard, Christian Kjær Rosenvinge, Daniel Revsbech Pedersen, Emil Breum Eriksen, Frederik Brath Severinsen and Kristian Engelhardt Kristensen.  
Supervisor EN3 (B.Sc., 6 students) "Fordampningskøling i ventilationssystemer". Anders Dorscheus Svoldgaard, Anna Marie Anneberg Pedersen, Annette Goth Kamstrup, Hans Toftum Winther Hansen, Jacob Østergaard Pedersen and Terkil Bak-Jensen.  
Consultant Supervisor TAN3 (B.Sc., 5 studerende) "Solcelleanlæg". Rasmus Frisgaard, René Andersen, Thomas Lindsted Jensen, Jonas Lassen Eliassen and Jesper Føste Møller.  
Supervisor TE5 (B.Sc., 4 students) "Performance Analysis of Indirect Adiabatic Cooling System - In Danish Climate Conditions". Sebastian Bækkel Højte, Lasse Uhd Christensen, Patrick Hjort Simony and Rasmus Bedsted Jensen.  
Supervisor TE5 (B.Sc., 4 students) "Design of evaporative cooling system for public buildings". Anders Knop Madsen, Lidia Rzeplinska, Peter Blom and Signe Thomsen.

### **Spring 2018**

Supervisor TAN6 (B.Sc., 1 student). Kristoffer Holger Weithøft Lindstrøm.  
Supervisor TAN8 (M.Sc., 4 student) "Understanding the Smart Meter". Christian Bager Jakobsen, Jens Nygaard Rasmussen, Michael Riis Allesøe and Theis Hæstrup.  
Supervisor TAN8 (M.Sc., 4 students) "Innovation for Randers Climate Ribbon". Pernille Christina Paulsen, Jonas Falzarano Jessen, Claus Lolk and Serban Costin.  
Supervisor TAN10 (M.Sc. thesis, 3 students) "Motivating house buyers to energy renovate: A Practice Theory Approach". Emil Søren Jakobsen, Jonas Agergaard Christensen and Line Lisberg Christensen.  
Supervisor TEPE4 (M.Sc. thesis, 1 student) "Modelling of a local heat production unit for dense urban areas in Denmark". Asger Mathias Høj Winther.  
Supervisor TEPE2 (M.Sc., 3 students) "Dynamic Modelling of an Adiabatic Cooling System for Educational Facilities". Alexander Strømfeldt Lind, Henrik Møller Madsen and Martin Slots Pedersen.

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### **Ph.D. Supervision**

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Supervisor for Anders Korsgaard (2003-2006) - "Design and Control of Household CHP Fuel Cell System".  
Co-supervisor for Saqib Sohail Toor (2007-2010) - "Modeling and Optimization of CatLiq Liquid Biofuel Process".  
Co-supervisor for Frida Gideon Husmark (2007-2008) - "Modeling of SOEC-system". Project never finished.  
Supervisor for Vincenzo Liso (2009-2012) "SOFC micro-CHP system".  
Supervisor for Alexandros Arsalis (2008-2011) "Development of Next Generation micro-CHP System".  
Supervisor for Christian Milan (2011-2014) "Choosing the Right Technologies - A Model for Cost Optimized Design of a Renewable Supply System for Residential Zero Energy Buildings".  
Supervisor for Industrial Ph.D. Carolina Carmo (current, since 2013) "Modelling and development of innovative Dual Mode Smart Grid Heat pump with HP2Grid Functionality".



Supervisor for Ph.D. Shahid Ali (present from 2016) "SYNFUEL - Sustainable synthetic fuels from biomass gasification and electrolysis".

Co-supervisor for Ph.D. Maksym Kotenko (current, since 2016) "Minimising losses in low temperature district heating".

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### **Post doc. Supervision**

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Technical supervisor on Pedagogical Training for Post Doc. Søren Juhl Andreasen (2010-2012).

Technical supervisor on Pedagogical Training for Associate Professor Carsten Bojesen (2011-2013).

Technical supervisor on Pedagogical Training for Post Doc. Vincenzo Liso (2013-2014).

