

CURRICULUM VITAE
MARIANTHI G. IERAPETRITOU

Department of Chemical & Biochemical Engineering, RUTGERS UNIVERSITY
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URL: <http://sol.rutgers.edu/staff/mariant>

EDUCATION

- 1991-1995 Ph. D., Chemical Engineering Department, *Imperial College, London, UK*.
Faculty Advisor: Prof. Efstratios Pistikopoulos
Thesis Topic: "Optimization Approaches for Process Engineering Problems under Uncertainty"
- 1986-1991 Diploma (Summa cum Laude), Chemical Engineering Department, *NTUA, Greece*
Faculty Advisor: Prof. Z. Maroulis
Thesis Topic: "Synthesis of Heat Exchanger Network"

PROFESIONAL EXPERIENCE

- 2005-2006 Visiting Associate Professor
*Department of Chemical Engineering, MIT
Cambridge, MA*
- 2004-present Associate Professor
*Department of Chemical & Biochemical Engineering Rutgers University,
Piscataway, NJ*
- 1998-2004 Assistant Professor
*Department of Chemical & Biochemical Engineering Rutgers University,
Piscataway, NJ*
- 1996-1998 Post Doctoral Research Associate
Department of Chemical Engineering, Princeton University, Princeton, NJ.
- 1995-1996 Post Doctoral Research Associate
Center for Process Systems Engineering, Imperial College, London, UK

RESEARCH INTERESTS

Computer-Aided Process and Product Design, Process Planning, Scheduling and Supply Chain Management, Reactive Scheduling under Uncertainty, Uncertainty Considerations in Process Design and Operations, Decomposition based Techniques for Multi-scale Systems, Reaction Model Reduction, Optimization of Complex Systems, Modeling and Optimization of Metabolic Networks, Improved Hepatocyte Functionality for Bioartificial Liver applications.

ACCOMPLISHMENTS

HONORS –AWARDS

- 2004 Board of Trustees Research Award for Scholarly Excellence, Rutgers University
- 2001-2002 Teaching Excellence Award from Chemical Engineering Department, Rutgers University
- 2000-2004 NSF CAREER Award, CTS 99-83406

1992-1994	Postgraduate Grant, Commission of European Community (ERB CHBI CT 93 0484)
1991-1992	Research/Teaching Fellowship, Imperial College
1986-1991	Undergraduate Fellowship, National Scholarship Foundation of Greece Award
1990-1991	Tiftixis Foundation Award, Athens Greece
1991	Economou Award for Academic Excellence, Athens, Greece
1991	Best Student of Chemical Engineering Department Award, National Technical University of Athens

RESEARCH GRANTS

1. NSF Graduate Research Supplement 2008-2009 (46,871) (single PI)
2. NIH Grant RO1 2008-2011 (\$1,200,000) Bioinformatics Analysis of Control Mechanisms of Hypermetabolism (co-PI with Ioannis Androulakis (PI), Charles Roth and Francois Berthiaume)
3. NSF Award 2007-1010 (\$316,317) “Reactive Flow Simulation Using An Adaptive Chemistry Framework” (co-PI with Ioannis Androulakis (PI)).
4. NSF Award 2006-2009 (\$399,572) “Systematic Mathematical Strategies for Stochastic Modeling and Uncertainty in Production Planning and Scheduling” (single PI).
5. Office of Naval Research 2006-2009 (\$270,782) “Efficient Characterization of Combustion Fuels” (PI, co-PI Ioannis Androulakis)
6. National Center of Excellence for Environmental Bioinformatics and Computational Toxicology – EPA 2005-2010 (\$4,500,000) (co-PI with William Welsh (PI), Panos Georgopoulos, from Robert Wood Johnson Medical School, Ioannis Androulakis from Rutgers University and Herschel Rabitz and Chris Floudas from Princeton University)
7. Metabolic Engineering – National Science Foundation 2005-2008 (\$998,659) “Molecular Network Controls of Hepatocyte Metabolism” (co-PI with Charles Roth (PI), Martin Yarmush and Ioannis Androulakis from Rutgers University)
8. Quantitative Systems Biology – National Science Foundation 2004-2007 (\$500,000) “Experimental and Computational Studies to Optimize Hepatocyte Function” (PI with Charles Roth and Martin Yarmush from Rutgers University).
9. NSERC Strategic Grant 2004-2007 (\$300,000) “Innovative Approach to the Optimization of Integrated Newsprint Mill Dynamic Operations” (Co-PI with Professor Paul Stuart from Ecole Polytechnique in Montreal).
10. Office of Naval Research 2003-2006 (\$213,000) “Development of an Adaptive Chemistry Model for Combustion Systems Considering Micromixing Effects” (single PI)
11. NSF Award 2002-2005 (\$200,000) “Design of Flexible Reaction Models” (single PI)
12. CAREER NSF Award 2000-2004 (\$308,803) “Process Operations: Decision-Making under Uncertainty” (single PI).
13. Strategic Resource and Opportunity Analysis (SROA) (\$80,000), Rutgers University “The Laboratory for Multiphase Reactive Flow (LMRF): Integrating Information Technology and Experiments for Maintaining Technological Superiority in Homeland Security, Energy Generation, and the Environment” (Co-PI)
14. ACS-PRF Type G "Starter" Grant (\$25,000) “Incorporation of Uncertainty into Complex Kinetic Mechanisms” (single PI).
15. New Jersey Space Consortium Grant (NASA) (\$25,000) “Order Reduction of Complex Kinetic Mechanisms Considering Micro-mixing Effects” (single PI).

16. NSF International Division Grant, 0071505 (\$13,800) “Multiple Inputs - Multiple Outputs (MIMO) Control Design” (single PI).
17. Grant from BOC Gases (\$43,000) to perform research on novel optimization approaches for design under uncertainty.
18. Grant from Honeywell Hi-Spec Solutions (\$25,000) to investigate the application of continuous time formulation for refinery scheduling.
19. Grant for Union Carbide (\$5,000) to study the optimization of Amerchol Plant operations.
20. Grant from Rutgers University (co-PI along with Professors Narashiman, Khinast, Glasser, and Moghe) to modernize the graduate curricula in Chemical Engineering (\$48,000).
21. Grant from Rutgers University (co-PI along with Professors Lehman, Norris, Denda, and Buttner) to advance instructional technology for engineering education by introducing new computer-based learning resources (\$112,000).
22. Together with Professor Manish Parashar from Electrical Engineering Department lead the Unisys initiative to establish one of the three Nationwide Excellence Centers equipped with initial computing network (\$278,000).
23. Grant from Rutgers University to initialize the research effort towards the application of optimization methods in environmental treatment systems (\$1,500).
24. Grant from Rutgers University to initialize the research effort towards the consideration of uncertainty into complex kinetic models (\$1,500).
25. Undergraduate Research Fellowship to support a student to do research in the area of scheduling of batch processes (\$1,500).
26. Undergraduate Research Fellowship to support a student to do research in the area of refinery scheduling (\$1,500).

TEACHING ACTIVITIES

- | | |
|--------------|--|
| 2004-present | Undergraduate Executive Officer |
| 2004 fall | Freshmen Orientation Lectures |
| 2004 spring | Senior Control Course |
| 2004 spring | Graduate level Course: Modeling and Optimization of Process Design and Operations |
| 1998-present | Directed Research: 7 undergraduates and 9 graduate students |
| 2000-2002.1 | Fall Senior Level Undergraduate Course: Design of Separation Processes |
| 2001-2002 | Fall Graduate level Course: Analytical Methods in Chemical and Biochemical Engineering |
| 1999-2000 | Spring Graduate level Course: Advanced Transport Phenomena |
| 1999 | Fall Graduate level Course: Process Systems Engineering |
| 1996-1998 | 3 Undergraduate Theses Supervisor, Princeton University |

MENTORING GRADUATE & UNDERGRADUATE STUDENTS AND POSTDOCTORAL SCHOLARS

Postdoctoral Scholars Supervised

- George Saharidis (03/2007- present)
Research Area: Decomposition Based Optimization of Complex Systems
- Zhenya Jia (01/2007 – present)
Research Area: Modeling, Optimization and Control of Pharmaceutical Systems
- Vidya Iyer (06/2007 – present)

Research Area: Metabolic Engineering of Liver Cell Cultures

Antoine Berton (03/2005 – 03/2006)

Research Area: Optimization and Control of Pulp and Paper Processes

École Polytechnique. Montréal

Avinash Sirdeshpande (9/1999-3/2001)

Research Area: Reduction of Complex Kinetic Models

Current Affiliation: BOC Gases

Current Graduate Students Advised/Co-Advised

Mehmet Orman Since September 2007 (co-advised by Prof. M.L. Yarmush)

Ph.D expected May 2012

Thesis Title Stem Cell Differentiation to Hepatocytes

Yijie Gao Since September 2007 (co-advised by Prof. F. Muzzio)

Ph.D expected May 2012

Thesis Title Modeling of Continuous Powder Mixing

Kai He Since September 2006 (co-advised by Prof. I.P. Androulakis)

Ph.D. expected May 2011

Thesis Title Efficient Integration of Detailed Chemistry in Complex Flow
Calculations of Combustion Systems

Beverly Smith Since September 2006

Ph.D. expected May 2009

Thesis Title Robust Portfolio Optimization

Zukui Li Since January 2006

Ph.D. expected May 2010.

Thesis Title Uncertainty in Process Operations

Hong Yang Since January 2005 (co-advised by Prof. C.M.Roth)

Ph.D. expected May 2009.

