

9th IFAC Symposium on Biological and Medical Systems (BMS 2015)

IFAC PapersOnline Volume 48, Issue 20

Berlin, Germany

31 August – 2 September 2015

Editors:

Berno Misgeld

Thomas Schauer

Olaf Simanski

ISBN: 978-1-5108-1929-0

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2015) by Elsevier Limited
All rights reserved.

Printed by Curran Associates, Inc. (2016)

For permission requests, please contact the publisher, Elsevier Limited
at the address below.

Elsevier Limited
360 Park Ave South
New York, NY 10010

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

ACCURACY AND PERFORMANCE OF CONTINUOUS GLUCOSE MONITORS IN ATHLETES	1
<i>Felicity Thomas, Christopher G. Pretty, Matthew Signal, J. Geoffrey Chase</i>	
COMPARISON OF PREDICTION MODELS FOR A DUAL-HORMONE ARTIFICIAL PANCREAS*	7
<i>Dimitri Boiroux, Vladimír Batora, Morten Hagdrup, Marián Tárník, Ján Murgaš, Signe Schmidt, Kirsten Nørgaard, Niels Kjølstad Poulsen, Henrik Madsen, John Bagterp Jørgensen</i>	
MODELLING INSULIN CLEARANCE AND DEGRADATION IN VERY PREMATURE INFANTS	13
<i>J. Dickson, C. Pretty, L. Fisk, J. Alsweller, J. G Chase</i>	
ADJUSTMENT OF SENSITIVE PARAMETERS OF A MATHEMATICAL MODEL OF GLUCOSE METABOLISM USING AN EVOLUTIONARY ALGORITHM*	19
<i>G. Quiroz, L. M. Torres-Treviño, C. P. Flores-Gutierrez, R. Femat</i>	
A PROPORTIONAL-DERIVATIVE ENDOGENOUS INSULIN SECRETION MODEL WITH AN ADAPTED GAUSS NEWTON APPROACH	24
<i>Nor Azlan Othman, Paul D. Docherty, Nor Salwa Damanhuri, J. Geoffrey Chase</i>	
INVESTIGATION OF 3D SPECT RECONSTRUCTION WITH MULTI-ENERGY PHOTON EMITTERS*	30
<i>G. Hesz, A. Szlávecz, K. Kovács, B. Benyó</i>	
IMPROVEMENT OF STATISTICAL SHAPE MODELS FOR SOFT TISSUES USING MODIFIED-COHERENT POINT DRIFT	36
<i>Mahdi Delavari, Amir Hossein Foruzan, Yen-Wei Chen</i>	
THE EIT FORWARD PROBLEM PARALLELIZED USING A COLORED PJDS MATRIX FORMAT	42
