SIMS EUROSIM 2024 Accepted Drafts for Full Scientific Papers

Esko Juuso. Nonlinearity analysis of variables for modelling and control

Tilik Tena Wondim, Bloodless Dzwairo Rimuka, Dagnachew Aklog, Eshetu Janka and Gamunu Samarakoon. Systematic full-scale simulation and optimization of a textile wastewater treatment plant's activated sludge process using the GPS-X model

Eivind S. Haus, Malin Harr Overland, Kristian Thorsen, Damiano Rotondo and Tormod Drengstig. Identifiability and Kalman Filter Parameter Estimation Applied to Biomolecular Controller Motifs

Mostafa Abedini, Mohammad Rakibul Hasan Chowdhury, Saman Pershen, Joachim Rød Knarrum, Ishmael Nii Nyarko Solomon, Pramod Ghimire and Nabin Aryal. Alternative fuels for the maritime industry and its impact on flue gas composition

Tiina M. Komulainen, Malik Baqeri, Katrine Marsteng Jansen and Arvind Keprate. Comparison of ML and ASM models for effluent nutrient estimation in the Hias Process

Vafa Ahmadi, Aryan Bhusal, Gamunu L Samarakoon Arachchige and Nabin Aryal. Process simulation for biogas upgrading and biomethane recovery using biofilm-based reactors

Albert Likang Hu, Joanna Maria Badach and Arnab Chaudhuri. Green infrastructure for resilient urban design: the mapping and management of green roofs in Oslo

Uchechukwu Agha Isu, Nora C.I. Furuvik and Soheila Taghavi. CO2 Enhanced Oil Recovery in Reservoirs with Advanced Wells; Simulations and Sensitivity Analysis

Viraj U. Edirisinghe and Klaus-J. Jens. Conceptual Design Study: Direct Conversion of CO2 to Ethylene Carbonate with Water Removal for Improved Conversion

Henri Välikangas, Markku Ohenoja, Stéphane Brochot, Manuel González Fernández, Jari Ruuska and Mika Ruusunen. Evaluation of model uncertainty propagation in mineral process flowsheet designs

Ismail Hossain Rafi, Ali Moradi and Britt M. E. Moldestad. A Novel Approach to Simulating the Performance of Autonomous Inflow Control Devices

Neville D'Souza, Gaurav Mirlekar and Carlos Pfeiffer. Assessment of Data Driven Techniques for Flow Rate Estimation in sub sea oil production

Soudeh Shamsiri, Neda Razi and Lars Erik Øi. Simulation model for an amine-based CO2 capture rig

Lars Erik Øi, Masoumeh Dehghanizadeh and Nils Eldrup. Simulation and Cost Estimation of CO2 Capture with alternatives for doubled capacity

Ali Reza Pirouzfar, Gaurav Mirlekar, Sambeet Mishra and Koteswara Rao Putta. Implementation of model predictive control (MPC) on integrated Photovoltaic (PV) and Electrolysers system for sustainability.

Omid Lotfizadeh, Zahir Barahmand and Hadi Amlashi. Life Cycle Assessment of Floating Offshore Wind Farms: The Case of Hywind Tampen in Norway

Ladan Samaei, Lars-Andre Tokheim and Christoffer Moen. Design of electrified fluidized bed calciner for direct capture of CO2 from cement raw meal

Charith Rajapaksha, Ismail Hossain Rafi, Nirajan Raut, Ali Moradi and Britt M. E. Moldestad. Integration of Dynamic Multiphase Flow and Reservoir Models for Improved Oil Recovery Simulation

Simon Karlsson, Stavros Vouros, Kristian Sandström and Konstantinos Kyprianidis. Computationally Efficient Optimization of Long Term Energy Storage Using Machine Learning

Markku Ohenoja, Pekka Uusitalo, Fernando Russo Abegão, Abdullahi Adamu, Kamelia Boodhoo and Mika Ruusunen. Dynamic Reactor Modelling and Operability Analysis of Xylose Dehydration to Furfural Using an Extractive-reaction Process in an Agitated Cell Reactor

Esin Iplik, Tomas Ekman, Kristofer Bölke and Otto Kankaanpää. Using an advanced simulation tool for successful conversion of reheating furnace to full oxyfuel operation

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Charlotte Stubenvoll, Tauno Tepsa, Tommi Kokko, Petri Hannula and Heli Väätäjä. CARLA-based digital twin via ROS to create a hybrid testing environment for mobile robots

Kristian Tiiro, Markku Ohenoja, Outi Ruusunen, Riitta Keiski and Mika Ruusunen. Simulation of Biogenic Carbon Capture and Utilization Process Chain

Ida K.B. Stenberg, Eshetu Janka, Gamunu L.S. Arachchige and Robel S. Bekele. Modelling and simulation of full-scale Sequential Batch Reactor (SBR) biological process operation using GPS-X

Prakash Bhattarai, Soheila Taghavi and Britt M.E. Moldestad. Performance Analysis of Advanced Wells in Reservoirs Using CO2 Enhanced Oil Recovery

Mohammad Rakibul Hasan Chowdhury and Soheila Taghavi. CO2 Storage and Evaluation of Important Parameters Affecting the CO2 Plume Distribution: Simulation and Sensitivity Analysis