Thesis Title: Metabolic Control Analysis of Hepatocytes

Past Graduate Students Advised/Co-Advised

Eddie Davis Ph.D. August 2008

Thesis Title: Modeling and Optimization of Process Engineering Problems
Containing Black-Box Systems and Noise

Patricia Portillo Ph.D. May 2008 (co-advised by Prof. F. Muzzio)

Thesis Title: Modeling, Control and Optimization of Continuous Pharmaceutical
Processes

Steve Guzikowski Masters January 2008 (co-advised by Prof. C.M.Roth)

Thesis Title: Novel tools towards Improving Hepatocyte Function

Nripen Sharma Ph.D. January 2007. (co-advised by Prof. M.L.Yarmush)

Thesis Title: Metabolic Engineering of Stem Cell Differentiation

Tien Phong Huynh Masters October 2007 (co-advised by Prof. I.P. Androulakis)

Thesis Title Characterization of Complex Fuels for Combustion Applications

Zhenya Jia, Ph.D. September 2005.

Thesis Title: Uncertainty Analysis of Scheduling and Planning Problems.

Ipsita Banerjee Ph.D. May 2005.

Thesis Title: Multiscale Framework for Coupling Micromixing Phenomena and
Detailed Kinetic Networks for Combustion Systems in a Dynamic
Environment.

Dan Wu Ph.D. May 2005.
Thesis Title: Unified Frameworks for the Optimal Production Planning and Scheduling.

Vishal Goyal Ph.D. Jan 2005.
Thesis Title: Design and Synthesis of Flexible Module-Based Systems.

Aditya Bindal Ph.D. October 2004 (co-advised by Prof. J. Khinast)
Thesis Title: Optimization and Stability Analysis of Multidimensional Reacting Systems

Ian Glasgow Masters Dec 2005 (co-advised by Prof. P. Stuart Ecole Polytechnique de Montreal, Montreal, Canada)
Thesis Title: Optimization Applications in Pulp Paper Process Industry

Suhrid Balakrishnan Masters September 2002 (Co-advised with Prof. P. Georgopoulos).
Thesis Title: Uncertainty considerations in Atmospheric Systems

Jeetmanyu Vin Masters July 2000
Thesis Title: Short Term Scheduling of Batch Plants under Uncertainty.

Member of PhD Committee

Kiran Vyakaranam Ph.D. Expected May 2009 (Primary Advisor: Prof. Kokini, Food Science, Rutgers University)
Thesis Title: Air Bubble Dynamics during Continuous Mixing of Viscous Liquids

Bharani Kumar Ashokan Ph.D. October 2008 (Primary Advisor: Prof. Kokini, Food Science, Rutgers University)
Thesis Title: Developing Methods for Design and Scale-up of Continuous Mixers through 3D Numerical Simulation of Flow and Mixing

Marcos Llusa Ph.D. May 2008 (Primary Advisor: Prof. F. Muzzio)
Thesis Title: Effect of shear mixing on the agglomeration of cohesive granular material and the lubrication of granular blends

Jeng-Shiou Chen Ph.D. December 2007 (Primary Advisor: Prof. J. Khinast)
Thesis Title: Transition Metal Catalysts for Suzuki Couplings and Chiral Hydrogenations: Kinetic Study, Computational Model and Synthesis

Paloma Pimenta Since 2000 (Primary Advisor: Prof. H. Pedersen)
Thesis Title: Surfactant Solutions and Nanoparticle Suspensions
Ph.D. expected June 2008

Thomas W Cochran Ph.D. June 2005 (Primary Advisor: Prof. Y. Chiew)
Thesis Title: Molecular Thermodynamic Modeling of Amorphous Solid Phase of Chain Molecules

Xue Liu Ph.D. January 2005 (Primary Advisor: Prof. B. Glasser)
Thesis Title: Instability and Segregation in Bounded Gas-Particle Fluidized beds

Athanas Koynov Ph.D. May 2005 (Primary Advisor: Prof. J. Khinast).
Thesis Title: Computational Studies of Bubble Columns

Qinghua Wang Ph.D. September 2002 (Mechanical Engineering Department, Rutgers University, Primary Advisor: Prof. Y. Jaluria).
Thesis Title: Instability and Heat Transfer in Mixed Convection Flow in a Horizontal Duct with Application to Cooling of Electronic Systems

Joe Kukura II Thesis Title:	Ph.D. July 2003 (Primary Advisor: Prof. F. Muzzio). Computational Investigation of Laminar Mixing in Pharmaceutical Tanks
Christine Switzer Thesis Title:	Ph.D. May 2003 (Primary Advisor: Prof. D. Kosson). Soil Vapor Extraction and Air Sparging Remediation of Trichlorethylene Contamination at the Savannah River Site
Elizabeth Shen Thesis Title:	Ph.D. 2001 (Primary Advisor: Prof. B. Narasimhan). Microphase Separation in Bioerodible Polyanhydrides for Controlled Drug Release
Tongdan Jin Thesis Title:	Ph.D. 2001 (Industrial Engineering Department, Rutgers University, Primary Advisor: Prof. D. Coit). System Reliability Assessment and Optimization Considering Estimation Uncertainty
Stephano Cerbelli Thesis Title:	Ph.D. 2000 (Primary Advisor: Prof. F. Muzzio). The Topology of Mixing Structures in two-dimensional Periodic and Aperiodic Chaotic Flows

Undergraduate Students Advised

Nikisha Shah, Centralized – Decentralized Optimization for Refinery Scheduling, Slade Scholar honor student, Fall 2007- Spring 2008.

Roentgen Hau, Examining the Content Uniformity of Powder Blends Using Near-Infrared Spectroscopy, Slade Scholar honor student, Fall 2007-Spring 2008.

Lily Cheung Chang, Cell Growth and Urea Production in Hepg2 Cells under Different Insulin and Glucose Concentration in the Media, Slade Scholar honor student, Fall 2007-Spring 2008

Sarah Abdelsayed, Optimization of supplementation for hepatocyte utilization in Bioartificial liver devices, Fall 2007.

Timothy Lin, Understanding of acetaminophen (APAP) metabolism and induced-hepatotoxicity, Fall 2005 –Spring 2006

Adebola Ogunniyi, Development of Response Surfaces for Optimization of Noisy Black-Box Systems, Fall 2004-Spring 2005

Yuliana Lugo, Application of MATLAB's model predictive control toolbox to mixing processes, Summer 2006, RISE student.

Fred Bidrawn, Sensitivity analysis for Mixed Integer Linear Programming problems, Fall 2004.

Victor Low, Reduction of combustion chemistry, Spring- Summer 2007.

Salah Issa, Investigating the performance of hepatocyte cultures, Fall 2005- Spring 2006.

Enrique Coronado, Short-term Scheduling of Pharmaceutical Plants, Fall 2002.

Kimberly Ward, Design of a Graphical Interface for Scheduling of Batch Plants, Fall 2000, Spring 2001.

Melissa Gregory, Integrating Energy Price Forecasting with Design Optimization of Energy Intensive Plants, Spring 2001.

Regina Galie, Scheduling of Refinery Operations, Fall 2001.

Miral Parikh Design and Optimization of Air Separation Plant, SUPER Douglass College of women Student, Spring 2001

Rinku Parikh, Model Reduction of Complex Kinetic Networks, Slade Scholar honor student-Fall 2000 – Spring 2002.

Claire Pinto, Short-term Scheduling of Multi-Product Batch Plants, Spring 2000.
 Nisha Batra, Uncertainty Considerations In Atmospheric Kinetic Modeling, Spring 1999.
 Pauline Voung, Flexibility Evaluation of Batch Processes. Fall 1998.
 Grace Zougheib, Modeling of Short-term Scheduling of Batch Plants, Fall 1998.

UNIVERSITY SERVICE

Undergraduate Executive Officer	2004-present
Advisor Society of Women Engineers	2007-2008
Member of School of Engineering Rules of Procedure Committee	2003-2004
Chair of Graduate Admissions Committee	2001-2002
All Class Advisor	2000-present
Departmental Web Site Coordinator	2000-present
Member of RUTCOR (Rutgers Center of Operations Research)	
Participation in program SUPER of Douglass College of women.	
Chair, School of Engineering Student Discipline Committee	2000-present
Member of the Departmental Admissions and Recruiting Committee	1998-2004
Member of the Departmental Qualifying Committee	1998-1999
Member of the Departmental Computing Committee	1998-1999
Member of the Departmental Promotional Material Committee	1998-1999
Junior Advisor	1999-2000

PROFESSIONAL ACTIVITIES

Conference Organizer

FOCAPO (Foundations of Computer Aided Process Operations) Conference, 2008

Membership in Professional Societies

Elected AIChE Computing and Systems Technology (CAST) director 2008-2010

Elected as a Trustee of the CACHE, the leading organization within the Chemical Engineering community promoting computational applications

Member of *American Institute of Chemical Engineers* (AIChE)

Member of *Institute of Operations Research and Management Sciences* (INFORMS)

Member of *Society of Industrial and Applied Mathematics* (SIAM)

AIChE Computing and Systems Technology (CAST) Nominated and elected 10a (Systems and Process Design) Division Director for 2006

Conference Organizing Committees

Organizing Committee: ESCAPE 16, ESCAPE 17, PSE 2006, ESCAPE 18, Annual Meeting of Creek Chemical Engineers.

Chairing of Technical Meetings

Supply Chain and Logistics Optimization AIChE Meeting, November 2007, Salt Lake City, UT (Chair)

Design Analysis and Operations Under Uncertainty, AIChE Meeting, November 2007, Salt Lake City, UT (Chair)

Planning and Scheduling, AIChE Meeting, November 2007, Salt Lake City, UT (co Chair)

Uncertainty in Process Design and Operations AIChE Meeting, November 2006, San Francisco, CA (Chair).

