

12th IFAC Symposium on Computer Applications in Biotechnology 2013

**Mumbai, India
16 - 18 December 2013**

Editors:

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**Eric Bullinger
S. Lakshminarayanan**

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Content List of 12th IFAC Symposium on Computer Applications in Biotechnology

Technical Program for Monday December 16, 2013

MoPleP	Main Auditorium
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Chair: Samavedham, Lakshminarayanan	National Univ. of Singapore
09:00-10:00	MoPleP.1
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Schwaber, James S.	Thomas Jefferson Univ.
Vadigepalli, Rajanikanth	Thomas Jefferson Univ.
MoKeyAP	Main Auditorium
Keynote Mo A (Keynote Session)	
Chair: Yue, Hong	Univ. of Strathclyde
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Borchert, Sven-Oliver	Hamburg Univ. of Applied Sciences
Luttmann, Reiner	Hamburg Univ. of Applied Sciences
Cornelissen, Gesine	Hamburg Univ. of Applied Sciences
MoAP	Main Auditorium
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Chair: Smets, Ilse	KU Leuven, Department of Chemical Engineering, BioTeC
Co-Chair: Budman, Hector M.	Univ. of Waterloo
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Pham, Huy Hoang	KU Leuven, Department of Chemical Engineering, BioTeC
Lambert, Nico	Thomas More, Campus De Nayer, Promil
Buffel, Pieter	KU Leuven, Department of Chemical Engineering, BioTeC
Van Eyck, Kwinten	Thomas More, Campus De Nayer, Promil
Van den Broeck, Rob	K.U.Leuven, Chemical Engineering Department
Dewil, Raf	Katholieke Univ. Leuven
Smets, Ilse	KU Leuven, Department of Chemical Engineering, BioTeC
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Mulas, Michela	Aalto Univ. - School of Engineering
Tronci, Stefania	Univ. degli Studi di Cagliari
Corona, Francesco	Aalto Univ. School of Science
Haimi, Henri	Aalto Univ.
Lindell, Paula	Helsinki Region Environmental Services Authority, Finland
Heinonen, Mari	Helsinki Region Environmental Services Authority, Finland
Vahala, Riku	Aalto Univ.
Baratti, Roberto	Univ. degli Studi di Cagliari
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Goldrick, Stephen	Newcastle Univ.
Lennox, Barry	Univ. of Manchester
Lovett, David	Perceptive Engineering, Daresbury Innovation Centre, Daresbury, C
Smith, Keith	Perceptive Engineering Limited
Montague, Gary	Newcastle Univ.
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Ohadi, Seyed Kaveh	Univ. of Waterloo
Aghamohseni, Hengameh	Univ. of Waterloo

Gädke, Johannes	Univ. of Waterloo, Canada
Moo-Young, Murray	Univ. of Waterloo
Legge, Raymond Louis	Univ. of Waterloo
Scharer, Jeno	Univ. of Waterloo
Budman, Hector M.	Univ. of Waterloo

MoKeyP1	Seminar Room 1
Keynote Mo P1 (Keynote Session)	
Chair: Bernard, Olivier	INRIA
Co-Chair: Findeisen, Rolf	Otto-von-Guericke-Univ. Magdeburg
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Belgacem, Ismail	INRIA Biocore
Gouze, Jean-Luc	INRIA

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Chair: Budman, Hector M.	Univ. of Waterloo
Co-Chair: Mulas, Michela	Aalto Univ. - School of Engineering
14:00-14:30	MoKeyP2.1
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Vignoni, Alejandro	Univ. Pol. de Valencia
Núñez, Sebastián	Univ. of La Plata
De Battista, Hernán	Univ. of La Plata
Picó, Jesús	Univ. Pol. de Valencia
Pico-Marco, Enric	Tech. Univ. of Valencia
Garelli, Fabricio	Univ. of La Plata

