CAB+DYCOPS WEDNESDAY June 6th, 2007

Morning

08:30	Plenary: **Control Opportunities in Systems Biology** *P. Wellstead, Hamilton Institute, Ireland* chair: *B. Foss,* cochair: *M. Perrier*		
09:30	**Coffee Break**		
	Studio I	**Studio III**	
09:50	Keynote: **Coordinating multiple optimization-based controllers: New opportunities and challenges** ***J. B. Rawlings***, *B.T. Stewart, University of Wisconsin, USA* chair: *B. Foss*	Keynote: **Microbial ecology and bioprocess control : opportunities and challenges** *A. Rapaport, J. Harmand, C. Lobry, F. Mazenc, B. Haegeman and* ***D. Dochain*** chair: *M. Perrier*	
	Studio I	**Studio II**	**Studio III**
	Optimization and MPC chair: *C. de Prada* cochair: *J. Mandler*	**Reaction Networks** chair: *G. Bastin* cochair: *E. Franco-Lara*	**Wastewater Treatment 2** chair: *I. Smets* cochair: *A. Vargas*
10:20	Improved Target Calculation for Model Predictive Control *M. Hovd*	Analysis of metabolic networks of skeletal muscle cell energy metabolism, *B. Agar, A. Cinar, E. Opara and G. Reznik*	Modelling and identification of aeration systems for model predicitve control of dissolved oxygen-Swarzewo wastewater treatment plant case study, *W.Krawczyk, R. Piotrowski, M.A. Brdys and W. Chotkowski*
10:40	Real-time Optimization of Continuous Processes via Constraints Adaptation *A. Marchetti, B. Chachuat and D. Bonvin*	Metabolic flux analysis of *Aspergillus Niger* AB1.13 cultivations, *G. Melzer, A. Dalpiaz, Y. Göcke, A. Grote, M. Kucklick, E. Franco-Lara, P. Dersch, B. Nörtemann and D.C. Hempel*	Implementation of toxic inhibition in wastewater treatment plant Benchmark simulation models, *M.N. Pons*
11:00	Post-optimality analysis of steady-state linear target calcultation in a model predictive control *A.A. Al-Shammari and F.J. Forbes*	A general kinetic model structure Simulation and experimental validation, *A. Grosfils, A. Vande Wouwer and P. Bogaerts*	Automation of the acclimation phase in a sequencing batch reactor degrading inhibitory compounds, *A. Vargas, F. Velarde and G. Buitrón*
11:20	Bayesian approach for constraint analysis of MPC and industrial application *N. Agarwal, B. Huang and E.C. Tamayo*		Control of nutrient removing activated sludge system, *A. Stare, D. Vrečko, N. Hvala and S. Strmčnik*
11:40	Throughput maximization by improved bottleneck control *E.M.B. Aske, S. Skogestad and S. Strand*		Acclimation model of an aerobic bioreactor for the treatment of toxic wastewater, *F. Martínez, M.J. Betancur, J.A. Moreno, G. Buitrón and I. Moreno-Andrade*
12:00	**Lunch**		