Advances in Optimization I &II AIChE Annual Meeting, November 2005, Cincinnati, OH (Chair).

Process Design and Operation Under Uncertainty, AIChE Annual Meeting, November 2005, Cincinnati, OH (Chair).

Computing Methods for CAPE, ESCAPE 15, May 2005, Barcelona, Spain (Chair).

Supply Chain Management I, AIChE Annual Meeting, November 2004, Austin, TX (Vice-Chair).

Supply Chain Management II, AIChE Annual Meeting, November 2004, Austin, TX (Vice-Chair).

Chair for Enabling Technologies in Product and Process Design: Operations, FOCAPD, Princeton, NJ, July 2004

Manufacturing and Process Operations, ESCAPE 14, Lisbon, May 2004 (Chair)

Enterprise Wide Optimization, AIChE Annual Meeting, November 2003, San Francisco, CA (Chair).

Modeling and Computation for Process Design, AIChE Annual Meeting, November 2002, Indianapolis, IN (Vice Chair).

Planning and Scheduling, AIChE Annual Meeting, November 2002, Indianapolis, IN (Vice Chair).

Flexibility and Operability in Design, AIChE Annual Meeting, November 2001, Reno, NV (Chair).

Applications of System Analysis Tools in Information Processing, AIChE Annual Meeting, November 2001, Reno, NV (Vice Chair).

Applications of Scheduling and Planning in Batch Processes, AIChE Annual Meeting, November 2001, Reno, NV (Chair).

Process Operations, 7th International Symposium on Process Systems Engineering (PSE) 2000, Colorado (Chair).

Planning and Scheduling AIChE Annual Meeting, November 2000, Los Angeles, CA (Chair).

Design of Reactive Separation Systems, AIChE Annual Meeting, November 2000, Los Angeles, CA (Chair).

Planning, Scheduling and Supply Chain Management, AIChE Annual Meeting, November 1999, Dallas, TX (Chair)

Batch Processing, AIChE Annual Meeting, November 1998, Miami Beach, FL (Chair).

Flexibility in Process Operations, AIChE Annual Meeting, November 1998, Miami Beach, FL (Chair).

Design for Flexibility and Operability, AIChE Annual Meeting, Miami Beach, Nov 1998 (Chair).

COLLABORATIONS

Internal

- Professor Georgopoulos: in the area of sensitivity and uncertainty analysis in contaminant source-to-dose sequence.
- Professor Khinast in the area of multiscale and environmental modeling.
- Professor Boros from Rutgers Center of Operations Research (RUTCOR) in the area of introducing optimization theory in engineering.
- Professor Coit from the department of Industrial Engineering in the area of Multiobjective optimization of process operations under uncertainty
- Professors Parashar from Electrical and Computer Engineering Department in the area of reactive multi-phase flows.

- Professor Roth from Chemical and Biochemical Engineering and Biomedical engineering departments in the area of hepatocyte functionality optimization.
- Professor Androulakis from Biomedical engineering in the area of modeling regulatory networks.
- Professor Yarmush from Biomedical Engineering: co-advise of one PhD thesis in the area of modeling and optimization of metabolic networks.

External

- Professor Michel Minoux from University of Paris 6 in decomposition based methods.
- Professor Anna Soffia Hauksdottir from University of Iceland a pioneer in the process control field.
- Professor Paul Stuart from Ecole Polytechnic in Montreal Canada in the area of optimization in pulp and paper industry.
- Professor Yannis Kevrekides from Princeton University, in the area of optimization of multiscale dynamic systems.
- Dr Avinash Sirdeshpande from BOC company in the area of design under uncertainty.
- Dr Jeff Kelly Honeywell Hi-Spec Solutions in the area of refinery scheduling.
- Dr Kevin Furman from ExxonMobil Research Engineering, in the area of supply chain modeling and optimization.
- Dr John Farell from ExxonMobil Research Engineering, in the area reduction of complex reaction networks.
- Prof Greg Stephanopoulos from MIT in the area of metabolic engineering.

REFEREEING/REVIEWING ACTIVITY

Scientific Conference Reviewer

Member of the scientific advisory committee FOAPD 2009

17th IFAC World Conference 2008

ACC (American Control Conference) 2006 Conference

8th International Symposium on Dynamics and Control of Process Systems (DYCOPS 2007)

ADCHEM (Advanced Control of Chemical Processes) Conference 2006

European Symposium of Computer Aided Process Engineering (ESCAPE)-16 / Process Systems Engineering (PSE)(2006)

Foundations of Computer Aided process Operations 2003 (FOCAPO)

European Symposium of Computer Aided Process Engineering (ESCAPE)- 6 (1996)

Scientific Journal Reviewer

Computers and Chemical Engineering

AIChE Journal

Industrial Engineering & Chemistry Research

Energy and Fuels

Combustion and Flame

Optimization and Engineering,

Chemical Engineering Communications

Chemical Engineering Science

European Journal of Operations Research

Computers and Industrial Engineering

Applied Mathematical Modeling

European Journal of Operations Research

Biotechnology and Bioengineering
Metabolic Engineering
Journal of Zhejiang University SCIENCE (JZUS)
The International Journal
Discrete Event Dynamic System
IEEE Transactions on Dielectrics and Electrical Insulation
Proposal Reviewer
National Science Foundation
National Science Foundation CAREER Panel
National Science Foundation ITR Panel
National Science Foundation IGERT Panel
Petroleum Research Fund (ACS).

FEATURED WORK

Chemical Engineering Progress "Simplifying Kinetic Models" **97**:11, 16, November 2001.

CITATIONS

451 citations as of July 2008 (source: Web of Science: Science Citation Index).

BOOKS AUTHORSHIP

M.G Ierapetritou, M. Minoux, G. Saharidis. Review of Decomposition Algorithms: Applications to Large Scale Engineering problems. In preparation 2008.

REFEREED JOURNAL PUBLICATIONS AND BOOK CHAPTERS

1. Ierapetritou, M.G. and Z. Li. Modeling and Managing Uncertainty in Process Planning and Scheduling. Springer volume in Optimization and Logistics Challenges in the Enterprise. Kevin Furman and W. Art Chaovalitwongse (eds), Springer, 2008.
2. Ierapetritou, M.G. and Z. Jia Short Term Scheduling Under Uncertainty: Sensitivity Analysis. Encyclopedia of Optimization Second Edition, C.A. Floudas and P.M. Pardalos (eds), Springer, 2008.
3. Ierapetritou, M.G. and I. Banerjee Shape Reconstruction Methods for Nonconvex Feasibility Analysis Encyclopedia of Optimization Second Edition, C.A. Floudas and P.M. Pardalos (eds), Springer, 2008.
4. Ierapetritou, M.G. and Z. Jia Gasoline Blending and Distribution Scheduling: An MILP model. Encyclopedia of Optimization Second Edition, C.A. Floudas and P.M. Pardalos (eds), Springer, 2008.
5. Portillo, P.M., M.G. Ierapetritou, and F.J. Muzzio Using Compartment Modeling to Investigate Mixing Behavior of a Continuous Mixer. *Jl. Ind. Pharm.* In press, 2008 (DOI 10.1007/s12247-008-9036-0).
6. Euling, S.Y., Makris, S., Sen, B., White, L., Benson, R., Gaido, K.W., Kim, A.S., Hester, S., Wilson, V.S., Keshava, C., Keshava, N., Foster, P.M., Androurlakis, I.P., Ovacik, M., Ierapetritou, M.G., Gray, L.E., Thompson, C., and Chiu, W. An approach to using genomics data in risk assessment: Dibutyl phthalate (DBP) case study. Birth Defects Research Part a-Clinical and Molecular Teratology 82, 296, 2008.
7. Li, Z., and M.G. Ierapetritou. Reactive Scheduling Based On Parametric Solution. *AIChE J.*, 47 , 2610, 2008.