<i>Renato S. Tavares, Marcos S. G. Tsuzuki, Thiago C. Martins, Raul Gonzalez Lima</i>	
COMPUTATIONAL ASPECTS OF ELECTROCARDIOLOGICAL INVERSE SOLUTIONS	48
<i>G. Tuboly, G. Kozmann, I. Maros</i>	
STABLE 3D AIRWAYS REGISTRATION FROM SEGMENTED 3D CT IMAGES	52
<i>Leonardo I. Abe, Yuma Iwao, Rogério Y. Takimoto, Marcos S. G. Tsuzuki, Toshiyuki Gotoh, Seiichiro Kagei, Tae Iwasawa</i>	
AN EXPLICIT HYBRID MODEL PREDICTIVE CONTROL STRATEGY FOR INTRAVENOUS ANAESTHESIA	58
<i>Ioana Nascu, Richard Oberdieck, Efstratios N. Pistikopoulos</i>	
DRUG INTERACTION BETWEEN PROPOFOL AND REMIFENTANIL IN INDIVIDUALISED DRUG DELIVERY SYSTEMS	64
<i>D. Copot, R. De Keyser, C. Ionescu</i>	
SUPERVOXELS BASED GRAPH CUT FOR MEDICAL ORGAN SEGMENTATION	70
<i>Titinunt Kitrungratsakul, Yen-Wei Chen, Xian-Hua Han, Lanfen Lin</i>	
MODEL FREE CONTROL FOR TYPE-1 DIABETES: A FASTING-PHASE STUDY*	76
<i>Taghreed Mohammad Ridha, Claude H. Moog</i>	
THE PRECISION OF IDENTIFIED VARIABLES WITH RESPECT TO MULTIVARIABLE SET SIZE IN GLYCAEMIC DATA FROM A VIRTUAL TYPE 1 DIABETIC PATIENT	82
<i>Erin J. Mansell, Paul D. Docherty, J. Geoffrey Chase</i>	
AN EIGEN-ANALYSIS OF THE RELATIONSHIPS BETWEEN MODEL STRUCTURE, DISCRETE DATA, MEASUREMENT ERROR AND RESULTING PARAMETER IDENTIFICATION DISTRIBUTIONS	88
<i>Erin J. Mansell, Paul D. Docherty, J. Geoffrey Chase, Balázs Benyó</i>	
ARE HEPTODES BETTER THAN TETRODES FOR SPIKE SORTING?	94
<i>Christopher Doerr, Thomas Schanze</i>	
MOTIVATIONS FOR A CUSTOM APPARATUS FOR SONOPHORESIS EXPERIMENTATION	100
<i>J. Robertson, S Becker</i>	
IMMUNOGLOBULIN G (IGG) AND NEONATAL FC-RECEPTOR (FCRN) DYNAMICS IN IGG MULTIPLE MYELOMA*	106
<i>Felicity Kendrick, Stephen Harding, Michael J. Chappell, Neil D. Evans</i>	
CONTINUOUS GLUCOSE MONITORING: USING CGM TO GUIDE INSULIN THERAPY VIRTUAL TRIALS RESULTS	112
<i>Laurent Mombaerts, Felicity Thomas, Matthew Signal, Thomas Desaive, J. Geoffrey Chase</i>	

