

2011-09-29 **52nd Scandinavian Simulation and Modeling Society conference**  
**September 29-30, 2011**

09:15-12:00 Mälardalen University, room Alfa

09.15-09.25 Rector Karin Röding: welcome

Chairman Key-note speaker: Erik Dahlquist

09.25-10.15 **Smart adaptive systems in nonlinear multivariable control and diagnosis**  
Key-note by prof Esko Juuso, Oulu University, Finland

10.15-11:05 **Energy at Iceland from a modeling perspective**  
Key-note by Jonas Ketilsson, R&D manager, Iceland energy agency, Iceland  
*Chairman session on Hydro power: Mika Liukkonen, East Finland University*

11:05-11:30 **The effect of compressibility of water and elasticity of penstock walls on the behavior of high head hydro power stations**  
Behzad Rahimi Sharefi, Wenjing Zhou, Bjørn Glemmestad, Bernt Lie, Telemark University college, Porsgrunn, Norway

11:30-11:55 **Modelling and control of a high head hydropower plant**  
Wenjing Zhou, Behzad Rahimi Sharefi, Bernt Lie, Bjørn Glemmestad, Telemark University college, Porsgrunn, Norway

11:55-13:00 LUNCH (with SIMS board meeting) at Kåren

Mälardalen University, room Kappa

*Chairman session on Water treatment: Esko Juuso, Oulu University, Finland*

13:00-13:25 **Modeling of aluminum in water treatment process**  
Jani Tomperi and Esko Juuso, University of Oulu, Pelo Marja, Finnsugar, Finland

13:25 - 13:50 **Considering culture adaptations to high ammonia concentration in ADM1**  
Wenche Bergland\*, Deshai Botheju, Carlos Dinamarca, Rune Bakke, Telemark University college, Porsgrunn, Norway

13:50-14:15 **Dynamic modelling approach for detecting turbidity in drinking water**  
Petri Juntunen, Mikka Liukkonen, Markku Lehtola, Yrjö Hiltonen, University of Eastern Finland, Kuopio, Finland

14:15-14:40 **Simulation of digestate nitrification based on cow manure**  
Deshaij Botheju, Yanni Qin, Knut Vasdal, Rune Bakke, Telemark University college, Porsgrunn, Norway

14:40-15:05 **Trend analysis in dynamic modeling of water treatment**  
Esko Juuso, University of Oulu, Ilkka Laakso, StoraEnso Fine paper, Oulu, Finland

15:05-15:35 Coffee break

*Chairman session on Energy conversion: Rune Bakke, Telemark Univ College*

15:35-16:00 **Modeling and control of gas lifted oil field with five oil wells**  
Roshan Sharma and Bjørn Glemmestad, Telemark University College, Kjetil Fjalestad, Statoil, Porsgrunn, Norway

16:00-16:25 **Stability Analysis of AGC in the Norwegian Energy System**  
Ingvar Andreassen and Dietmar Winkler, Telemark University College, Porsgrunn, Norway

16:25- **Comparison of Control Limit Generation Approaches in Desulphurization Plant Monitoring**

16:50

Riku-Pekka Nikula and Esko Juuso, University of Oulu, Anton Laari, Helsinki Energy, Porkkalankatu, Finland

16:50-  
17:15

**Towards multi fuel SOFC plants**

Masoud Rokni, Lasse Clausen and Christian Bang-Møller, Technical University of Denmark, Lyngby, Denmark

17:30 -  
18:00

SIMS Annual general assembly

19:00 Dinner at Restaurant Djäkneberget ( in a park in central Västerås)

**2011-09-  
30**

08:30-  
16:00

Mälardalen University room Milos

Chairman key notes: Erik Dahlquist

08:30-  
09:20

**New trends in Automation**

Key-note by Erik Oja, Senior Vice President, head of Process Automation Division, ABB AB

09:20-  
10:10

**Process industry center in linköping: Use of modeling for automation and control**

Key-note Alf Isaksson, professor Linköping University and ABB Corporate Research

10:10-  
10:40

Coffee break

Mälardalen University room Kappa

*Chairman session on Diagnostics: Rebei bel Fdhila, ABB Corporate Research and MDU*

10:40-  
11:05

**On-line application of diagnostics and maintenance on demand using simulation models**

Elena Tomas Aparicio, Björn Widarsson, Erik Dahlquist, Mälardalen Univ, Sweden

11:05-  
11:30

**Modeling Software for Advanced Industrial Diagnostics**

Mika Liukkonen, Mikko Heikkinen, Yrjö Hiltunen, Univ Eastern Finland, Teri Hiltunen, FosterWheeler Kapanen, Andritz, Finland

11:30-  
11:55

**Water contents of wood and peat based fuels by analysing the domain NMR data**

Ekaterina Nikolskaya and Risto A. Kauppinen, Univ of Bristol UK, Leonid Grunin Mari State Technical University, Yoshkar-Ola, Russia, Mika Liukkonen and Yrjö Hiltunen, Eastern Finland University, Finland

11:55-  
12:55

Lunch

*Chairman session on Energy systems: Eva Thorin, MDU*

12:55-  
13:20

**Modeling, Simulation and Control for an Experimental Four Tanks System using ScicosLab**

Carlos Pfeiffer, Telemark University College, Porsgrunn, Norway

13:20-  
13:45

**Simulation of a Bubble Plume in a Water Vessel With and Without Internal Liquid Recirculation**

Rebei Bel Fdhila Mälardalen University and ABB Corporate Research, Sweden

13:45-  
14:10

**Dynamic modelling of a pulp mill with a BLG plant - effects in the chemical recovery cycle**

Christian Hoffstedt and Niklas Berglin, Innventia, Stockholm, Sweden

14:10-  
14:45

**Retention time and nutrient tracking inside a digester for biogas production**

Johan Lindmark and Eva Thorin, Mälardalen University, Rebei Bel Fdhila, ABB CRC, Västerås, Sweden

*Chairman session on applications and tools: Fredrik Wallin, MDU*

14:45-  
15:10

**Developing a computer program for the estimation of the incoming sun beam by defining a special coefficient factor for Denizli, Turkey**

G. Uckan, H. K. Ozturk, E. Cetin, Pamukkale University, Denizli, Turkey

15:10-  
15:35

**OMSketch — Graphical Sketching in the OpenModelica Interactive**

Mohsen Torabzadeh-Tari, Jhansi Reddy Remala, Martin Sjölund, Adrian Pop, Peter Fritzson  
Linköping University, Linköping, Sweden

15:35-  
16:00

**Etiology of Rey generator stator core failure and study of its rehabilitation integrity**

Kourosh Mousavi Takami, Pasad Parang Co., Tehran, Iran

16:00-  
16:10

Closing remarks - Esko Juuso, Erik Dahlquist