Afternoon

	Studio I	Studio II	Studio III
13:30	Keynote: **Bayesian methods for control loop monitoring and diagnosis** ***B. Huan***, *University of Alberta, Canada* chair: *W. Marquardt*		Keynote: **Bistability Preserving Model Reduction in Apoptosis** ***S. Waldherr***, *T. Eissing, M. Chaves and F. Allgöwer* *University of Stuttgart, Germany* chair: *J.A. Moreno*
	Studio I	**Studio II**	**Studio III**
	Fault detection and diagnosis chair: *C.C. Yu* cochair: *J. Alvarez-Ramírez*	**Dynamic optimization** chair: *J. Lee* cochair: *J. Alvarez*	**Systems Biology** chair: *M. Perrier* cochair: *H. Puebla*
14:00	Two-dimensional dynamics PCA with auto-selected support region *Y. Yao, N. Lu and F. Gao*	Dynamic optimization of a plate reactor start-up supported by Modelica-based code generation software *S. Haugwitz, J. Åkesson and P. Hagander*	Optimal dynamic experimental design in systems biology: Applications in cell signaling, *E. Balsa-Canto, A.A. Alonso and J.R. Banga*
14:20	Detection and effect of quantisation in data-driven process analysis *M. Bauer and S. Madolo*	Fast Computation of the Hessian of the Lagrangian in Shooting Algorithms for Dynamic Optimization *R. Hannemann and W. Marquardt*	Control and synchronization of intracellular calcium dynamics: A robust sliding control approach, *R. Aguilar-Lopez, O. Esquivel-Flores and H. Puebla*
14:40	Enhancing Fault Isolation Through Nonlinear Controller Design *B.J. Ohran, P. Mhaskar, D. Muñoz de la Peña, P.D. Christofides and J.F. Davis*	Profile control in distributed parameter systems using lexicographic optimization based MPC *N. Padhiyar and S. Bhartiya*	Control of coupled cicardian oscillators, *H. Puebla, M. Ortiz-Vargas, R. Aguilar-Lopez and E. Hernandez-Martinez*
15:00	Robust Fault Detection and Handling In Control of Uncertain Transport-Reaction Processes *N.H. El-Farra and S. Ghantasala*	Optimization-Based Safety Analysis of an Industrial-Scale Evaporation System with Hybrid Dynamics *A. Völker, C. Sonntag, S. Lohmann and S. Engell*	
15:20	Process Monitoring Using Key Sensitivity Index: Applications to Semiconductor Manufacturing *J.C. Jeng, A.J. Su, C.C. Yu and H.P. Huang*	Effect of Excitation Frequency in Perturbation-based Extremum Seeking Methods *M. Chioua, B. Srinivasan, M. Perrier and M. Guay*	
15:40		Multi-unit optimization with gradient projection on active constraints *L. Woodward, M. Perrier and B. Srinivasan*	
16:00 - 18:00	**Poster Session**		
20:00	**Closing Ceremony and Conference Dinner - CAB**		

CAB+DYCOPS WEDNESDAY June 6th, 2007

Late afternoon (16:00 - 18:00)

Poster Session

chair: *J. Figueroa*

W1.1	Optimal Transition Control of Diffusion-Convection-Reaction Processes, *M. Li and P.D. Christofides*
W1.2	Constructive MPC of a class of exothermic CSTR's, J. *Figueroa, S. Biagiola and J. Alvarez*
W1.3	LQG Control with reconfigurable state estimator under sensor and actuator failures, *U.S. Zamad, A.P. Deshpande and S.C. Patwardhan*
W1.4	Accounting risk in multistage stochastic problems using approximate dynamic programming, *N.E. Pratikakis, M.J. Realff and J.H. Lee*
W1.5	Using NMPC based on a low-order model for controlling pressure during oil well drilling, *G. Haukenes Nygaard, L. Struen Imsland and E. Aarsand Johannessen*
W1.6	Degrees of freedom analysis of economic dynamic optimal plantwide operation, *A.E.M. Huesman, O.H. Bosgra and P.M.J. Van den Hof*
W1.7	Design of a sliding mode neurocontroller for a nuclear research reactor, *J.H. Pérez-Cruz and A. Poznyak*
W1.8	Delay dynamic compensation enhanced PI controllers in automotive systems, *V. Assuncao*
W1.9	Optimal Control of the Simulated Moving Bed (SMB) chromatographic separation process, *M.S.G. García, E. Balsa-Canto, A. Vande Wouwer and J.R. Banga*
W1.10	Optimal start-up and steady-state transition policies in a pentene metathesis reactive distillation column, *R. López-Negrete de la Fuente and A. Flores-Tlacuahuac*
W1.11	Control and energy savings of the Petlyuk distillation system, *J.P. Rodríguez, E. Moreno, J.G. Segovia-Hernández, A. Jiménez and R. Maya-Yescas*
W1.12	The continous stirred tank reactor: Adaptive LQ Control, *J. Vojtesek, P. Dostal and V. Bobal*
W1.13	One of possible approaches to control of multivariable control loop, *P. Navrátil and J. Balátě*
W1.14	Development of a 4-measurable states activated sludge process model deduced from the ASM1, *M. Mulas, S. Tronci and R. Baratti*
W1.15	Control properties analysis of alternate schemes to thermally coupled distillation schemes, *J. G. Segovia-Hernández, S. Hernández and H. Hernández*
W1.16	Robust Control of a Solidification Process with Parametric Uncertainty, *B. Furenes and B. Lie*