MODELLING INTESTINAL GLUCOSE ABSORPTION USING CONTINUOUS GLUCOSE MONITOR DATA	118
<i>J. Dickson, M. Signal, D. Harris, G. Marics, P. Weston, J. Harding, P. Tóth-Heyn, J. Hómlök, B. Benyó, J. G. Chase</i>	
SENSITIVITY OF MIXED SPATIAL EVOLUTIONARY GAMES - HAWK-DOVE STUDY	124
<i>Michał Krzeslak, Andrzej Swierniak</i>	
IMPACT OF THORAX EXCURSION ON BOUNDARY VOLTAGES IN EIT IMAGING	130
<i>B. Schullcke, B. Gong, S. Krueger-Ziolek, D. Redmond, J. G. Chase, K. Moeller</i>	
THE EFFECT OF RESPIRATORY MANOEUVRES FOR PATIENT-SPECIFIC RESPIRATORY MECHANICS MONITORING*	135
<i>Daniel P. Redmond, Yeong Shiong Chiew, J. Geoffrey Chase</i>	
PRELIMINARY STUDIES INTO ACOUSTIC SENSING OF LUNG RECRUITMENT DURING MECHANICAL VENTILATION	141
<i>Jade B. Lau Young, Geoffrey W. Rodgers, Geoffrey M. Shaw, J. Geoffrey Chase</i>	
CELL-BASED DESCRIPTION OF VENTRICULAR CONTRACTION IN A MODEL OF THE HUMAN CARDIOVASCULAR SYSTEM	147
<i>S. Kosta, J. Negroni, E. Lascano, P. C. Dauby</i>	
STRUCTURAL IDENTIFIABILITY AND INDISTINGUISHABILITY ANALYSES OF CARDIOVASCULAR FEEDBACK MODELS	153
<i>Tariq Abdulla, Neil D. Evans, James W. T. Yates, Teresa A. Collins, Jerome T. Mettetal, Michael J. Chappell</i>	
A BOLUS CALCULATOR BASED ON CONTINUOUS-DISCRETE UNSCENTED KALMAN FILTERING FOR TYPE 1 DIABETICS*	159
<i>Dimitri Boiroux, Tinna Björk Aradóttir, Morten Hagdrup, Niels Kjølstad Poulsen, Henrik Madsen, John Bagterp Jørgensen</i>	
BIFURCATION ANALYSIS FOR INTRACELLULAR REGULATION NETWORKS BASED ON THEIR CIRCUIT STRUCTURE	165
<i>Nicole E. Radde, Sonny Klaus</i>	
GREY-BOX MODELING OF EX-VIVO ISOLATED PERFUSED KIDNEY	171
<i>A. Aghababaei, M. Hexamer</i>	
IDENTIFICATION OF RESPIRATORY PARAMETERS IN FREQUENCY AND TIME DOMAIN WITH FORCED OSCILLATION TECHNIQUE	177
<i>Chuong Ngo, Alexander Kube, Karl Krüger, Thomas Vollmer, Stefan Winter, Steffen Leonhardt, Berno Misgeld</i>	
PULSATILE CEREBROSPINAL MODEL WITH CARDIO-VASCULAR COUPLING	183
<i>Berno J. E. Misgeld, Rajib Mondal, Steffen Leonhardt</i>	
THE USE OF DYNAMIC SYSTEMS BASED ON SHAPE MEMORY ALLOYS FOR THE TREATMENT OF NEUROMUSCULAR DISORDERS	189
<i>Simone Pittaccio, Lorenzo Garavaglia, Carlo Ceriotti, Francesca Passaretti</i>	
TOOL POSITION CONTROL OF AN UPPER LIMB EXOSKELETON FOR ROBOT-ASSISTED SURGERY*	195
<i>M. Hessinger, R. Müller, R. Werthschützky, P. P. Pott</i>	
HAPTIC USER INTERFACE FOR A TELEROBOTIC SYSTEM – DESIGN BASED ON A NETWORK MODEL	201
<i>Carsten Neupert, Sebastian Matich, Florian Klug, Andreas Kirschniak, Peter P. Pott, Roland Werthschützky</i>	
MODELLING AND CHARACTERISATION OF TWISTED STRING ACTUATION FOR USAGE IN ACTIVE KNEE ORTHOSES*	207
<i>R. Müller, M. Hessinger, H. F. Schlaak, P. P. Pott</i>	
MODELLING ADRENALINE SECRETION DURING COUNTERREGULATORY RESPONSE IN TYPE 1 DIABETES FOR IMPROVED HYPOGLYCAEMIA PREDICTION	213
<i>Vanessa Moscardó, Paolo Rossetti, F. Javier Ampudia-Blasco, Jorge Bondia</i>	
REAL-TIME INSULIN BOLUSING FOR UNANNOUNCED MEALS USING CGM MEASUREMENTS	219
<i>Kamuran Turksoy, Ali Cinar</i>	
A NONPARAMETRIC APPROACH FOR MODEL INDIVIDUALIZATION IN AN ARTIFICIAL PANCREAS*	225
<i>M. Messori, C. Toffanin, S. Del Favero, G. De Nicolao, C. Cobelli, L. Magni</i>	
PERFORMANCE ASSESSMENT OF ESTIMATION METHODS FOR CIR/ISF IN BOLUS CALCULATORS*	231
<i>Florian Reiterer, Harald Kirchsteiger, Andrea Assalone, Guido Freckmann, Luigi Del Re</i>	
A RUN-TO-RUN APPROACH TO ENHANCE CONTINUOUS GLUCOSE MONITOR ACCURACY BASED ON CONTINUOUS WEAR	237
<i>Joon Bok Lee, Eyal Dassau, Francis J. Doyle III</i>	