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### **Examination**

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Have participated in different evaluations for B.Sc. and M.Sc. students (mostly evaluated with the 12- or 13-grading scales):

Oral examinations

Written examinations

Ongoing evaluations

Examination of Semester Projects

Examination og Mini-projects in courses

Examination with mandatory assignments

Have at Ph.D.-level been Opponent at 7 public Ph.D.-defenses (4 at DTU/RISØ and 3 at AAU-ET - all internal defenses as Chairman of the Assessment Committee). Have besides this been moderator at 7 Ph.D. defenses at AAU-ET. Have further been opponent for 1 Ph.D. student related to the 10½ month Ph.D. Status Seminar.

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### **Other Teaching Assignments**

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Lifelong Education at AAU 2001 - "Energy Systems of the Future".

Lifelong Education at AAU 2004 - "Status and perspectives of fuel cell systems".

Lifelong Education at AAU 2005 - "Modelling and optimisation of fuel cell systems".

Course in "Fuel Cell Technology" for students from Århus Technical College.

Lectures and experiments for 5th-6th grade primary school students in "Elevuniversitetet, SKUB" within hydrogen technology every Spring since 2009 (typically 2 lectures a year - some years 3).

Teaching related to the HyFC Ph.D. Summer School in Industriens Hus, København, 2008.

Teaching at the Summer School in "Future Energy Systems" for international students at AAU - "Energy In Transportation", 2012.

Teaching at the Summer School in "Future Energy Systems" for international students at AAU - "Energy In Transportation", 2012.

Have several times participated in "Brobygning" and "Studiepraktik" arrangements involving teaching, as coordinator and experiments.

Have taught high school students multiple times related to various assignments and projects within the field of energy.

Have taught and given lab-tours for several high school classes and teachers from high schools almost every year since 2000.

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### **External Presentations**

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"Modelling of proton exchange membrane fuel cell systems" at the SIMS-conference in Porsgrunn, Norway, 2001.

"Status og udfordringer for brændselscelleteknologi" for IDA Energiteknisk Gruppe, Northern Jutland 2002.

"Dynamic modeling of reforming reactors" presentation at ECN, Holland, 2002.

"Optimizing the heat exchanger network of a fuel cell reforming system", ECOS 2003 conference at the University of Copenhagen, 2003.

"A Transient 2D-Model of a Natural Gas Reformer", poster presented at Hydrogen and Fuel Cells Conference i Vancouver, Canada.

"Modelling of fuel cell systems", poster presented at Summer School: Towards a Hydrogen Society, Hørsholm, 2003.

"State-Of-The-Art for brintteknologi" presented at Foreningen for Energi og Miljø (FFE&M) "state-of-the-art for brændselscelleteknologi", Pejsegården i Brædstrup, 2004.

"Optimizing the heat exchanger network of a steam reforming system", presented at the SIMS 2004 conference in Copenhagen.

"Brændselscelleaktiviteter og aktiviteter på Institut for Energiteknik", UNF, Aalborg 2005.

"Brændselscelleaktiviteter på Institut for Energiteknik", for Scandinavian representatives for the Nordic Council, AAU, 2005.

"Being a Ph.D. student - Tips and Tricks" presentation held for new Ph.D. students in the Doctoral School at AAU, 2005.

"Fuel Cell Systems" the annual meeting at Danish Hydrogen Association (DHA) in Herning, 2006.

"Modelling and Optimization of PEM Fuel Cell Systems", presentation for IDA in Ingeniørhuset in Copenhagen, 2006.

"Brændselscellesystemer i Energiforsyningen", presentation for the energy supply companies in Aalborg, 2006.

"Design af brændselscellestakke og systemer", Dansk Industri, Industriens hus, 2006.

"Brint- og brændselscellesystemer" - CEES, 2006.

"Brintsamfundet" - presentation for high school teachers from Hasseris Gymnasium, 2007.

"Modelling of proton exchange membrane fuel cell systems", multiple presentations given at HyFC Ph.D. Summer School, Industriens hus, Copenhagen, 2008.

"Diplomingeniør i Bæredygtig Energiteknik", Presentation given May 20th at AAU at a meeting between AAU and Studievalg Nordjylland, 2009.

"Brint - fremtidens energibærer?" - Presentation for two high school classes at Aalborg Katedralskole, 2009.