W1.17	Multivariable control of a reduction furnace, *M. Ramírez-Mendoza and P. Albertos*
W1.18	Combining Conceptual and Referential Reaction Methods for Batch Distillation Control, *J.L. Marchetti and J. Espinosa*
W1.19	Integrated closed loop control and process design, *G. Gutiérrez, P. Vega and C. de Prada*
W1.20	Dynamic behaviour of a novel small scale hydrogen reformer, *F.A. Michelsen, I. Schjølberg and B.F. Lund*
W1.21	Computational evaluation of the effect of some Thermolithography Process parameters on Rapid Prototyping, *R.A. Rezende, S.R. Andrade, A.L. Jardini, , M.A.F. Scarparo and R. Maciel Filho*
W1.22	Molecular design of alternative refrigerants using genetic algorithms, *E. Oguz Ulker, M. Yuceer and R. Berber*
W1.23	Sensor fault diagnosis in dynamic processes, *A. Alawi and J. Morris*
W1.24	Modelling industrial fermentation data with multiway multivariate techniques, *A.P. Ferreira, J. Almeida Lopes and J. Cardoso de Menezes*
W1.25	Operational planning in the management of programmed maintenances A MILP approach, *F. Manenti and M. Rovaglio*
W1.26	Agent-Based Monitoring, Fault Detection, Diagnosis and Control of Spatially Distributed Processes, *S. Perk and A. Çinar*
W1.27	Development of endpoint detection algorithm in the multi-step plasma etching process, *K. Han, K.J. Park, H. Chae, C. Han and E. Sup Yoon*
W1.28	Scaling and discrimination issues in monitoring, fault detection and diagnosis, *S.R. Khare, V.A. Bavdekar, S.C. Kadu, K.P. Detroja and R.D. Gudi*
W1.29	Detection of anomalous behavior and performance assessment of predicitve controllers, *R.A. Ghraizi, C. de Prada and E. Martínez*
W1.30	Adjustable-structure design for ternary distillation columns, *A. Pulis, C. Fernandez, R. Baratti and J. Alvarez*
W1.31	Quantifying the impact of control loop performance, time delay, and white-noise over the final product variability, *M. Farenzena and J.O. Trierweiler*

DYCOPS THURSDAY June 7th, 2007

Morning

08:30	Plenary: **Robust Identification of Process Models from Plant Data** *Graham Goodwin, University of Newcastle, Australia* chair: *J. Alvarez*, cochair: *P. Daoutidis*		
09:30	**Coffee Break**		
	Studio I		**Studio III**
09:50	Keynote:**On line estimation for process control and optimization applications** ***T.S. Schei***, *Cybernetica AS, Norway* chair: *J. Rawlings*		Keynote:**Recent advances in the modelling and control of cooling and antisolvent crystallization of pharmaceuticals** ***Z.K. Nagy***, *M. Fujiwara and R.D. Braatz, UK* chair: *B. Huang*
	Studio I	**Studio II**	**Studio III**
	Estimation chair: *P. van den Hof* cochair: *V. Alexandrov*	**Batch process and quality monitoring** chair: *B. Srinivasan* cochair: *H. Hernández*	**Control of large scale systems** chair: *H. Budman* cochair: *A. Morales*
10:20	Moving Horizon Estimation and Optimal Excitation in Temperature Oscillation Calorimetry *W. Mauntz, M. Diehl and S. Engell*	Production of High-purity Ethyl Acetate using reactive distillation: Experimental Validation and Start-up procedure *I.K. Lai, Y.C. Liu, C.C. Yu and H.P. Huang*	Control Structure Design for a Reactor/Separator Process with Two Recycles *H. Seki and Y. Naka*
10:40	Constrained Extended Kalman Filter for Nonlinear State Estimation *S. Ungarala, E. Dolence and K. Li*	Multivariate Statistical Estimation of product quality in the industrial batch production o a resin, *P. Facco, M. Olivi, C. Rebuscini, F. Bezzo and M. Barolo*	Inventory regulation and synchronization of dynamic supply chains by nonlinear bounded PI control, *A. Morales-Diaz and A. Rodriguez-Angeles*
11:00	Design of an interval observer for exothermic fed-batch processes *F. Sauvage, D. Dochain and T. Monge*	Modeling and Optimization of Batch Process through Wavelet Analysis and Multivariate Analysis, *M. Kano, K. Fujiwara, S. Hasebe and H. Ohno*	Maximum Gain Rule for Selecting Controlled Variables, *E. S. Hori and S. Skogestad*
11:20	Constructive Estimator design for binary Distillation Columns, *C. Fernandez and J. Alvarez*	New column configurations for pressure swing batch destillation I. Feasibility Studies, *G. Modla and P. Lang*	Electrical Parameter Control for Semiconductor Device Manufacturing: A Fab-wide Approach, *C. Schoene, S.J. Qin, E. Kutanoglu and J. Stuber*
11:40	State Estimation of SOFC/GT Hybrid System using UKF, *R. Kandepu, B. Huang, B. Foss and L. Imsland*	Efficient Model Identification through Senser Location in Batch Distillation, *S.Y. Guhe and J.A. Wilson*	Controlled variables selection for a biological wastewater treatment process, *M. Mulas, R. Baratti and S. Skogestad*
12:00	**Lunch**		