MoP1	Seminar Room 1
Bioprocesses 1 (Regular Session)	
Chair: Picó, Jesús	Univ. Pol. de Valencia
Co-Chair: Mahadevan, Radhakrishnan	Univ. of Toronto
14:30-14:50	MoP1.1
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Rehberg, Markus	Max Planck Inst. for Dynamics of Complex Tech. Systems
Wetzel, Maria	Max Planck Inst. for Dynamics of Complex Tech. Systems
Ritter, Joachim B.	Max Planck Inst. for Dynamics of Complex Tech. Systems
Reichl, Udo	Max Planck Inst. for Dynamics of Complex Tech.
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Fricke, Jens	Hamburg Univ. of Applied Sciences
Luttmann, Reiner	Hamburg Univ. of Applied Sciences
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Dewasme, Laurent	Univ. de Mons
Amribt, Zakaria	Univ. Libre de Bruxelles
Santos, Lino	Faculty of Sciences and Tech. Univ. of Coimbra
Hantson, Anne-Lise	UMONS
Bogaerts, Philippe	Univ. Libre de Bruxelles
Vande Wouwer, Alain	Univ. de Mons
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Arora, Ela	Department of Chemical Engineering, D. D. Univ.
Detroja, Ketan P	Indian Inst. of Tech. Hyderabad, Yeddumailaram, Andhra P
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Tebbani, Sihem
 Titica, Mariana
 Caraman, Sergiu
 Boillereaux, Lionel

Supelec
 Univ. of Nantes
 Dunarea de Jos Univ.
 ENITIAA

MoP2		Seminar Room 2
Bioinformatics & Systems Biology (Regular Session)		
Chair: Gouze, Jean-Luc		INRIA
Co-Chair: Bullinger, Eric		Univ. of Liege
14:30-14:50		MoP2.1
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Prajapat, Mahendra		Indian Inst. of Tech. Bombay
Jain, Kirti		Indian Inst. of Tech. Bombay
Saini, Supreet		Indian Inst. of Tech. Bombay
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Trotta, Laura		Univ. of Liege
Bullinger, Eric		Univ. of Liege
Sepulchre, Rodolphe J.		Univ. de Liege
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Baraskar, Ankit A.		Indian Inst. of Tech. Bombay
Deb, Aniket		Indian Inst. of Tech. Bombay
Viswanathan, Ganesh A.		Indian Inst. of Tech. Bombay
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Mal, Chittabrata		Univ. of Calcutta
Deb, Arindam		Univ. of Calcutta
Md, Aftabuddin		West Bengal Univ. of Tech.
Kundu, Sudip		Univ. of Calcutta
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Prasanna, Arun		IIT Bombay
Mehra, Sarika		IIT Bombay