"HTPEM fuel cell systems", presentation at the HOT MEA project seminar at DTU in Lyngby, 2010.

"EES modelling of cassette and flow distribution in a heat exchanger reactor", Workshop with Dantherm Power A/S, January 2010.

"IET-AAU Fuel Cell Research Programme", Energy Seminar at AAU-ET, December 17th 2010.

"Fuel Processing Fundamentals" Ph.D. course at the HyFC research school, AAU, at First Hotel, November 2012.

"Modelling of PEM Systems" Ph.D. course at the HyFC research school, AAU, at First Hotel, November 2012.

"Introduction to Balance of Plant Design" Presentation at the Ph.D. course at the HyFC research school, AAU, First Hotel, Aalborg, November 2012.

"Fundamentals of LTPEM and HTPEM" Ph.D. course at the HyFC research school, AAU, First Hotel, Aalborg, November 2012.

"Termisk Energi og Procesteknik", Kandidatdagen, AAU, 2013.

"Alternative energisystemer, i et økonomisk og samfundsmæssigt perspektiv", Ribe Katedralskole, 2014.

"Brændselsceller- og brintteknologi", Presentation for pupils from EUC-Syd in Sønderborg, 2014.

"Fremtidens energisystemer, i et økonomisk og samfundsmæssigt perspektiv", Ribe Katedralskole, 2015.

"Brændselsceller", presentation and lab-tour for EUC-Syd HTX-students from Sønderborg, 2015.

"Fremtidens energisystemer, i et økonomisk og samfundsmæssigt perspektiv", Ribe Katedralskole, 2016.

"Brændselsceller", Presentation held at a regional meeting in the Physics Teacher Association at Aalborg Katedralskole, March 4th 2016.

"Presentation of the thermal educations", Presentation held related to the "Study Internship" for high school students at Department of Energy Technology, October 25th 2016.

"Brint- og brændselsceller på AAU", Presentation and discussion at an IDA Energy Technical Group in Nordjylland Arrangement at Hydrogen Valley in Hobro, 29th of November 2016.

"Fuel cells and hydrogen technology", Presentation and discussion at Alision in Sønderborg April 6th arranged by Electro-technical group, IDA South, 2017.

## **2. Study administration: A list of any study administration tasks, e.g. study board membership, head of studies or semester or course coordinator, accreditation, etc.**

Head of the Section for Thermal Energy Systems with responsibility of distribution of teaching assignments and administration of the Section Budget (to be used for various costs related to teaching assignments) since 2003. Since May 2015 with responsibility for the performance and development of the employees in the section.

Co-founder in the development of the international specialization in "Fuel Cells and Hydrogen Technology" (HYTEC) - originally started in the the framework of the M-study board.

Technical Coordinator for the HYTEC-specialization and responsible for the evaluation of international applicants.

Member of the N-study board (Energy) since the study was initiated in 2008.

Have been Semester Coordinator on almost any semester in the energy education through different implementations of the education. Have also been coordinator on the previous energy specializations (FACE and HYTEC) at the M-study board. Have in the recent years been coordinator at the 5th and the 8th semester at the Thermal Specialization at the energy study.

Have participated actively in the shaping of the energy education and the start-up of the N-study board. Have been involved in writing study regulations and the acknowledgement process/accreditation of these for as well B.Sc., M.Sc. and the Profession Bachelor education. As well writing the original curricula as the revised versions.

Have participated in the self-evaluation process regarding our educations in the field of energy and in meetings with our recruitment panel.

Have in 2014-2016 participated in the committee regarding the revision of the education in techno-anthropology under School of Engineering and Science (SES).

Have since September 2013 taken part in the "Solution Hub" group (pt. on standby) with the aim to create multidisciplinary project collaborations with companies at Aalborg University.

### **3. University pedagogy qualifications: A list of any completed courses in university pedagogy, PBL courses, workshops, academic development projects, collegial guidance and supervision, etc.**

Have completed the Pedagogical Training for Assistant Professors at Aalborg University (managed by Lone Krogh). My technical supervisor was Professor Lasse Rosendahl at AAU ET and my pedagogical supervisor was Søren Justesen. Have taken part in the following courses during the training:

- \* 2 day introductory course to pedagogical training and didactic (27th-28th October 2005)
- \* Course on the implementation and use of teaching portfolios (December 14th 2005)
- \* Course on technology supported teaching (19th May 2006).
- \* Workshop regarding the use of Power Point "hands-on" (30th May 2006).
- \* Completion of the two final modules (ultimo 2006)

Received teaching in the framework of a Ph.D. course in the "Nordic Energy Research Council" in presentation techniques, Göteborg, 2001.