Afternoon

	Studio I	Studio III
13:30	*Keynote:* **Model-based control of subsurface flow** ***J. D. Jansen*** *- TU Delft* chair: *S.Skogestad*	*Keynote:* **Simultaneous process and control design of dynamic systems under uncertainty** *L.A. Ricardez Sandoval,* ***H.M. Budman*** *and P.L.Douglas* chair: *M. Tade*

	Studio I	Studio II	Studio III
	Novel applications chair: *M. Hovd* cochair: *A. Flores*	**Batch process control** chair: *F. Gao* cochair: *E. Castellanos-Sahagún*	**Identification and control** chair: *Z. Nagy* cochair: *M. Shaaf*
14:00	State estimation of a largescale system in the petroleum industry: The ensemble Kalman filter for updating reservoir models, *G. Nævdal, A. Bianco, A. Cominelli, L. Dovera, R.J. Lorentzen and B. Vallès*	Control of Particle Size Distribution in Emulsion Co-Polymerization Processes, *A. Maulud and J. Romagnoli*	On test design for subspace identification of multivariable ill-conditioned systems, *A. Micchi and G. Pannocchia*
14:20	Process Control of a subsea processing plant, *A. Faanes, H. Mordt, G.O. Eikrem and K. Høisæther*	Multivariable control of an industrial gas phase copolymerization reactor, *J.P. Corriou*	Identifying chemical reaction network models, *S.C. Burnham, M.J. Willis and A.R. Wright*
14:40	Modelling and Design of microflow sensors based on measuring of temperature field, *M. Adámek, M. Matýsek, P. Neumann and K. Kodriková*	Run-to-run control of membrane filtration in wastewater treatment - An experimental study, *J. Busch and W. Marquardt*	An Iterative, Direct Closed Loop Identification Method For Model Refinement: Application to Interaction Estimation, *K. Doshi, A.N. Venkat, R.D. Gudi and J.B. Rawlings*
15:00	Modelling and Optimization of the thermal behavior of a silicon steel decarburization process, *C.M. Silva, M.M. Silva and M. Ziviani*	Optimizing control of variable cycle time simulated moving beds, *C. Grossmann, M. Amanullah, M. Mazzotti, M. Morbidelli and M. Morari*	Identification of Non-uniformly Sampled Multirate Systems using Orthonormal Basis Filters, *R.K. Gandhi, S.C. Patwardhan and S.L. Shah*
15:20	Computer aided design of procedural control software, *G. Kandare and S. Strmčnik*	An Industrial Approach for Efficient Modeling and Advanced Control of Chemical Batch Processes, *B. Vandecraen, J. Espinosa, B. Pluymers, D.R. Vinson, J. Ludlage and W. Van Brempt*	Higher-order generalized 2D predictive iterative learning control schemes, *J. Shi and F. Gao*
15:40	Optimal strategies for controlling particle size in antisolvent crystallization operations, *S.M. Nowee, A. Abbas, J.A. Romagnoli and P. Yeo*	Modelling and identification from batch experiments of a SMB process, *V. Grosfils, C. Levrie, M. Kinnaert and A. Vande Wouwer*	Estimation of chrystal size distribution of a batch chrystallization process using a growth size dependent model, *T. Bakir, S. Othman and H. Hammouri*
16:00 - 18:00	**Poster Session 2**		