Technical Program for Tuesday December 17, 2013

TuPle1	Main Auditorium
Plenary Tu (Plenary Session)	
Chair: Smets, Ilse	KU Leuven, Department of Chemical Engineering, BioTeC
Co-Chair: Gudi, Ravindra	IIT Bombay
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<i>Modeling, Validation, and Analysis of Biotechnological Processes - a Perspective on Set-Based Methods*</i> . N/A	
Findeisen, Rolf	Otto-von-Guericke-Univ. Magdeburg
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Keynote Tu A (Keynote Session)	
Chair: Reichl, Udo	Max Planck Inst. for Dynamics of Complex Tech.
Co-Chair: Tebbani, Sihem	Supelec
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Baroukh, Caroline	INRA
Muñoz-Tamayo, Rafael	INRIA
Steyer, Jean-Philippe	INRA
Bernard, Olivier	INRIA
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Chair: Klapa, Maria	Foundation for Res. and Tech.
Co-Chair: Shimizu, Kazuyuki	Keio Univ.
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Hanly, Timothy	Univ. of Massachusetts, Amherst
Tiernan, Aubrey	Univ. of Massachusetts, Amherst
Henson, Michael A.	Univ. of Massachusetts, Amherst
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Mouret, Jean-Roch	INRA, Montpellier
David, Robert	UCL
Zamorano, Francisca	Univ. de Mons
Vande Wouwer, Alain	Univ. de Mons
Dochain, Denis	Univ. Catholique de Louvain
Sablayrolles, Jean Marie	INRA
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Matsuoka, Yu	Kyushu Inst. of Tech.
Shimizu, Kazuyuki	Keio Univ.
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Portela, Carla	Inst. for Biotechnology and Bioengineering, Centre of Biolog
Villas-Bôas, Silas	School of Biological Sciences, Univ. of Auckland
Rocha, Isabel	Univ. of Minho
Ferreira, Eugenio	Univ. of Minho
TuInvPleA1	Main Auditorium
Invited Lecture 1 (Plenary Session)	
Chair: Gouze, Jean-Luc	INRIA
Co-Chair: Yue, Hong	Univ. of Strathclyde
12:20-13:20	TuInvPleA1.1
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Chair: Carlos-Hernandez, Salvador	Cinvestav, Unidad Saltillo
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Fahrenkopf, Max	Carnegie Mellon Univ.
Ydstie, B. Erik	Carnegie Mellon
Mukherjee, Tamal	Carnegie Mellon Univ.
Schneider, James	Carnegie Mellon Univ.
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Chair: Ferreira, Eugenio	Univ. of Minho
Co-Chair: Huusom, Jakob Kjøbsted	Tech. Univ. of Denmark
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Somvanshi, Pramod	Indian Inst. of Tech. Bombay
Patel, Anil Kumar K	Indian Inst. of Tech. Bombay
Venkatesh, K. V.	Indian Inst. of Tech. Bombay, Mumbai, India
Bhartiya, Sharad	IIT Bombay
TuP2	Seminar Room 1
Bioprocesses 2 (Regular Session)	
Chair: Georgakis, Christos	Tufts Univ.
Co-Chair: Huusom, Jakob Kjøbsted	Tech. Univ. of Denmark
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Price, Jason	Tech. Univ. of Denmark
Nordblad, Mathias	Tech. Univ. of Denmark
Woodley, John M.	Tech. Univ. of Denmark
Huusom, Jakob Kjøbsted	Tech. Univ. of Denmark
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Hanly, Timothy	Univ. of Massachusetts, Amherst
Henson, Michael A.	Univ. of Massachusetts, Amherst
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Wang, Zhenyu	Tufts Univ.
Georgakis, Christos	Tufts Univ.
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Ifrim, George Adrian	Dunarea de Jos Univ.
Titica, Mariana	Univ. of Nantes
Boillereaux, Lionel	ENITIAA
Caraman, Sergiu	Dunarea de Jos Univ.
Legrand, Jack	Univ. of Nantes
TuP3	Seminar Room 2
Systems Biology (Regular Session)	
Chair: Bernard, Olivier	INRIA
Co-Chair: Venkatesh, K. V.	Indian Inst. of Tech. Bombay, Mumbai, India
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Bhaskar, R.V.S. uday	Indian Inst. of Tech. Bombay