8. Li, Z., and M.G. Ierapetritou. Robust optimization for process scheduling under uncertainty. *Ind. Eng. Chem. Res.* 47, 4148, 2008.
9. Saharidis, G., M.G. Ierapetritou and C.M. Minoux Decomposition Method for the Resolution of Mixed Integer Bi-level Linear Optimization Problem. Accepted for publication, *Jl. Glob. Opt.* 2008 (DOI:10.1007/s10898-008-9291-0).
10. He, K., M.G. Ierapetritou and I.P. Androulakis. A graph-based approach for developing adaptive representations of complex reaction mechanisms. *Comb. & Flame* In press, 2008.
11. Portillo, P.M., M.G. Ierapetritou, and F.J. Muzzio Characterization of Continuous Convective Powder Mixing Processes. *Powder Technology.* 182, 368, 2008.
12. Li, Z. and M.G. Ierapetritou Process scheduling under uncertainty: Review and challenges. *Comp. Chem. Eng* 32, 715, 2008.
13. P. Foteinou, E. Yang, G.K. Saharidis, M.G. Ierapetritou and I.P. Androulakis. A Mixed-Integer Optimization Framework for the Synthesis and Analysis of Regulatory Networks. *Jl. Glob Optim.* in press 2007 (DOI:10.1007/s10898-007-9266-6).
14. Davis, E., and M.G. Ierapetritou. A Kriging Based Method for the Solution of Mixed-Integer Nonlinear Programs Containing Black-Box Functions. In press, *Jl. Glob. Opt.* 2007 (DOI: 10.1007/s10898-007-9217-2).
15. Furman, K.C., Z. Jia, M.G. Ierapetritou A robust event-based continuous time formulation for tank transfer scheduling. *Ind. Eng. Chem. Res.* 46, 9126, 2007.
16. Li, Z. and M.G. Ierapetritou Process scheduling under uncertainty using multiparametric programming. *AIChE Jl.* 53, 3183, 2007.
17. Li, Z. and M.G. Ierapetritou A new methodology for the general multiparametric mixed-integer linear programming (MILP) problems *Ind. Eng. Chem. Res.* 46, 5141, 2007.
18. Wu, D. and M.G. Ierapetritou Hierarchical approach for production planning and scheduling under uncertainty. *Chem. Eng. & Process.* 46, 1129, 2007
19. Ierapetritou, M.G. and Z. Jia Short-term scheduling of chemical process including uncertainty. *Control Engineering Practice.* 15, 1207, 2007.
20. Davis, E. and M.G. Ierapetritou A kriging method for the solution of nonlinear programs with black-box functions. *AIChE Jl.* 53, 2001, 2007.
21. Portillo P.M., Muzzio F.J., Ierapetritou M.G. Hybrid DEM-compartment modeling approach for granular mixing. *AIChE Jl* 53 (1): 119, 2007.
22. Jia, Z. and M.G. Ierapetritou. Generate Pareto Optimal Solutions of Scheduling Problems using Normal Boundary Intersection Technique. *Comp. Chem. Eng.* 31, 268, 2007.
23. Davis, E., and M.G. Ierapetritou Adaptive Optimization of Noisy Black-Box Functions Inherent in Microscopic Models. *Comp. Chem. Eng.*, 31, 466, 2007.
24. Goyal, V., and M.G. Ierapetritou. Stochastic MINLP Optimization using Simplicial Approximation. *Comp. Chem. Eng.*, 31, 1081, 2007.
25. Portillo, P. F. Muzzio and M.G. Ierapetritou. Characterizing Powder Mixing Processes utilizing Compartment Models. *Int. Jl. Of Pharm.* 320, 14, 2006.
26. Jia, Z. and M.G. Ierapetritou. Uncertainty Analysis on the RHS for MILP problems. *AIChE J.*, 52, 2486, 2006.
27. Wu, D., and M.G. Ierapetritou. Improved Lagrangean Decomposition Approach for MILP Problems. *Comp. Chem. Eng.* 30, 778, 2006.
28. Banerjee, I., and M.G. Ierapetritou. An Adaptive Reduction Scheme to Model Reactive Flow. *Comb. Flame*, 144, 219, 2006.

29. Bindal, A., M.G. Ierapetritou, S. Balakrishnan, A. Makeev, I. Kevrekidis and A. Armaou. Equation-free, coarse-grained computational optimization using timesteppers. *Chem. Eng. Sci.* 61, 279, 2006.
30. Sharma, N., M.G. Ierapetritou and M.L. Yarmush. Novel Quantitative Tools for Engineering Analysis of Hepatocyte Cultures in Bioartificial Liver Systems. *Biotechnology and Bioengineering*, 92(3), 321, 2005.
31. Balakrishnan S., Roy A., Ierapetritou M.G., Flach G.P. and Georgopoulos P.G. A Comparative Assessment of Efficient Uncertainty Analysis Techniques for Environmental Fate and Transport Models: Application to the FACT Model. *Journal of Hydrology* 307 (1-4): 204-218 JUN 9 2005.
32. Banerjee, I., and M.G. Ierapetritou. Feasibility evaluation of nonconvex systems using shape reconstruction techniques. *Ind. Eng. Chem. Res.*, 44, 3638, 2005.
33. Goyal, V. and M.G. Ierapetritou. Multiobjective Framework for Modular Design Generation Incorporating Demand Uncertainty, *Ind. Eng. Chem. Res.*, 44, 3594 2005.
34. Sirdeshpande, A.R., M.G. Ierapetritou, M.J. Andrecovich, J.P. Naumovitz. Process synthesis optimization and flexibility evaluation of air separation cycles. *AIChE J.*, 51, 1190, 2005.
35. Goyal, V. and M.G. Ierapetritou. Deterministic framework for robust modular design with integrated-demand data analysis. *Ind. Eng. Chem. Res.* 43, 6813, 2004.
36. Wu, D., and M.G. Ierapetritou. Cyclic Short-Term Scheduling of Multiproduct Batch Plants using Continuous Time Formulation. *Comput. Chem, Eng.* 28, 2271, 2004.
37. Jia, Z., and M.G. Ierapetritou. Efficient short-term scheduling of refinery operations based on a continuous time formulation. *Comput. Chem. Eng.* 28, 1001, 2004.
38. Jia, Z., and M.G. Ierapetritou. Short-Term Scheduling under Uncertainty Using MILP Sensitivity Analysis. *Ind. & Eng. Chem. Res.*, 43, 3782, 2004.
39. Hauksdottir, A.S., U. Zuhlke, M.G. Ierapetritou and V. Goyal. The Solution of Simultaneous Decoupling and Pole Placement Problem using Global Optimization. Special Issue of *Comp. Chem. Eng.* "The integration of Process Design and Control", Panos Seferlis, Michael Georgiadis (Eds) Elsevier, 582, 2004.
40. Goyal, V. and M.G. Ierapetritou. Computational Studies using a Novel Simplicial-approximation based Algorithm for MINLP Optimization. *Comput. Chem. Engng.* 28, 1771, 2004.
41. Banerjee, I., and M.G. Ierapetritou. Model Independent Parametric Decision Making. *Ann. Oper. Res.*, 132, 135, 2004.
42. Goyal, V. and M.G. Ierapetritou. MINLP Optimization Using Simplicial Approximation Method for Classes of Nonconvex Problems. In "*Nonconvex Optimization and Its Applications #74: Frontiers in Global Optimization*", C.A. Floudas and P.M. Pardalos (Eds), Springer, 2003, page 165.
43. Banerjee, I., and M.G. Ierapetritou. Development of an Adaptive Chemistry Model Considering Micromixing Effects. *Chem. Eng. Sci.*, 8, 4537, 2003.
44. Goyal, V. and M.G. Ierapetritou. Framework for Evaluating the Feasibility/Operability of Nonconvex Processes. *AIChE J.*, 49, 1233, 2003.
45. Jia, Z., and M.G. Ierapetritou. Mixed Integer Programming Model for Gasoline Blending and Distribution Scheduling, *Ind. Eng. & Chem. Res.*, 42, 825, 2003.
46. Bindal, A., M.G. Ierapetritou and J.Khinast. Adaptive Multiscale Solution of Dynamical Systems in Chemical Processes Using Wavelets. *Comp. Chem. Eng.*, 27, 131, 2003.

47. Wu, D., and M.G. Ierapetritou. Decomposition Approaches for the Efficient Solution of Short-Term Scheduling Problem. *Comp. Chem. Eng.*, 27, 1261, 2003.
48. Banerjee, I., and M.G. Ierapetritou. Process Synthesis under Parameter Variability. *Comput. Chem. Eng.*, 27, 1499, 2003.
49. Jia, Z., M.G. Ierapetritou and J. D. Kelly. Refinery Short-term Scheduling Using Continuous Time Formulation Crude Oil Operations, *Ind. Eng. & Chem. Res.*, 42, 3085, 2003.
50. Balakrishnan, S., A. Roy, M.G. Ierapetritou, G.P. Flach, and P. Georgopoulos. Uncertainty Reduction and Characterization of Complex Environmental Fate and Transport Models: An Empirical Bayesian Framework Incorporating the Stochastic Response Surface Method. *Water Resources Research*, 39(12): 1350, 2003.
51. Goyal, V. and M.G. Ierapetritou. Integration of Data Analysis and Design Optimization for the systematic Generation of Equipment Portfolio. *Ind. & Eng. Chem. Res.*, 42, 5204, 2003.
52. Balakrishnan, S., P. Georgopoulos, I. Banerjee and M.G. Ierapetritou. Uncertainty Considerations in the Complex Kinetic Mechanisms Reduction. *AIChE J.*, 48, 2875, 2002.
53. Banerjee, I., and M.G. Ierapetritou. Design Optimization under Parameter Uncertainty for General Black Box Models. *Ind. & Eng. Chem. Res.*, 41, 6687, 2002.
54. Ierapetritou, M.G., D. Wu, J. Vin, P. Sweeney, M. Chigirinskiy. Cost Minimization in an Energy Intensive Plant Using Mathematical Programming Approaches. *Ind. & Eng. Chem. Res.*, 41, 5262, 2002.
55. Goyal, V. and M.G. Ierapetritou. Determination of Operability Limits Using Simplicial Approximation. *AIChE J.*, 48, 2902, 2002.
56. Ierapetritou, M.G. and J.Khinast. A New Stability Analysis Approach for Chemical Reactors Based on Iterative Sampling and Optimization. *AIChE J.*, 48, 187, 2002.
57. Vin, J., and M.G. Ierapetritou. Robust Short-Term Scheduling of Multiproduct Batch Plants under Demand Uncertainty. *Ind. & Eng. Chem. Res.*, 40, 4543, 2001.
58. Ierapetritou M.G., and C.A. Floudas. Comments on "An improved RTN continuous-time formulation for the short-term scheduling of multipurpose batch plants". *Ind. & Eng. Chem. Res.*, 40, 5040, 2001.
59. Sirdeshpande, A., M.G. Ierapetritou, and I.P. Androulakis. Design of Flexible Reduced Kinetic Mechanisms. *AIChE J.*, 47, 2461, 2001.
60. Floudas, C.A., Z. Gumus, and M.G. Ierapetritou Global Optimization for the Feasibility Test and Flexibility Index Problems, *Ind. & Eng. Chem. Res.*, 40, 4267, 2001.
61. Ierapetritou, M.G. A New Approach for Quantifying Process Feasibility: Convex and one Dimensional Quasi-Convex Regions. *AIChE J.*, 47, 1407, 2001.
62. Ierapetritou, M.G. Bilevel Optimization: Feasibility Test and Flexibility Index *Encyclopedia of Optimization*, C.A. Floudas and P.M. Pardalos (eds), Kluwer Academic Publisher, Printed in the Netherlands, 2001.
63. Ierapetritou, M.G. MINLP: Application in Facility Location-Allocation *Encyclopedia of Optimization*, C.A. Floudas and P.M. Pardalos (eds), Kluwer Academic Publisher, Printed in the Netherlands, 2001.
64. Ierapetritou, M.G. Single Facility Location: Multi-objective Rectilinear Distance Location *Encyclopedia of Optimization*, C.A. Floudas and P.M. Pardalos (eds), Kluwer Academic Publisher, Printed in the Netherlands, 2001.
65. Ierapetritou, M.G. Single Facility Location: Multi-objective Euclidean Distance Location *Encyclopedia of Optimization*, C.A. Floudas and P.M. Pardalos (eds), Kluwer Academic Publisher, Printed in the Netherlands, 2001.