DYCOPS THURSDAY June 7th, 2007

Late afternoon (16:00 - 18:00)

Poster Session

chair: *J.O. Trierweiler*

P2.1	Towards a generic model structure of bioreactors, *G. Hafidi, A.M. Vladu, S. Tebbani and D. Dumur*
P2.2	Neural modelling and sliding mode control of biodegradation process in a rotating biorreactor, *I.S. Baruch, C.R. Mariaca-Gaspar and J. Barrera-Cortes*
P2.3	A hybrid platform for refinery simulation with case switches, *J. Li, G. Rong and Y. Feng*
P2.4	Friction model parameter estimation for control valves, *C. Garcia*
P2.5	Constrained Recursive Parameter Estimation for Adaptive Control, *A. Singh, A.S. Badwe and S.C. Patwardhan*
P2.6	Dynamic Simulation of Reactive Distillation Processes to predict Start-up behavior, *P. Bettio Staudt, R.P. Soares and A.R. Secchi*
P2.7	Debugging Static and Dynamic Rigorous Models for Equation-Oriented CAPE Tools, *R.P. Soares and A.R. Secchi*
P2.8	Incremental nonlinear parameter estimation in dynamic systems, *H.A. Preisig*
P2.9	Comparison between two friction model parameter estimation methods applied to control valves, *R. Alvite Romano and C. Garcia*
P2.10	Simulation of chromatographic profiles for multicomponent mixtures of aromatic compounds, *O. Foddi, L. Leoni, S. Melis and S. Tronci*
P2.11	Test-based parameter estimation of a bench-scale distillation column for predictive control, *F.R. López-Estrada, D. Juárez-Romero, V.M. Alvarado-Martínez, C.M. Astorga-Zaragoza, G. Valencia-Palomo, E. Quintero-Marmol and F. Rivas-Cruz*
P2.12	MPC relevant identification using Generalized orthonormal basis filters, *K. Palnitkar, A.S. Badwe, S.C: Patwardhan and R.D. Gudi*
P2.13	Computational Design of the Two-Level Control for the Singularly Perturbed System, *V.V. Alexandrov, M.R. Reyes and W.F.S. Guerrero*
P2.14	A Lagrangean Decomposition Heuristic for the Simultaneous Scheduling and Optimal Control of Multi-Grade Polymerization Reactors, *S. Terrazas-Moreno, A. Flores-Tlacuahuac and I.E. Grossmann*
P2.15	Control of Multi-Phase Batch Processes: Formulation and Challenge, *Y. Wang, Y. Yang, F. Gao and D. Zhou*
P2.16	A saturated control for a continuous anaerobic bioreactor, *A. Morales-Diaz and A. Rodriguez-Angeles*

P2.17	Control of a Catalytic Flow Reversal Reactor Model by Linear Quadratic Regulator, *A.M. Fuxman, I. Aksikas, J.F. Forbes and R.E. Hayes*
P2.18	Optimal jacketed tubular reactor operation: classic vs. flow reversal, *F. Logist, A. Vande Wouwer, I.Y. Smets and J.F.M. Van Impe*
P2.19	New column configurations for pressure swing batch distillation II. Rigorous simulation calculations, *G. Modla and P. Lang*
P2.20	Experimental Verification of Optimal Start-Up Policies in a Continuous Stirred Bioreactor, *L. Luperini-Enciso, H. Purón-Zepeda, L. Pedraza-Segura and A. Flores-Tlacuahuac*
P2.21	An approach to optimization of a three phase catalytic slurry reactor by evolutionary optimization with genetic algorithms, *D.N.C. Melo, E.C. Vasco de Toledo, A.P. Mariano, M.M. Santos and R.M. Filho*
P2.22	Batch Process Modeling Based on Process Similarity, *J. Lu and F. Gao*
P2.23	Stable indirect adaptive fuzzy control based on Takagi-Sugeno Model, *R. Qi and M.A. Brdys*
P2.24	Design and experimental evaluation of a Data-Driven PID Controller, *T. Yamamoto and K.Takao*
P2.25	Analytical controller design of integrating and first order unstable time delay process, *M. Shamsuzzoha, M.K. Yoon and M. Lee*
P2.26	Gain and Phase Margins Iterative Controller Tuning, *M.A.R. Berger and P.R. Barros*
P2.27	Nonparametric method for identification of MIMO Hammerstein models, *J.C. Jeng and H.P. Huang*
P2.28	Control Scheme Based on Internal Prediction for Unstable Linear Time-Delay Systems, *B. del-Muro-Cuellar, M. Velasco-Villa, J. Álvarez-Ramírez, F. Márquez-Rubio and O. Jiménez-Ramírez*
P2.29	A simple way to generate dynamic models from static simulations, *P. Bolognese-Fernandes and J.O. Trierweiler*
P2.30	Loop-shaping PI controller redesign using least-squares model-matching, *G. Acioli Júnior and P.R. Barros*
P2.31	Performance-Driven Adaptive PID Controller Design:Theory and Experimental Evaluation, *Y. Ohnishi and S.L. Shah*