MATHEMATICAL MODELLING AND SENSITIVITY ANALYSIS OF MULTIPOLAR RADIOFREQUENCY ABLATION IN THE SPINE*	243
<i>Janine Matschek, Andreas Himmel, Friedrich Von Haeseler, Eric Bullinger, Martin Skalej, Rolf Findeisen</i>	
NOVEL DATA-DRIVEN STOCHASTIC MODEL FOR ANTIBODY DYNAMICS IN KIDNEY TRANSPLANTATION*	249
<i>Yan Zhang, David Lowe, David Briggs, Robert Higgins, Natasha Khovanova</i>	
MODELING OF IN VIVO TISSUE ELECTROPORATION AND CELLULAR UPTAKE ENHANCEMENT	255
<i>Bradley Boyd, Sid Becker</i>	
COMBINATION OF LIMITED MEASUREMENT INFORMATION AND MULTIDIMENSIONAL POPULATION BALANCE MODELS	261
<i>Robert Dürr, André Franz, Achim Kienle</i>	
CHANGE DETECTION IN THE DYNAMICS OF AN INTRACELLULAR PROTEIN SYNTHESIS MODEL USING NONLINEAR KALMAN FILTERING	267
<i>Gerasimos G. Rigatos, Efthymia G. Rigatou</i>	
REDUCING THE LENGTH OF MECHANICAL VENTILATION WITH SIGNIFICANCE: A CASE STUDY OF SAMPLE SIZE ESTIMATION TRIAL DESIGN USING MONTE-CARLO SIMULATION	273
<i>Yeong Shiong Chiew, Christopher Pretty, Elena Moltchanova, Carl Scarrott, Daniel Redmond, Geoffrey M. Shaw, J. Geoffrey Chase</i>	
MODEL-BASED DECISION SUPPORT FOR PRESSURE SUPPORT MECHANICAL VENTILATION - IMPLEMENTATION OF PHYSIOLOGICAL AND CLINICAL PREFERENCE MODELS	279
<i>Dan S. Karbing, Sebastian Larraza, Nilanjan Dey, Jakob B. Jensen, Robert Winding, Stephen E. Rees</i>	
RELATIONSHIP BETWEEN STROKE VOLUME AND PULSE WAVE VELOCITY	285
<i>Shun Kamoï, Christopher Pretty, Yeong Shiong Chiew, Shaun Davidson, Antoine Pironet, Thomas Desaive, Geoffrey M Shaw, J. Geoffrey Chase</i>	
MODEL-BASED STRESSED BLOOD VOLUME IS AN INDEX OF FLUID RESPONSIVENESS*	291
<i>Antoine Pironet, Pierre C. Dauby, J. Geoffrey Chase, Shun Kamoï, Nathalie Janssen, Philippe Morimont, Bernard Lambermont, Thomas Desaive</i>	
INTERPOLATION WITHIN A RECRUITMENT MANOEUVRE USING A NON-LINEAR AUTOREGRESSIVE MODEL OF PULMONARY MECHANICS	297
<i>R. Langdon, P. D. Docherty, Y. S. Chiew, Knut Möller, J. G. Chase</i>	
AN ADAPTIVE LOW-DIMENSIONAL CONTROL FOR A HYBRID NEUROPROSTHESIS	303
<i>Naji A. Alibeji, Nicholas A. Kirsch, Nitin Sharma</i>	
THE DESIGN, DEVELOPMENT AND EVALUATION OF AN ARRAY-BASED FES SYSTEM WITH AUTOMATED SETUP FOR THE CORRECTION OF DROP FOOT	309
<i>Laurence P. Kenney, Ben W. Heller, Anthony T. Barker, Mark L. Reeves, T. Jamie Healey, Timothy R. Good, Glen Cooper, Ning Sha, Sarah Prenton, David Howard</i>	
MULTIVARIABLE CONTROL OF FOOT MOTION DURING GAIT BY PERONEAL NERVE STIMULATION VIA TWO SKIN ELECTRODES*	315
<i>Thomas Seel, Markus Valtin, Cordula Werner, Thomas Schauer</i>	
FEASIBILITY OF USING NEURO-FUZZY SUBJECT-SPECIFIC MODELS FOR FUNCTIONAL ELECTRICAL STIMULATION INDUCED HAND MOVEMENTS	321
<i>Eukene Imatz, Eloy Irigoyen, David Valencia, Thierry Keller</i>	
CONTROL SYSTEM FOR NEURO-PROSTHESES INTEGRATING INDUCED AND VOLITIONAL EFFORT*	327
<i>E. Ambrosini, T. Schauer, C. Klauer, A. Pedrocchi, G. Ferrigno, S. Ferrante</i>	
PRELIMINARY DEVELOPMENTS TOWARDS CLOSED-LOOP FES-ASSISTANCE OF POSTURE AND GAIT	333
<i>Ch. Azevedo Coste, B. Sijobert, J. Froger, Ch. Fattal</i>	
OPTIMIZATION OF A STIMULATION TRAIN BASED ON A PREDICTIVE MODEL OF MUSCLE FORCE AND FATIGUE	338
<i>Brian D. Doll, Nicholas A. Kirsch, Nitin Sharma</i>	
ELBOW CONTROL USING FUNCTIONAL ELECTRICAL STIMULATION: AN EXPERIMENTAL COMPARISON OF DIFFERENT CONTROL STRATEGIES	343
<i>Antonio P. L. Bo, Herlandson C. Moura</i>	
A NOVEL APPROACH FOR DERIVING A PATIENT SPECIFIC BEAT-TO-BEAT ESTIMATE OF THE CARDIAC DRIVER FUNCTION	348
<i>Shaun M. Davidson, D. Oliver Kannangara, Chris G. Pretty, Shun Kamoï, Thomas Desaive, J. Geoffrey Chase</i>	