66. Vin, J., and M.G. Ierapetritou. A New Approach for Efficient Rescheduling of Multiproduct Batch Plants. *Ind. & Eng. Chem. Res.*, 39, 4228, 2000.
67. Ierapetritou M.G., I.P. Androulakis, D.S. Monos and C.A. Floudas, "Structure Prediction of Binding Sites of MHC Class II Molecules based on the Crystal of HLA-DR1 and Global Optimization", State of the Art in Global Optimization: Computational Methods and Applications, Eds: C.A. Floudas and P.M. Pardalos, Kluwer, 2000.
68. Ierapetritou M.G., T.S. Hene and C.A. Floudas, Effective Continuous-Time Formulation for Short-Term Scheduling: III Multiple Intermediate Due Dates *Ind. & Eng. Chem.*, 38, 9, 3446, 1999.
69. Ierapetritou M.G., and C.A. Floudas and S. Vansanharajan and A.S. Gullick, A Decomposition Based Approach for Optimal Location of Vertical Wells *AIChE J.*, 45, 4, 844, 1999.
70. Ierapetritou M.G., and C.A. Floudas, Effective Continuous-Time Formulation for Short-Term Scheduling: I. Multipurpose Batch Processes *Ind. & Eng. Chem. Res.*, 37, 11, 4341, 1998.
71. Ierapetritou M.G., and C.A. Floudas, Effective Continuous-Time Formulation for Short-Term Scheduling: II. Multipurpose/Multiproduct Continuous Processes *Ind. & Eng. Chem. Res.*, 37, 11, 4360, 1998.
72. Ierapetritou, M.G. and C.A. Floudas, Short-Term Scheduling: New Mathematical Models vs Algorithmic Improvements. *Comp. & Chem. Eng.*, 22, S419, 1998.
73. Klepeis, J.L., M.G. Ierapetritou, and C.A. Floudas, Protein Folding and Peptide Docking: A Molecular Modeling and Global Optimization Approach. *Comp. & Chem. Eng.*, 22, S3, 1998
74. Klepeis, J.L., I.P. Androulakis, M.G. Ierapetritou, and C.A. Floudas, Predicting Solvated Peptide Conformations via Global Minimization of Energetic atom-to-atom Interactions. *Comp. & Chem. Eng.*, 22, 765, 1998
75. Androulakis I.P., N.N. Nayak, M.G. Ierapetritou, D.S. Monos and C.A. Floudas, Identification of Peptide Binding Specificity for Pocket 1 of HLA-DR1 Based on Global Minimization of Energy Interactions. *Proteins: Structure, Function and Genetics*, 29, 87, 1997.
76. Epperly T., M.G. Ierapetritou and E.N. Pistikopoulos, On the global and efficient solution of stochastic batch plant design problems *Comp. & Chem. Eng.*, 21, 1411, 1997.
77. Ierapetritou, M.G., E.N. Pistikopoulos and C. A. Floudas, Operational Planning Under Uncertainty. *Comp. & Chem. Eng.*, 20, S1209, 1996.
78. Ierapetritou, M.G. and E. N. Pistikopoulos, Batch Plant Design and Operations under Uncertainty *Ind. & Eng. Chem. Res.*, 35, 772, 1996.
79. Ierapetritou, M.G., J. Acevedo and E.N. Pistikopoulos, An Optimization Approach for Process Engineering Problems under Uncertainty. *Comp. & Chem. Eng.*, 20, 703, 1996.
80. Pistikopoulos, E.M, T.V. Thomaidis, M. G. Ierapetritou and A. Melin, Flexibility, Reliability and Maintenance considerations in Batch Plant Design *Comp. & Chem. Eng.*, 20, S1209, 1996.
81. Ierapetritou, M.G. and E. N. Pistikopoulos, Global Optimization for Stochastic Planning Scheduling and Design Problems *Global Optimization in Engineering Design*, I.E.Grossmann (ed), Kluwer Academic Publisher, Printed in the Netherlands, 231-287, 1996.
82. Visweswaran V., Floudas C.A., Ierapetritou, M.G. and Pistikopoulos E.N., A Decomposition Based Global Optimization Approach for Bi-Level Convex Programming Problems. *State of the Art in Global Optimization: Computational Methods and Applications* C.A. Floudas and P.M. Pardalos (eds), Springer, 139-162, 1996.

83. Ierapetritou, M.G. and E.N. Pistikopoulos, Design of Multiproduct Batch Plants with Uncertain Demands. *Comp. & Chem. Eng.*, 19, S627, 1995.
84. Pistikopoulos, E.N. and M.G. Ierapetritou, A Novel Approach for Optimal Process Design under Uncertainty. *Comp. & Chem. Engng.*, 19, 1089, 1995.
85. Ierapetritou, M.G. and E. N. Pistikopoulos, A Novel Optimization Approach of Stochastic Planning Models. *Ind. & Eng. Chem. Res.*, 33, 1930, 1994.
86. Ierapetritou, M.G. and E. N. Pistikopoulos, Simultaneous incorporation of flexibility and economic risk in operational planning under uncertainty. *Comp. & Chem. Eng.*, 18, 163, 1994.

SUBMITTED/WORKING PAPERS

1. Saharidis, G., M.G. Ierapetritou and C.M. Minoux Accelerating Benders decomposition using covering cut bundle generation. Submitted for publication, *Int. Trans. Oper. Res.*, 2008.
2. Saharidis, G., and M.G. Ierapetritou. Scheduling of Loading and Unloading of Crude oil in a refinery with combine mixture preparation. Submitted for publication, *Ind. Eng. Chem. Res.*, 2008.
3. Saharidis, G., M. Golias, M.G. Ierapetritou, M. Boile, and S. Theofanis. The Berth Scheduling Problem with Customer Differentiation: A Hierarchical Bi-level Approach and a k-th best based Solution Algorithm, Submitted for publication, *Transp. Res. Part B Methodological*, 2008.
4. Saharidis, G., and M.G. Ierapetritou. Speed-Up Benders Decomposition Using Multi-Generation of Cuts: Maximization of the number of Active Constraints Cut Generation. Submitted for publication, *JOGO*, 2008.
5. Lima, F.V., Z. Jia, M.G. Ierapetritou and C. Georgakis Similarities and Differences between the Concepts of Operability and Flexibility. Submitted for publication, *AIChE J.*, 2008.
6. Davis, E. and M.G. Ierapetritou. A Centroid-Based Sampling Strategy for Kriging Global Modeling and Optimization. Submitted for publication, *Ind. Eng. Chem. Res.*, 2008.
7. He, K., I.P. Androulakis, and M.G. Ierapetritou. On-the-fly reduction of kinetic mechanisms using element flux analysis. Submitted for publication, *Chem. Eng. Sci.*, 2008.
8. Li, Z., and M.G. Ierapetritou. A Method for Solving the General Parametric Linear Complementarity Problem. Submitted for publication, *Ann. Oper. Res.*, 2008.
9. Yang, H., Roth, C.M. and M.G. Ierapetritou. Effects of Amino Acid Supplementation in Optimal Urea Production of Hepatocytes. Submitted for publication, *BMC Systems Biology*, 2008.
10. Portillo, P.M., A. Ingram, J. K. Seville, M.G. Ierapetritou, F. J. Muzzio. Investigating the effects of Speed, Flowrate, and Cohesion using PEPT on a Continuous Blender. Submitted for publication, *Chem. Eng. Sci.* 2008.
11. Portillo, P.M., M.G. Ierapetritou, F. J. Muzzio. Effects of Rotation Rate, Mixing Angle, and Cohesion in two Continuous Powder Mixers – a statistical approach. Submitted for publication *Powder Tech.* 2008.
12. Guzikowski, S.A., M.G. Ierapetritou, and C.M. Roth. Metabolic and Genomic Analysis of Acetaminophen Metabolism. Manuscript in preparation, 2008.
13. Jia, Z., F. Muzzio, and M.G. Ierapetritou. Predictive Modeling for Mixing and Feeding Powder Processes using Kriging methodology. Manuscript in preparation 2008.
14. Yang, H., C.M. Roth, and M.G. Ierapetritou. Metabolic Flux Analysis for Hepatocyte Optimal Functionality. Manuscript in preparation 2008.

15. Iyer, V., C.M. Roth, and M.G. Ierapetritou. Analysis of different conditions for HepG2 optimization. Manuscript in preparation 2008.