DYCOPS FRIDAY June 8th, 2007

Morning

	Studio I	Studio II	Studio III
08:30	*Keynote:* **On the convergence of boundary control strategies designed using ODE approximations of diffusive PDE systems** ***T.R. Bewley***, *A.S. Sharma,* *University of California San Diego* chair: *E. Ydstie*		*Keynote:* **A fast computational framework for large-scale moving horizon estimation** ***V.M. Zavalla***, *C.D. Laird, L.T. Biegler,* *Carnegie Mellon University* chair: *J. Qin*
	Studio I	**Studio II**	**Studio III**
	State estimation and control chair: *P. Daoutidis* cochair: *H. Puebla*	**Control applications** chair: *C. Scali* cochair: *A. Cinar*	**Dissipativity based control** chair: *R. Baratti* cochair: *K. Hoo*
09:00	Nonlinear Model Predictive Control Based on Sequential Monte Carlo State Estimation, *S.K. Botchu and S. Ungarala*	On the operability of high-order multivariable non-square systems, *F.V. Lima and C. Georgakis*	Passivity based control of process networks, *J. Bao, K.R. Jillson and B.E. Ydstie*
09:20	Robust H2 Filtering for Continuous-time Stochastic Systems with Uncertainties, *K.H. Lee and B. Huang*	Adaptive Model Predictive Control of Dissolved Oxygen in a Bioreactor, *R.P. Raja, A.S. Badwe, S.C. Patwardhan and S.B. Noronha*	Dissipativity-based observer and feedback control design for a class of chemical reactors, *A. Schaum, J.A. Moreno, J. Díaz Salgado and J. Álvarez*
09:40	Interlaced estimator-control design for continuous exothermic reactors with non-monotonic kinetics, *J. Diaz-Salgado, A. Schaum, J. A. Moreno and J. Alvarez*	MW Control of continous polymer reactors, *P. Gonzalez and J. Alvarez*	Stability of Supervised Adaptive Control, *E.J. Dozal-Mejorada and B. E. Ydstie*
10:00	**Coffee Break**		
	Studio I	**Studio II**	**Studio III**
	Model predictive control chair: *G. Gutierrez* cochair: *A. Morales*	**Process operation** chair: *C. Georgakis* cochair: *S. Park*	**Adaptive and optimizing control** chair: S. Engell cochair: *M. Guay*
10:20	Reduction of material loss during grade change predictive control in a paper machine, *M. Schaaf, R.C. Melo, R. De Keyser and A. Cipriano*	Optimal start-up of an evaporation station, *C. de Prada, S. Cristea and J.J. Rosano*	Bounded positive adaptive control for counterflow heat exchangers, *A. Zavala-Río, C.M. Astorga-Zaragoza and O. Hernández-González*
10:40	Generalized predictive control based in multivariable bilinear multimodel, *A. de B. Fontes, A.L. Maitelli and A.L. de Oliveira Cavalcanti*	Implementation of optimal operation using off-line computations, *S. Narasimhan and S. Skogestad*	Optimizing Control of the Hashimoto SMB Process: Experimental Application, *A. Küpper and S. Engell*
11:00	Model predictive control of integrated quantity and quality in drinking water distribution systems, *M. Drewa, M.A. Brdys and A. Cimiński*	Efficient Dynamic Optimization of the MMA Cell-Cast Process for Plastic Sheet Production, *M. Rivera-Toledo, A. Flores-Tlacuahuac and L. Vilchis-Ramírez*	Adaptive controller design for trajectory tracking in a Fuel-Cell powered automobile, *S. Palanki, P.K. Kolavennu, D.Cartes and J.C. Telotte*