Have been technical supervisor for 3 colleagues related to their pedagogical training course.

Completed a one-day course in supervision of Ph.D. students (AAU-ET), (20th October 2015) - focused upon (teacher: Mirjam Godskesen):

- \* Supervision Style
- \* Active Listening
- \* Mutual expectations and collaboration agreement
- \* Cross-cultural dimensions in supervision
- \* Exchange of experiences with other supervisors
- \* The process/product distinction in supervision

### **4. Other qualifications: Conference attendance, editorials, presentations, etc. relating to education, 'University Teaching Day', etc.**

Have multiple times taken part in the "University Teaching Day" at Aalborg University.

Have been in the organizing committee related to more international conferences.

Have been part of the scientific committee for several international conferences.

Have at several occasions been chairman or co-chairman at sessions related to international conferences.

Have carried out work as a reviewer for several international journals.

Have been involved in the evaluation of research project applications.

### **5. Teaching activity development and teaching materials: A list of any contributions to the development of new modules, teaching materials, study programmes, e-learning,**

## **collaboration with external business partners, etc.**

Have written multiple course notes and developed assignments/examples used in teaching. Typically in special topic courses regarding modelling and optimisation of thermal energy systems where only limited literature is available.

Have participated in and organized guest lectures at B.Sc. and M.Sc. level in collaboration with guest lecturers from companies and other universities in Scandinavia and Europe.

Have several years of experience with the use of video-aided-teaching (typically teaching of a class in Aalborg and Esbjerg simultaneously via video-link) and electronic white-boards. Have recently been involved in a meeting with ITS at AAU to discuss the possibilities for improvement of this kind of lectures.

Have in the Spring 2016 given external lectures in a course in modelling and optimisation of thermal systems at the University in Agder, Norway and have been involved in the evaluation of the course via the Erasmus program.

## **6. Teaching awards you may have received or been nominated for.**

### **Awards:**

Lecturer of the year at Study Board of Energy (N-Sn), 2008/2009 (Teaching Thermodynamics at 3rd semester).

Lecturer of the year at Study Board of Energy (N-Sn), 2014/2015 (Teaching Thermal Systems and Machines 1 and Supervising at 5th semester)

### **Nominations:**

Nominated as "lecturer of the year" at N-Sn Autumn 2008 (Thermodynamics 3rd sem.) Nominated as "lecturer of the year" at N-Sn Autumn 2011 (Fundamental Thermal Topics 3rd sem.)

Nominated as "lecturer of the year" at N-Sn Autumn 2011 (Modelling of thermal energy systems, 5th sem.)

Nominated as "lecturer of the year" at N-Sn Spring 2012 (Design and modeling of thermal systems and fuel processing technology, 8th sem.)

Nominated as "lecturer of the year" at N-Sn Autumn 2012 (Thermodynamic Systems and Machines 1, 5th sem.)

Nominated as "lecturer of the year" at N-Sn Spring 2013 (Design and modelling of thermal systems and fuel processing technology, 8th sem.)

Nominated as "lecturer of the year" at N-Sn Autumn 2013 (Combustion Technology and Chemical Reactors, 7th sem.)

Nominated as "lecturer of the year" at N-Sn Autumn 2014 (Thermodynamical systems and machines 1 and supervision at 5th sem.)

Nominated as "lecturer of the year" at N-Sn Autumn 2015 (Thermodynamical systems and machines 1, 5th sem.)

## **7. Personal reflections and initiatives: Here you may state any personal deliberations as regards teaching and supervision, any wishes and plans for further pedagogic development, plans for following up on feedback/evaluations from students, etc.**

Teaching should to the extent possible be focused on concrete engineering related problems and involve as well industrial engineering aspects and the state-of-the-art from the academic research.

Students should actively take part in lectures and during the solution of assignments.

## **8. Any other information or comments.**

Type your answer here...