REFEREED CONFERENCE PROCEEDINGS

1. Shah, N., G. Saharidis, Z. Jia, and M.G. Ierapetritou. Centralized-Decentralized Optimization for Refinery Scheduling. Foundations of Computer Aided Process Operations (FOCAPO), Paper # 92, Cambridge, MA, June, 2008.
2. Li, Z. and M.G. Ierapetritou. Robust Scheduling Optimization. Foundations of Computer Aided Process Operations (FOCAPO), Paper # 84, Cambridge, MA, June, 2008.
3. Foteinou, P.T., E. Yang, G.K Saharidis, M.G. Ierapetritou and I.P. Androulakis, A Mixed Integer Optimization Algorithm to Reverse Engineer Transcriptional Regulatory Networks, Proceeding of the 5th International Conference on the Foundations of Computer-Aided Process Operations, Paper #83, Cambridge, MA, June 2008.
4. L. Liang, J.G. Stevens, J.T. Farrell, P.T. Huynh, I.P. Androulakis, and M.G. Ierapetritou. An adaptive approach for coupling detailed chemical kinetics and multidimensional CFD. 5th US Combustion Meeting, San Diego, March 2007.
5. P.M. Portillo, F.J. Muzzio, M.G. Ierapetritou, Modeling and designing powder mixing processes utilizing compartment modeling. Paper #1.24, European Symposium on Computer Aided Process Engineering (ESCAPE) 16/PSE'06, Garmisch-Partenkirchen, Germany, July 2006.
6. Z. Jia, M.G. Ierapetritou, Scheduling under demand uncertainty using a new multiparametric programming approach. Paper #1.42, European Symposium on Computer Aided Process Engineering (ESCAPE) 16/PSE'06, Garmisch-Partenkirchen, Germany, July 2006.
7. E. Davis, M. Ierapetritou, Solving MINLP containing noisy variables and black-box functions using branch-and-bound. Paper #3.16, European Symposium on Computer Aided Process Engineering (ESCAPE) 16/PSE'06, Garmisch-Partenkirchen, Germany, July 2006.
8. H. Yang, M.L. Yarmush, C. Roth, M.G. Ierapetritou, Minimal reaction sets and metabolic pathways for cultured hepatocytes. Paper #3.54, European Symposium on Computer Aided Process Engineering (ESCAPE) 16/PSE'06, Garmisch-Partenkirchen, Germany, July 2006.
9. Goyal, V. and M. G. Ierapetritou. Stochastic MINLP Optimization using Simplicial Approximation. CM-058, page 61, European Symposium on Computer Aided Process Engineering (ESCAPE) 15, Barcelona, Spain, May 2005.
10. Banerjee, I. and M.G. Ierapetritou. A Novel Feasibility Analysis Approach Based on Dimensionality Reduction and Shape Reconstruction. CM-017, page 85, ESCAPE 15, Barcelona, Spain, May 2005.
11. Banerjee, I. and M.G. Ierapetritou. An Adaptive Reduction Scheme to Develop Flexible Reduced Chemistry Models for Reactive Flow Simulations. MS-036, page 247, ESCAPE 15, Barcelona, Spain, May 2005.
12. Davis, E. and M.G. Ierapetritou. Adaptive Optimization of Noisy Black-Box Functions Inherent In Microscopic Models. CM-043, page 193, ESCAPE 15, Barcelona, Spain, May 2005.
13. Jia, Z., and M.G. Ierapetritou. Scheduling Under Uncertainty Using MILP Sensitivity Analysis. MPO006, page 931, ESCAPE 14, Lisbon, 2004.
14. Sharma, N., M.G. Ierapetritou, and M.L. Yarmush. Novel Quantitative Tools for Engineering Analysis of Hepatocyte Cultures used in Bioartificial Liver Systems. NCp015, Page 1057, ESCAPE 14, Lisbon, 2004.

15. Goyal, V. and M.G. Ierapetritou. Scenario-Based Approach for Robust Modular Design Generation. SPIp008 p 421. ESCAPE 14, Lisbon, 2004.
16. Banerjee, I., and M.G. Ierapetritou. Adaptive Chemistry Model Development for Combustion. 16th ONR Propulsion Meeting, Los Angeles, CA (2003).
17. Jia, Z., and M.G. Ierapetritou. Flexibility Incorporation in Scheduling Decision Making, 8th International Symposium of Process Systems Engineering, (2003).
18. Jia, Z., and M.G. Ierapetritou. Efficient short-term scheduling of refinery operation based on continuous time formulation. *Proceedings of the Foundations of Computer-Aided Process Operations*, (2003).
19. Wu, D., and M.G. Ierapetritou. A Novel Continuous-Time Formulation and Solution Approach for Simultaneous Consideration of Planning and Scheduling Decisions. *Proceedings of the Foundations of Computer-Aided Process Operations*, (2003).
20. Ierapetritou, M.G., I.P. Androulakis, Uncertainty considerations in the reduction of chemical reaction mechanisms, *Proceedings of the 5th International Conference on Foundations of Computer-Aided Process Design*, (2000).
21. Ierapetritou, M.G. and C.A. Floudas, Modeling and Optimization of Short-term Scheduling of Batch and Semi-Continuous Processes, *Proceedings of 2nd Hellenic Scientific Chemical Engineering Conference*, Thessaloniki, Athens, Greece (1999).

PRESENTATIONS

1. Davis, E. and M.G. Ierapetritou. A Kriging Optimization Algorithm Incorporating Efficient Sampling for Problems Containing Black-Box Models. *AIChE Annual Meeting*, Philadelphia, Nov 2008, paper 198f.
2. Li, Z., and M.G. Ierapetritou. A New Methodology for Integrated Planning and Scheduling Using Multi-Level Optimization. *AIChE Annual Meeting*, Philadelphia, Nov 2008, paper 498a.
3. Smith, B.V. and M.G. Ierapetritou. A Framework for Generating An Optimal Set of Robust Product Design Alternatives. *AIChE Annual Meeting*, Philadelphia, Nov 2008, paper 697a.
4. Shah, N., G. Saharidis, Z. Jia, and M.G. Ierapetritou. Centralized - Decentralized Optimization for Refinery Scheduling. *AIChE Annual Meeting*, Philadelphia, Nov 2008, paper 448a.
5. Yang, H., C.M. Roth, and M.G. Ierapetritou. Effects of Hormone and Amino Acid Supplementation In Optimal Liver Specific Functions of Hepatocytes. *AIChE Annual Meeting*, Philadelphia, Nov 2008, paper 300e.
6. Jia, Z., E. Davis, F. Muzzio, and M.G. Ierapetritou. Predictive Modeling for Mixing and Feeding Processes Using Kriging Approach. *AIChE Annual Meeting*, Philadelphia, Nov 2008, paper 360c.
7. Iyer, V., C.M. Roth, and M.G. Ierapetritou. Effects of Glucose and Insulin Levels on HepG2 Cell Metabolism. *AIChE Annual Meeting*, Philadelphia, Nov 2008, paper 66b.
8. He, K., I.P. Androulakis and M.G. Ierapetritou. On-the-Fly Reduction of Kinetic Mechanisms Using Element Flux Analysis. *AIChE Annual Meeting*, Philadelphia, Nov 2008, paper 79e.
9. Portillo, P.M., A. Ingram, J. K. Seville, M.G. Ierapetritou, F. J. Muzzio. Analysis of Operating Conditions of a Continuous Powder Mixer Using PEPT. *AIChE Annual Meeting*, Philadelphia, Nov 2008, paper 638f.

10. Portillo, P.M., A. Vanarase, M.G. Ierapetritou, F. J. Muzzio. Effects of Rotation Rate, Mixing Angle, and Cohesion In Two Continuous Powder Mixers – a Statistical Approach. *AIChE Annual Meeting*, Philadelphia, Nov 2008, paper 134g.
11. Ovacik, M.A., M.G. Ierapetritou, P.G. Georgopoulos, W. Welsh, and I.P. Androulakis Indirect Response Model of Arsenic Exposure on Gene Expression. *AIChE Annual Meeting*, Philadelphia, Nov 2008, paper 565b.
12. Shah, N., G. Saharidis, Z. Jia, and M.G. Ierapetritou. Centralized-Decentralized Optimization for Refinery Scheduling. *Foundations of Computer Aided Process Operations (FOCAPO)*, Paper # 92, Cambridge, MA, June, 2008.
13. Li, Z. and M.G. Ierapetritou. Robust Scheduling Optimization. *Foundations of Computer Aided Process Operations (FOCAPO)*, Paper # 84, Cambridge, MA, June, 2008.
14. Foteinou, P.T., E. Yang, G.K Saharidis, M.G. Ierapetritou and I.P. Androulakis, A Mixed Integer Optimization Algorithm to Reverse Engineer Transcriptional Regulatory Networks, *Proceeding of the 5th International Conference on the Foundations of Computer-Aided Process Operations*, Paper #83, Cambridge, MA, June 2008.
15. He, K., I.P. Androulakis and M.G. Ierapetritou. A Graph-Based Approach for Developing Adaptive Representations of Complex Reaction Mechanisms, *AIChE Annual Meeting*, Salt Lake City, Nov 2007, paper 528c.
16. Li, Z., and M.G. Ierapetritou. A Novel Multiparametric Programming Framework and Its Application in Scheduling Under Uncertainty. *AIChE Annual Meeting*, Salt Lake City, Nov 2007, paper 468b.
17. Davis, E. and M.G. Ierapetritou. A New Approach to MINLP Containing Noisy Variables and Black-Box Functions. *AIChE Annual Meeting*, Salt Lake City, Nov 2007, paper 275c.
18. Portillo, P, M. G. Ierapetritou, and F. Muzzio. Experimental Study and Computational Modeling of Continuous Powder Mixing Processes. *AIChE Annual Meeting*, Salt Lake City, Nov 2007, paper 409c.
19. Ovacik, M.A., M.G. Ierapetritou, B. Sen, S. Euling, P.G. Georgopoulos, W. Welsh, K. Gaido, I.P. Androulakis. Toxicogenomics Analysis Following in Utero Exposure to Di-Butyl-Phthalate. *AIChE Annual Meeting*, Salt Lake City, Nov 2007, paper 370b.
20. Guzikowski, S.A., M. G. Ierapetritou, and C.M. Roth Metabolic Analysis of Xenobiotic Interactions In Hepatocytes. *AIChE Annual Meeting*, Salt Lake City, Nov 2007, paper 560b.
21. Yang, H., C.M. Roth, and M.G. Ierapetritou. Effects of Amino Acid Supplementation In Optimal Liver Specific Functions Of Hepatocytes. *AIChE Annual Meeting*, Salt Lake City, Nov 2007, paper 598d.
22. Sacharidis, G.C. and M. G. Ierapetritou. New Algorithm for Mixed Integer Linear Bi-Level Programming. *AIChE Annual Meeting*, Salt Lake City, Nov 2007, paper 275f.
23. Ierapetritou, M.G., C. Georgakis, Z. Jia, F. Lima, Similarities and Differences between The Concepts Of Operability And Flexibility. *AIChE Annual Meeting*, Salt Lake City, Nov 2007, paper 288a.
24. Li, Z., and M.G. Ierapetritou. Scheduling Under Uncertainty Using Parametric Programming. *AIChE Annual Meeting*, San Francisco, Nov 2006, paper 629d.
25. Portillo P, M. G. Ierapetritou, and F. Muzzio. Characterization and Modeling of Continuous Convective Powder Mixing Processes. *AIChE Annual Meeting*, San Francisco, Nov 2006, paper 597c.