	Studio I	Studio II	Studio III
11:20	Nonlinear internal model control of PEM Fuel Cell, *P.S. Bedi, R.N. Methekar, S.C. Patwardhan, V. Prasad and R.D. Gudi*	Using process analytical technology for in situ monitoring of the polymorphic transformation of organic compounds, *Z. Nagy, A.L. Gillon, G. Steele, N. Makwana and C.D. Rielly*	Fault-tolerant control of a reverse osmosis desalination process, *C.W. McFall, P.D. Christofides, Y. Cohen and J.F. Davis*
11:40	Supervised Adaptive Predictive Control Using Dual Models, *E.J. Dozal-Mejorada, P. Thakker and B.E. Ydstie*	Calibration of Spectroscopic Sensors with Gaussian Process and Variable Selection, *T. Chen, X. Ou and E. Martin*	
12:00	**Lunch**		

Afternoon

	Studio I	Studio II	Studio III
	Inferential sensors and control chair: *J. Romagnoli* cochair: *M.Barolo*	**Process modelling and control applications** chair: *F. Gao-Palanki* cochair: *J. Figueroa*	**Modelling and control** chair: *Z. Nagy* cochair: *M. Hovd*
13:30	Inferring distillation product composition: a hybrid soft sensor approach, *I.Y. Smets, S. Boon, T. Boelen, J. Espinosa and J.F. Van Impe*	Multi-scale dynamics of high energy troughput systems, *M. Baldea and P. Daoutidis*	Disturbance Modeling for Process Control via Hidden Markov Models, *W.C. Wong and J.H. Lee*
13:50	Measures of Topological Relevance for Soft Sensing Product Properties, *F. Corona, L. Sassu, S. Melis and R. Baratti*	Complex decision making at a re-entrant flow station under uncertainty, *R. Agrawal, J.H. Lee and M.J. Realff*	A grey-box modeling approach for the reduction of nonlinear systems, *R. Romijn, L. Özkan, S. Weiland, J. Ludlage and W. Marquardt*
14:10	Self-organization agent-based grade transition in distributed chemical reactor networks, *M.D. Tetiker, E. Tatara, M. North, F. Teymour and A. Cinar*	Parameter Identification for Nonlinear Stochastic PDE Model of a Sputtering Process, *Y. Lou, G. Hu, P.D. Christofides and G. Orkoulas*	On the Effect of Un-Identifiability on Control, *A.Ben-Zvi*
14:30	A new performance evaluation strategy for decentralized multivariable PID control systems, *G. Pannocchia and C. Scali*	Mathematical performance analysis of a temperature controlled bulk storage room, *S. van Mourik, J.P.M. Ploegaert, H. Zwart and K.J. Keesman*	Control Structure Analysis And Design For Nonlinear Multivariable Systems, *J. Nandong, Y. Samyudia and M.O. Tadé*
14:50	Optimal Sensor Network Design for Multirate Systems, *S.C. Kadu, M. Bhushan and R. Gudi*	Model-based framework for ternary alloy electrodeposition processes: Model validations and parameter estimation, *M.E Estrada, E.J. Podlaha, J.A. Romagnoli and D. Aragon*	Optimal Measurement Combinations as Controlled Variables, *V. Kariwala, Yi Cao and S. Janardhanan*
15:10	Effect of finite-dimensional approximations on observability analysis of distributed parameter models, *A. Singh and J. Hahn*		Robustness Analysis of Wiener Systems, *J. Figueroa, S. Biagiola and O. Agamennoni*
15:30	**Break**		
15:50	Plenary: **An interim report on the addition of nonlinear model predictive control to industry's advanced applications toolset,** *D. Bartusiak, ExxonMobil Chemical Engineering* chair: *B. Foss* , cochair: *J. Alvarez*		
16:50	**Closing Ceremony**		
20:00	**Conference Dinner**		