IMPLEMENTATION OF A NON-LINEAR AUTOREGRESSIVE MODEL WITH MODIFIED GAUSS-NEWTON PARAMETER IDENTIFICATION TO DETERMINE PULMONARY MECHANICS OF RESPIRATORY PATIENTS THAT ARE INTERMITTENTLY RESISTING VENTILATOR FLOW PATTERNS	354
<i>R. Langdon, P. D. Docherty, Y. S. Chiew, N. S. Damanhuri, J. G. Chase</i>	
INVESTIGATING THE EFFECTS OF TEMPERATURE ON PHOTOPLETHYSMOGRAPHY	360
<i>Musabbir Khan, Christopher G. Pretty, Alexander C. Amies, Rodney Elliott, Geoffrey M. Shaw, J. Geoffrey Chase</i>	
PARAMETER IDENTIFICATION METHODS IN A MODEL OF THE CARDIOVASCULAR SYSTEM*	366
<i>Antoine Pironet, Thomas Desaive, Pierre C. Dauby, J. Geoffrey Chase, Paul D. Docherty</i>	
INSULIN SENSITIVITY AS A MODEL-BASED MARKER FOR SEPSIS DIAGNOSIS	372
<i>Fatanah M. Suhaimi, J. Geoffrey Chase, Christopher G. Pretty, Geoffrey M. Shaw, Normy Razak, Ummu Jamaludin</i>	
DESIGN OF AN ULTRASOUND SIMULATOR WITH PROBE POSE TRACKING AND MEDICAL DATASET PROCESSING AND VISUALIZATION	377
<i>Saverio Farsoni, Luca Astolfi, Marcello Bonfè, Savino Spadaro</i>	
USING NORMALISED COMPRESSION DISTANCE TO IDENTIFY DIFFERENT PROFILING DAYS IN TYPE 1 DIABETIC PATIENTS*	383
<i>Iván Contreras, Josep Vehi</i>	
IDENTIFICATION OF CONDUCTIVE FIBER PARAMETERS WITH TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION SIGNAL USING RLS ALGORITHM	389
<i>Manuel Schimmack, Paolo Mercorelli</i>	
ANGIOGENESIS IN PREVASCULARIZED BIOMATERIALS: AN IN SILICO STUDY	395
<i>Elif Seyma Bayrak, Nan Xiao, Sami I. Somo, Banu Akar, Hamidreza Mehdizadeh, Eric M. Brey, Ali Cinar</i>	
IDENTIFYING PRESSURE DEPENDENT ELASTANCE IN LUNG MECHANICS WITH REDUCED INFLUENCE OF UNMODELLED EFFECTS	401
<i>Bernhard Laufer, Paul D. Docherty, Yeong Shiong Chiew, Knut Möller, J. Geoffrey Chase</i>	
APPLICATION OF A META-ANALYSIS OF AORTIC GEOMETRY TO THE GENERATION OF A COMPLIANT PHANTOM FOR USE IN PARTICLE IMAGE VELOCIMETRY EXPERIMENTATION	407
<i>Larissa Huetter, Patrick H. Geoghegan, Paul D. Docherty, Milad Soltanipour Lazarjan, Don Clucas, Mark Jermy</i>	