Thea Indrebø, Gudny Øyre Flatabø, Wenche Hennie Bergland and Gamunu L. Samarakoon Arachchige. Anaerobic digestion of biosolid pyrolysis liquid and hydrolyzed sludge - simulation with extended ADM1 model

Rakhi and Fabian Mauss. Equilibrium analysis for methanation focusing on CO2 derived substitute natural gas

Chidapha Deeraksa and Britt Margrethe Emilie Moldestad. Simulation of green hydrogen production from biomass

Oskar Lind Jonsson and Lars Eriksson. The Application and Advantages of a Generic Component-Based SI/CI Engine Model with VVA Compatibility

Jordy Jorritsma, Stavros Vouros, Konstantinos Kyprianidis and Klaus Hubacek. Wind power and battery storage enhance Sweden's grid flexibility and resilience

Vafa Ahmadi and Nabin Aryal. Kinetic modelling and simulation of bioanode and biocathode in a bioelectrochemical cell for carbon dioxide reduction

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Amirhossein Ghazi and Lars-Andre Tokheim. Modelling and simulation of CO2 capture through mineralization using CaO-containing by-products

Simon Mählkvist, Thomas Helander and Konstantinos Kyprianidis. Investigation of industrial batch process downstream product properties: A sensitivity analysis of products types in a product series and varying model complexity

Subham Kandel, Niroj Koirala, Nirajan Raut, Rajan Jaiswal, Sunil Prasad Lohani and Britt Margrethe Emilie Moldestad. Experimental and computational studies to investigate flow dynamics of Geldart A and Gledart B particles in a Circulating Fluidized Bed (CFB).

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Mohammad Reza Babaei, Amare Desalegn Fentaye and Konstantinos Kyprianidis. Enhanced Anomaly Detection in Aero-Engines using Convolutional Transformers

Jari Ruuska, Aki Sorsa, Isa Banagar, Perttu Niskanen, Amin Mahmoudzadeh Andwari, Mika Ruusunen, Emil Kurvinen and Juho Könnö. Simulation of real-time optimization concept for a hybrid heavy duty vehicle

Mohammed Taha, Konstantinos Kyprianidis and Stavros Vouros. Evaluation of environmental and economic impact of wind turbine blade manufacture at life-cycle level

Esko Juuso and Luis J. Yebra. Dynamic simulation models in the planning of experiments for control development

Miika Malin and Jaakko Suutala. Data Center Resource Usage Forecasting with Convolutional Recurrent Neural Networks

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Mikko Leinonen, Jaakko Palosaari and Jari Juuti. Modeling of a tire mounted energy harvester using an inertial and analytical tire deformation model

Tuomas Alatarvas, Henri Tervo, Antti Kaijalainen and Qifeng Shu. Utilizing computational thermodynamics in characterization and classification of non-metallic inclusions in Ti-deoxidized steels

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Majid Nejadseifi, Tero Tynjälä, Payman Jalali and Shervin Karimkashi. Performance of direct air capture process in honeycomb channel configuration: A CFD study

Majid Nejadseifi, Tero Tynjälä, Payman Jalali and Shervin Karimkashi. Computational analysis of conjugate heat transfer in a 2D rectangular channel with mounted obstacles using lattice Boltzmann method

Roohallah Surki Aliabad, Saeed Sadeghpour, Pentti Karjalainen, Jukka Kömi and Vahid Javaheri. On the Growth Kinetics of Lamellar and Blocky Austenite during Intercritical Annealing of Hot-Rolled Medium Manganese Steel: Thermodynamic and Diffusion-Controlled Transformation Simulations

Moksadur Rahman and Stefan Thorburn. Renewable Energy Resource Risk Quantification and Mitigation Assessment for Mining Micro-Grid

Aarne Pohjonen, Touko Puro and Assa Aravindh Sasikala Devi. Non-interacting lattice random walks for calculating diffusion controlled growth in solid state for dilute concentrations

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Henna Tiensuu, Virpi Leinonen, Jani Isokääntä and Jaakko Suutala. Machine Learning -based Optimization of Biomass Drying Process: Application of Utilizing Data Center Excess Heat

Sarthak Acharya, Aparajita Tripathy, Juho Alatalo, Pekka Seppänen, Aki Lamponen, Jukka Säkkinen and Tero Päivärinta. Interoperability Challenges and Opportunities in Vehicle-in-the-loop Testings: Insights from NUVE Lab's Hybrid Setup

Sadegh Mehranfar, Amin Mahmoudzadeh Andwari, Juho Könnö, Antonio Garcia Martinez and Carlos Mico Reche. Numerical simulation of thermal runaway kinetic mechanisms and battery thermal model for safety assessment of different lithium-ion battery chemistries

Aarne Pohjonen, Oskari Seppälä, Olli Väinölä and Jari Larkiola. Cellular automata model for austenite formation and grain growth during heating and holding above austenization temperature

Mahmoud Elaraby, Mohammed Ali, Mamdouh Eissa, Vahid Javaheri, Jukka Komi and Pentti Karjalainen. Computational Designing Approach for Medium Manganese Steels with Potential Better Hydrogen Embrittlement Resistance

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Brad Carlberg. The Autonomous Mill: Utilizing Digital Twins to Optimize the Pulp & Paper Mill of the Future