26. Davis, E. and M.G. Ierapetritou. A New Approach for the Solution of Noisy Black-Box Models Involving Integer Variables. *AIChE Annual Meeting*, San Francisco, Nov 2006, paper 61b.
27. Guzikowski, S.A., M. G. Ierapetritou, and C.M. Roth Metabolic and Genomic Analysis of Acetaminophen Metabolism. *AIChE Annual Meeting*, San Francisco, Nov 2006, paper 124f
28. Yang, H., C.M. Roth, and M.G. Ierapetritou. Insights into Hepatic Metabolism from Flux Balance and Pathway Analyses. *AIChE Annual Meeting*, San Francisco, Nov 2006, paper 683d.
29. Sharma, N., M.G. Ierapetritou, R. Schloss, M.L. Yarmush. Quantitative Modeling of Metabolically Mature Na-butyrate Induced Hepatocyte-Like Cells from Embryonic Stem cells. *AIChE Annual Meeting*, San Francisco, Nov 2006, paper 612b.
30. Guzikowski, S.A., S.E. Tischfield, M.G. Ierapetritou, and C.M. Roth Metabolic and Genomic Analysis of Acetaminophen Metabolism and Induced-Hepatotoxicity. Paper # BIOT 119, ACS Annual Meeting, San Francisco, Sep. 2006.
31. Jia, Z., and M.G. Ierapetritou. Generate Pareto Optimal Solutions for Scheduling Problems under Uncertainty Using Normal Boundary Intersection Technique. *AIChE Annual Meeting*, Cincinnati, Nov 2005, paper 496a.
32. Wu, D., and M.G. Ierapetritou. Hierarchical Approach for Production Planning and Scheduling under Uncertainty. *AIChE Annual Meeting*, Cincinnati, Nov 2005, paper 582d.
33. Banerjee, I., M.G. Ierapetritou, I. P. Androulakis, and T. P. Huynh. A New Adaptive Representation of Complex Kinetic Models. *AIChE Annual Meeting*, Cincinnati, Nov 2005, paper 568a.
34. Jia, Z., and M.G. Ierapetritou. Uncertainty Analysis of MILP Problems. *AIChE Annual Meeting*, Cincinnati, Nov 2005, paper 12b.
35. Davis, E. and M.G. Ierapetritou. Adaptive Optimization of Noisy Black-Box Functions Inherent in Microscopic Models. *AIChE Annual Meeting*, Cincinnati, Nov 2005, paper 570g.
36. Portillo P, F. Muzzio, and M. G. Ierapetritou. Modeling Granular Mixing Processes Utilizing a Hybrid DEM-Compartment Modeling Approach. *AIChE Annual Meeting*, Cincinnati, Nov 2005, paper 364d.
37. Ierapetritou, M.G., N. Sharma, H. Yang, S. A. Guzikowski, M. L. Yarmush, and C. M. Roth. Optimization and Control of Metabolic Activities in Hepatocytes. *AIChE Annual Meeting*, Cincinnati, Nov 2005, paper 246f.
38. Tischfield, S.E., C. M. Roth, M.G. Ierapetritou, and S. Guzikowski. A Bioinformatics Approach to Modeling Cytochrome P450 Gene Regulation in Hepatocytes. *AIChE Annual Meeting*, Cincinnati, Nov 2005, paper 93s.
39. Sharma, N. H. Yang, C.M. Roth, M. L. Yarmush, and M.G. Ierapetritou. Optimal Metabolic Control of Hepatocyte Function. Foundations of Systems Biology in Engineering (FOSBE) 2005 Santa Barbara, CA, August 2005.
40. Goyal, V. and M. G. Ierapetritou. Stochastic MINLP Optimization using Simplicial Approximation. European Symposium on Computer Aided Process Engineering (ESCAPE) 15, Barcelona, Spain, May 2005.
41. Banerjee, I. and M.G. Ierapetritou. A Novel Feasibility Analysis Approach Based on Dimensionality Reduction and Shape Reconstruction. ESCAPE 15, Barcelona, Spain, May 2005.
42. Banerjee, I. and M.G. Ierapetritou. An Adaptive Reduction Scheme to Develop Flexible Reduced Chemistry Models for Reactive Flow Simulations. ESCAPE 15, Barcelona, Spain, May 2005.

43. Davis, E. and M.G. Ierapetritou. Adaptive Optimization of Noisy Black-Box Functions Inherent In Microscopic Models. ESCAPE 15, Barcelona, Spain, May 2005.
44. Banerjee, I. and M.G. Ierapetritou. Feasibility evaluation of nonconvex systems using shape reconstruction techniques. *AIChE Annual Meeting*, Austin, Nov 2004.
45. Banerjee, I. and M.G. Ierapetritou. CFD modeling of combustion systems using an adaptive chemistry scheme. *AIChE Annual Meeting*, Austin, Nov 2004.
46. Portillo P, M. G. Ierapetritou and F. Muzzio. Development of Control Strategies for Blending Operations in Pharmaceutical Processes. *AIChE Annual Meeting*, Austin, Nov 2004.
47. Sharma, N., M.G. Ierapetritou, and M.L. Yarmush. Novel Quantitative Tools for Engineering Analysis of Hepatocyte Cultures used in Bioartificial Liver System. *AIChE Annual Meeting*, Austin, Nov 2004.
48. Sharma, N., A. Bindal, M. Benson, M.G. Ierapetritou, and J. Khinast. Dynamics and Stability Analysis of a Mixed Micro-organism environment in which a bacteria degrades a Polycyclic Aromatic Hydrocarbon contaminant. *AIChE Annual Meeting*, Austin, Nov 2004.
22. Jia, Z., and M.G. Ierapetritou. Scheduling Under Uncertainty Using MILP Sensitivity Analysis. MPO006, ESCAPE 14, Lisbon, 2004.
49. Jia, Z. and M.G. Ierapetritou. Incorporation of Flexibility in Scheduling Decision-Making. PSE, China, January 2004.
50. Goyal, V. and M.G. Ierapetritou. Stochastic Framework For Flexible Module Manufacturing. SPIp010, ESCAPE 14, Lisbon, May 2004.
51. Sharma, N., M.G. Ierapetritou and M.L. Yarmush. Novel Quantitative Tools for Engineering Analysis of Hepatocyte Cultures used in Bioartificial Liver Systems. NCp015, ESCAPE 14, Lisbon, May 2004.
52. Jia, Z. and M.G. Ierapetritou. Scheduling with Parameter Uncertainty Based on Sensitivity Analysis. ESCAPE 14, Lisbon, May 2004.
53. Jia, Z. and M.G. Ierapetritou. Short-term Scheduling Under Uncertainty Using MILP Sensitivity Analysis. *AIChE Annual Meeting*, San Francisco, Nov 2003.
54. Wu D., and M.G. Ierapetritou. Hierarchical Approach for Production Planning and Scheduling Under Uncertainty Using Continuous-Time Formulation. *AIChE Annual Meeting*, San Francisco, Nov 2003.
55. Banerjee, I. and M.G. Ierapetritou. A Framework for Coupling Adaptively Reduced Chemistry with Detailed Flow Field Models. *AIChE Annual Meeting*, San Francisco, Nov 2003.
56. Goyal, V., and M.G. Ierapetritou. Effective Convex Hull Approximation Approach for MINLP Optimization. *AIChE Annual Meeting*, San Francisco, Nov 2003.
57. Ierapetritou M.G., and V. Goyal. Design of Flexible Module Manufacturing. *AIChE Annual Meeting*, San Francisco, Nov 2003.
58. Ierapetritou, M.G., S. Balakrishnan, A. Makeev, I. Kevrekedis and A. Armaou. Coarse Computational Optimization Using Time-steppers. *AIChE Annual Meeting*, San Francisco, Nov 2003.
59. Jia, Z. and M.G. Ierapetritou. Efficient Spatial Decomposition and Scheduling of Refinery Operations Based on Continuous Time Formulation. *AIChE Annual Meeting*, Indianapolis, Nov 2002.
60. Androulakis, I.P. J.M. Grenda, J.W. Bozzelli, and M.G. Ierapetritou. Uncertainty Propagation Analyses of Chemically Activated Reaction Pathways in Gas Phase Combustion Systems. *AIChE Annual Meeting*, Indianapolis, Nov 2002.