NMB TARGET LEVEL TRACKING VIA AN OPTIMIZATION BASED CONTROL LAW	413
<i>Juliana Almeida, Teresa Mendonça, Paula Rocha, Luís Rodrigues</i>	
IMPROVING EIT IMAGE RECONSTRUCTION WITH CLUSTERING	418
<i>B. Gong, B. Schullcke, S. Krueger-Ziolek, K. Moeller</i>	
INERTIAL SENSOR AND CLUSTER ANALYSIS FOR DISCRIMINATING AGILITY RUN TECHNIQUE	423
<i>Ryan S. McGinnis, Stephen M. Cain, Steven P. Davidson, Rachel V. Vitali, Scott G. McLean, Noel C. Perkins</i>	
A MATHEMATICAL MODEL OF THE ACHILLES TENDON IN HUMANS	429
<i>N. Chatzistefani, M. J. Chappell, C. Hutchinson, N. D. Evans</i>	
SIMULATIVE ANALYSIS OF JOINT LOADING DURING LEG PRESS EXERCISE FOR CONTROL APPLICATIONS	435
<i>Melanie Kolditz, Thivaharan Albin, Dirk Abel, Alessandro Fasse, Gert-Peter Brüggemann, Kirsten Albracht</i>	
MEASURES OF DYNAMIC BALANCE UNDER PASSIVE VERTICAL EXCITATION	441
<i>Neil D. Evans, Stana Zivanovic, Colin Caprani, Martine J. Barons</i>	
MACHINE LEARNING METHODS OF THE BERLIN BRAIN-COMPUTER INTERFACE	447
<i>Carmen Vidaurre, Claudia Sannelli, Wojciech Samek, Sven Dähne, Klaus-Robert Müller</i>	
EXTRACTING HIGH FREQUENCY OSCILLATORY BRAIN SIGNALS FROM MAGNETOENCEPHALOGRAPHIC RECORDINGS	453
<i>Tilmann H. Sander, Heriberto Zavala-Fernandez, Martin Burghoff, Yoshinori Uchikawa, Lutz Trahms</i>	
OPRA: A FAST ON-LINE SIGNAL QUALITY ESTIMATOR FOR PULSATILE SIGNALS	459
<i>Maik Pflugradt, Benjamin Moeller, Reinhold Orglmeister</i>	
THE EVOLUTION OF NEURAL PROCESSES WITHIN THE SCOPE OF MULTIMODAL NETWORK ANALYSIS	465
<i>Galina Ivanova, Till Hande, Clemens Seibold, Helen Perkunder, Max Schreiber</i>	
MACHINE LEARNING FOR PREDICTIVE MODELLING BASED ON SMALL DATA IN BIOMEDICAL ENGINEERING	469
<i>Torgyn Shaikhina, Dave Lowe, Sunil Daga, David Briggs, Robert Higgins, Natasha Khovanova</i>	
REGULATION OF ADAPTIVE HUMAN-MACHINE SYSTEM BASED ON FUZZY INFERENCE PETRI NET*	475
<i>Jiajun Xia, Jianhua Zhang, Rubin Wang</i>	