Tirumkudulu, Mahesh S. Venkatesh, K. V.	Indian Inst. of Tech. Bombay Indian Inst. of Tech. Bombay, Mumbai, India
14:50-15:10	TuP3.2
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Schliemann, Monica	Univ. de Liège
Livingstone, Samuel	Off The Fence
Readman, Mark C.	Stockport Coll.
Kalamatianos, Dimitrios	Biomedical Res. Foundation of the Acad. of Athens
Bullinger, Eric	Univ. of Liege
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Grimaud, Ghjuvan Micaelu	INRIA
Dron, Anthony	CNRS
Rabouille, Sophie	CNRS
Sciandra, Antoine	LOV
Bernard, Olivier	INRIA
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Boillereaux, Lionel	ENITIAA
Curet, Sebastien	GEPEA - UMR 6144 CNRS
Hamoud Agha, Mohamad Mazen	ONIRIS
Simonin, Hélène	AGROSUP Dijon
TuInvPleP1 Main Auditorium	
Invited Lecture 2 (Plenary Session)	
Chair: Venkatesh, K. V.	Indian Inst. of Tech. Bombay, Mumbai, India
Co-Chair: Bhartiya, Sharad	IIT Bombay
16:15-17:15	TuInvPleP1.1
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Padinhateeri, Ranjith	IIT Bombay
TuPoster1 Foyer	
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Chair: Samavedham, Lakshminarayanan	National Univ. of Singapore
Co-Chair: Pan, Tian-Hong	Jiangsu Univ.
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Mauricio-Iglesias, Miguel	Tech. Univ. of Denmark
Vangsgaard, Anna Katrine	Tech. Univ. of Denmark
Gernaey, Krist	Tech. Univ. of Denmark
Sin, Gurkan	Tech. Univ. of Denmark
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Vinopraba, Thirumavalavan	Department of Inst. and Control Engineering, National
Natarajan, Sivakumaran	National Inst. of Tech. Tiruchirappalli
Sivakumaran, N.	National Inst. of Tech.
T.K., Radhakrishnan	National Inst. of Tech. Tiruchirappalli
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Diaz Jimenez, Lourdes	Cinvestav Saltillo
Luis Gutierrez, Lidia Guadalupe	Univ. Autonoma de Coahuila
Cruz Ortiz, Brenda Rogelina	Cinvestav Saltillo
Carlos-Hernandez, Salvador	Cinvestav, Unidad Saltillo
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Carlos-Hernandez, Salvador	Cinvestav, Unidad Saltillo

Bueno, J. Andres
Sanchez, Edgar N.
Diaz Jimenez, Lourdes

Cinvestav Guadalajara
CINVESTAV
Cinvestav Saltillo

17:15-18:00

TuPoster1.5

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Cautha, Sarat C
Gowen, Christopher M
Lussier, François-Xavier
Gold, Nicholas D.
Martin, Vincent J. J.
Mahadevan, Radhakrishnan

Univ. of Toronto
Univ. of Toronto
Concordia Univ. Montreal
Concordia Univ. Montreal
Concordia Univ. Montreal
Univ. of Toronto

Technical Program for Wednesday December 18, 2013

WeKeyAT1		Seminar Room 1
Keynote We A (Keynote Session)		
Chair: Shimizu, Kazuyuki		Keio Univ.
Co-Chair: David, Robert		UCL
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Vernardis, Spyros		Foundation for Res. and Tech.
Goudar, Chetan		Bayer HealthCare
Klapa, Maria		Foundation for Res. and Tech.
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Chair: Bullinger, Eric		Univ. of Liege
Co-Chair: Kano, Manabu		Kyoto Univ.
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Coronado, Javier		École Pol. de Montréal
Perrier, Michel		Ec. Pol.
Tartakovsky, Boris		National Res. Council of Canada
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Sengupta, Tirthankar		Indian Inst. of Tech. Bombay
Jain, Shivi		Indian Inst. of Tech. Bombay
Bhushan, Mani		Indian Inst. of Tech. Bombay
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Alonso, Ana Lucia		AmpliBio S.A.
Rosas-Jaimes, Oscar		Univ. Autonoma del Estado de Mexico
Suárez-Cuenca, Juan Antonio		Department of Clinical Res. CMN "20 de Noviembre", ISSSTE,
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Hashimoto, Hirotsugu		Kyoto Univ.
Fujiwara, Koichi		Kyoto Univ.
Suzuki, Yoko		Tokyo Medical and Dental Univ.
Miyajima, Miho		Tokyo Medical and Dental Univ.
Yamakawa, Toshitaka		Shizuoka Univ.
Kano, Manabu		Kyoto Univ.
Maehara, Taketoshi		Tokyo Medical and Dental Univ.
Ohta, Katsuya		Tokyo Medical and Dental Univ.
Sasano, Tetsuo		Tokyo Medical and Dental Univ.
Matsuura, Masato		Tokyo Medical and Dental Univ.
Matsushima, Eisuke		Tokyo Medical and Dental Univ.
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Saraiva, Ines		Univ. de Mons
Vande Wouwer, Alain		Univ. de Mons
Hantson, Anne-Lise		UMONS
Moreno, Jaime A.		Univ. Nacional Autonoma de Mexico-UNAM
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Moreno, Jaime A.		Univ. Nacional Autonoma de Mexico-UNAM
Alvarez, Jesus		Univ. Autonoma Metropolitana

WeA02		Seminar Room 3
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Chair: Perrier, Michel		Ec. Pol.
Co-Chair: Bernard, Olivier		INRIA
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Amribt, Zakaria		Univ. Libre de Bruxelles
Dewasme, Laurent		Univ. de Mons
Vande Wouwer, Alain		Univ. de Mons
Bogaerts, Philippe		Univ. Libre de Bruxelles
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Sbarciog, Mihaela		Mons Univ.
Coutinho, Daniel		Univ. Federal de Santa Catarina
Vande Wouwer, Alain		Univ. de Mons
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Khaksar Toroghi, Masood		Ec. Pol. de Montreal
Goffaux, Guillaume		Ec. Pol. de Montréal
Perrier, Michel		Ec. Pol.
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Meslem, Nacim		INP de Grenoble
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Velswamy, Kirubakaran		National Inst. of Tech. Tiruchirappalli
T.K., Radhakrishnan		National Inst. of Tech. Tiruchirappalli
Natarajan, Sivakumaran		National Inst. of Tech. Tiruchirappalli
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Mairet, Francis		Inria
Muñoz-Tamayo, Rafael		INRIA
Bernard, Olivier		INRIA
WeKeyPT1		Seminar Room 1
Keynote We P (Keynote Session)		
Chair: Carlos-Hernandez, Salvador		Cinvestav, Unidad Saltillo
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Vargas, Alejandro		Inst. de Ingenieria UNAM
Vande Wouwer, Alain		Univ. de Mons
Moreno, Jaime A.		Univ. Nacional Autonoma de Mexico-UNAM
WeP01		Seminar Room 1
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Chair: Yue, Hong		Univ. of Strathclyde
Co-Chair: Mairet, Francis		Inria
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Pan, Tian-Hong		Jiangsu Univ.
Huang, Biao		Univ. of Alberta
Khare, Swanand		Univ. of Alberta
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Muñoz-Tamayo, Rafael		INRIA

Martinon, Pierre	Inria
Bougaran, Gael	Ifremer
Mairet, Francis	Inria
Bernard, Olivier	INRIA
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<i>Inner Approximations of Consistent Parameter Sets by Constraint Inversion and Mixed-Integer Programming</i> , pp. 321-326.	
Streif, Stefan	Otto-von-Guericke-Univ. Magdeburg
Strobel, Nadine	Otto-von-Guericke Univ. Magdeburg
Findeisen, Rolf	Otto-von-Guericke-Univ. Magdeburg
16:00-16:20	WeP01.4
<i>Model Development and Optimal Experimental Design of a Kinetically Controlled Synthesis System</i> , pp. 327-332.	
Yue, Hong	Univ. of Strathclyde
Halling, Peter	Univ. of Strathclyde
Yu, Hui	Univ. of Strathclyde
16:20-16:40	WeP01.5
<i>Multi-Criteria Optimization Based Experimental Design for Parameter Estimation of a Double Feedback Gene Switching Model</i> , pp. 333-337.	
Maheshwari, Vaibhav	National Univ. of Singapore
Kandpal, Manoj	National Univ. of Singapore
Samavedham, Lakshminarayanan	National Univ. of Singapore
16:40-17:00	WeP01.6
<i>Effect of Intra-Patient Variability on Personalized Parameters of Glucose-Insulin Dynamic Models for Exercise, Meal, and Insulin Interventions</i> , pp. 338-343.	
Balakrishnan, Naviyn Prabhu	National Univ. of Singapore
Samavedham, Lakshminarayanan	National Univ. of Singapore
Rangaiah, Gade Pandu	National Univ. of Singapore