A BAYESIAN APPROACH TO MODEL-DEVELOPMENT: AUTOMATIC LEARNING FOR TUNING PREDICTIVE PERFORMANCE	481
<i>Logan Ward, Steen Andreassen</i>	
A COMPARISON OF CLASSIFICATION ALGORITHMS FOR BRAIN COMPUTER INTERFACE IN DRUG CRAVING TREATMENT	487
<i>M. Mazzoleni, F. Previdi</i>	
A PRELIMINARY STUDY ON CLEANING UP ERRONEOUS DATA AND FILLING IN MISSING VALUES IN A MEDICAL RECORD*	493
<i>Er-Wei Bai, Hans Johnson, Weiyu Xu, Mathews Jacob</i>	
IN SILICO EVALUATION OF GAS TRANSFER ESTIMATION DURING EXTRACORPOREAL MEMBRANE OXYGENATION.....	499
<i>C. Brendle, K.-F. Hackmack, J. Kühn, M. N. Wardeh, R. Kopp, R. Rossaint, A. Stollenwerk, S. Kowalewski, B. Misgeld, S. Leonhardt, M. Walter</i>	
ASSESSING RESPIRATORY MECHANICS OF REVERSE-TRIGGERED BREATHING CYCLES - CASE STUDY OF TWO MECHANICALLY VENTILATED PATIENTS	505
<i>Vincent Major, Corbett Simon, Daniel Redmond, Alex Beatson, Daniel Glassenbury, Yeong Shiong Chiew, Christopher Pretty, Thomas Desaive, Akos Szlavecz, Balazs Benyo, Geoffrey M Shaw, J Geoffrey Chase</i>	
NEW APPROACH FOR THE CONTROL OF ANESTHESIA BASED ON DYNAMICS DECOUPLING	511
<i>Said Zabi, Isabelle Queinnee, Sophie Tarbouriech, Germain Garcia, Michel Mazerolles</i>	
POLICY ITERATION ALGORITHM FOR THE CONTROL OF OXYGENATION	517
<i>Anake Pomprapa, Milod Mir Wais, Marian Walter, Berno J. E. Misgeld, Steffen Leonhardt</i>	
ITERATIVE LEARNING CONTROL: AN EXAMPLE FOR MECHANICAL VENTILATED PATIENTS	523
<i>M. Scheel, A. Berndt, O. Simanski</i>	
PARTICLE FILTER ALGORITHMS FOR IDENTIFICATION OF MINIMALLY PARAMETRIZED WIENER MODELS OF DRUG ADMINISTRATION EFFECT*	528
<i>Olov Rosén, Alexander Medvedev, Margarida M. Silva</i>	
CHEMOTHERAPY OPTIMIZATION IN LEUKEMIA: SELECTING THE RIGHT MATHEMATICAL MODELS FOR THE RIGHT BIOLOGICAL PROCESSES*	534
<i>María Fuentes-Garí, Ruth Misener, Michael C. Georgiadis, Margaritis Kostoglou, Nicki Panoskaltzis, Efstratios N. Pistikopoulos, Athanasios Mantalaris</i>	
AUTOMATIC CONTROL OF THE DEPTH OF ANESTHESIA - CLINICAL RESULTS.....	540
<i>Filipa Nunes Nogueira, Teresa Mendonca, Paula Rocha</i>	
A GAIN-SCHEDULED PID CONTROLLER FOR PROPOFOL DOSING IN ANESTHESIA	545
<i>F. Padula, C. Ionescu, N. Latronico, M. Paltenghi, A. Visioli, G. Vivacqua</i>	
CRITICALLY SAFE GENERAL ANAESTHESIA IN CLOSED LOOP: AVAILABILITY AND CHALLENGES	551
<i>Clara M. Ionescu, Teresa F. Mendonca, Levente Kovacs</i>	
OPTIMAL INITIAL STATE FOR FAST PARAMETER ESTIMATION IN NONLINEAR DYNAMICAL SYSTEMS	557
<i>Qiaochu Li, Carine Jauberthie, Lillianne Denis-Vidal, Zohra Cherfi</i>	
STRUCTURAL IDENTIFIABILITY IN MIXED-EFFECTS MODELS: TWO DIFFERENT APPROACHES*.....	563
<i>David Janczén, Mats Jirstrand, Neil D. Evans, Michael Chappell</i>	
CONTINUOUS CARDIAC OUTPUT ESTIMATION UNDER LEFT VENTRICULAR ASSISTANCE	569
<i>Daniel Rüschen, Miriam Rimke, Jonas Gesenhues, Steffen Leonhardt, Marian Walter</i>	
AN EVOLUTIONARY-TYPE MODEL FOR TUMOR IMMUNOTHERAPY	575
<i>A. I. Doban, M. Lazar</i>	
CARDIAC MODELING: IDENTIFICATION OF SUBJECT SPECIFIC LEFT-VENTRICULAR ISOVOLUMIC PRESSURE CURVES.....	581
<i>Jonas Gesenhues, Marc Hein, Thivaharan Albin, Rolf Rossaint, Dirk Abel</i>	
Author Index	