61. Ierapetritou M.G., and V. Goyal. Process Synthesis Optimization Based on Market Data Analysis. *AIChE Annual Meeting*, Indianapolis, Nov 2002.
62. Banerjee, I. and M.G. Ierapetritou. Adaptive Kinetic Model Reduction Considering Micromixing Effects. *AIChE Annual Meeting*, Indianapolis, Nov 2002.
63. Banerjee, I. and M.G. Ierapetritou. Design Optimization under Parameter Uncertainty for General Black Box Models. *AIChE Annual Meeting*, Indianapolis, Nov 2002.
64. Ierapetritou M.G., and V. Goyal. A Novel Framework for Evaluating the Feasibility/Operability of General Non-Convex Processes. *Annual Meeting*, Indianapolis, Nov 2002.
65. Ierapetritou M.G., and V. Goyal, A Simplicial Approximation Approach to Quantify Process Feasibility. *AIChE Annual Meeting*, Reno, Nov 2001.
66. Wu D., and M.G. Ierapetritou, Using Decomposition Techniques to Solve Short-Term Scheduling Problem. *AIChE Annual Meeting*, Reno, Nov 2001.
67. Balakrishnan S., J. Banerjee and M.G. Ierapetritou, Coping with Uncertainty in the Description of Complex Kinetic Mechanisms. *AIChE Annual Meeting*, Reno, Nov 2001.
68. Ierapetritou M.G., An Efficient Approach to Quantify Process Feasibility based on Convex Hull Evaluation, ESCAPE11, Denmark, May 2001.
69. Hauksdottir A.S., and M.G. Ierapetritou, Simultaneous Decoupling and Pole Placement without Cancelling Invariant Zeros *2001 American Control Conference*, April 2001.
70. Ierapetritou M.G., A. Sirdeshpande and I.P. Androulakis, Incorporation of Uncertainty into Complex Kinetic Mechanisms. *AIChE Annual Meeting*, Los Angeles, Nov 2000.
71. Ierapetritou M.G., A New Approach for Quantifying Process Feasibility. *AIChE Annual Meeting*, Los Angeles, Nov 2000.
72. Ierapetritou M.G., J. G. Khinast and A. Bindal. A Novel Domain Decomposition Approach for Complex Multiscale Dynamic Systems. *AIChE Annual Meeting*, Los Angeles, Nov 2000.
73. Ierapetritou M.G., J. Vin. A Systematic Approach to Improve Scheduling Performance under Uncertainty. *AIChE Annual Meeting*, Los Angeles, Nov 2000.
74. Ierapetritou M.G., A. Sirdeshpande and I.P. Androulakis. Kinetic Model Reduction Considering System Variability. *AIChE Annual Meeting*, Los Angeles, Nov 2000.
75. Ierapetritou M.G., A. Sirdeshpande and I.P. Androulakis, Incorporation of Uncertainty into Complex Kinetic Mechanisms. *AIChE Annual Meeting*, Dallas, Nov 1999.
76. Floudas C.A, M.G. Ierapetritou and Z.H. Gumus, Global Optimization in Design under Uncertainty: Feasibility Test and Flexibility Index Problems. *AIChE Annual Meeting*, Dallas, Nov. 1999.
77. Hauksdottir A.S. and M.G. Ierapetritou, Simultaneous Decoupling and Pole Placement without Cancelling Invariant Zeros. *AIChE Annual Meeting*, Dallas, Nov. 1999.
78. Ierapetritou M.G., Reactive Scheduling under Uncertainty Considerations for Multiproduct Batch Plants. *AIChE Annual Meeting*, Dallas, Nov. 1999.
79. Switzer C.A., I.Massry, D.H.Berler, M.G.Ierapetritou and D.Kosson, Field Application of a Multi-Pore Regime Mass Transport Model to Evaluate Soil-Vapor Extraction and Air Sparging Remediation of Trichloroethylene Contamination. *AIChE Annual Meeting*, Dallas, Nov. 1999.
80. Ierapetritou, M.G, and I.P. Androulakis, Uncertainty Considerations in the Reduction of Chemical Reaction Mechanisms *FOCAPD*, Colorado, July 1999.

81. Ierapetritou, M.G, T. S. Hene, and C.A. Floudas, Continuous-Time Formulation for Short-Term Scheduling with Multiple Intermediate Due Dates *ESCAPE 9*, Budabest, May 1999.
82. Ierapetritou, M.G, and C.A. Floudas, Effective Continuous-Time Formulation for Short-Term Scheduling: Multiple Intermediate Due Dates *AIChE Annual Meeting*, Miami Beach, Nov 1998.
83. Ierapetritou, M.G, C.A. Floudas, S. Vansantharajan and A.S. Gullick, A Decomposition Based Approach for Optimal Location of Vertical Wells *AIChE Annual Meeting*, Miami Beach, Nov 1998.
84. Ierapetritou, M.G, and C.A. Floudas, Short-Term Scheduling: New Mathematical Models vs Algorithmic Improvements *ESCAPE8* conference, Bruge, May 1998.
85. Ierapetritou M.G. and C.A. Floudas, Effective Continuous-Time Formulation for Short-Term Scheduling: Multipurpose Batch Processes *AIChE Annual Meeting*, Los Angeles November 1997.
86. Androulakis I.P., M. G. Ierapetritou, N. N. Nayak, D.S. Monos and C.A. Floudas A Predictive Method for the Evaluation of Peptide Binding in Pocket 1 of HLA-DRB1 via Global Minimization of Energy Interactions *AIChE Annual Meeting*, Los Angeles November 1997.
87. Klepeis J.L., I.P. Androulakis, M.G. Ierapetritou and C.A. Floudas Predicting Solvated Peptide Conformations via Global Minimization *AIChE Annual Meeting*, Los Angeles November 1997.
88. Epperly T., M.G. Ierapetritou and E.N. Pistikopoulos, On the global and efficient solution of stochastic batch plant design problems *AIChE Annual Meeting*, Chicago November 1996.
89. Ierapetritou M.G., J. Acevedo and E.N. Pistikopoulos, Stochastic Optimization of Manufacturing Systems Under Uncertainty *AIChE Annual Meeting*, Chicago November 1996.
90. Pistikopoulos, E.M, T.V. Thomaidis, M. G. Ierapetritou and A. Melin, Flexibility, Reliability and Maintenance considerations in Batch Plant Design *ESCAPE6*, Rhodes, May 1996.
91. Ierapetritou, M.G. and E.N. Pistikopoulos, Design of Multiproduct Batch Plants with Uncertain Demands. *ESCAPE5*, Bled, June 1995.
92. Visweswaran V., Floudas C.A., Ierapetritou, M.G. and Pistikopoulos E.N., A Decomposition Based Global Optimization Approach for Bi-Level Convex Programming *Problems Global Optimization: Computational methods and Applications*, Princeton University, April 1995.
93. Ierapetritou, M.G. and E. N. Pistikopoulos, Design of Multiproduct Batch Plants under Uncertainty: A Global Optimization Approach. *AIChE Annual Meeting*, San Francisco November 1994.
94. Ierapetritou, M.G. and E. N. Pistikopoulos, An Optimization Approach for Process Engineering Problems under Uncertainty. *PSE4*, Korea, May 1994.
95. Pistikopoulos, E.N. and M. G. Ierapetritou, Optimization of Production and Capacity Planning under Uncertainty. *TIMS/ORSA*, Boston, April 1994 (Chairman of the Session "Models for Production Capacity Planning").
96. Ierapetritou, M.G. and E. N. Pistikopoulos, Long Range Planning under Uncertainty. *ESCAPE4*, Dublin, March 1994.
97. Ierapetritou, M.G. and E. N. Pistikopoulos, Production and Capacity Planning under Uncertainty. *ICHEME94* London, January 1994.
98. Ierapetritou, M.G., E.N. Pistikopoulos and C.A. Floudas, Operational Planning Under Uncertainty. *ESCAPE3*, Graz, June 1993.

99. Ierapetritou, M.G. and E. N. Pistikopoulos, Measuring Decision Flexibility and Economic Risk in Operational Planning. *IFORS 93*, Lisbon, July 1993.
100. Ierapetritou, M.G. and E. N. Pistikopoulos, Integration of Decision Flexibility and Economic Risk in Operational Planning. *IChemE93* Birmingham, January 1993.

INVITED PRESENTATIONS

1. University of South Carolina, January 2009.
2. Analysis of complex reaction networks using mathematical programming approaches Pan American Advanced Studies Institute Program on Process Systems Engineering (PASI), Mar Del Plata, Argentina, August 2008.
3. Systems Approaches for Analyzing Complex Process Engineering Problems. Princeton University, February 2008.
4. Process Systems Engineering Across Different Scales. Rice University, November 2007.
5. Analysis of Complex Kinetic Networks Using Systems Approaches. Lehigh University, March 2007.
6. Mathematical programming techniques to analyze complex reaction networks. CCNY, May 2007.
7. Uncertainty in Process Scheduling using Parametric Programming. Co-author with Li, Z., INFORMS (Institute for Operations Research and the Management Science) 2006.
8. Frameworks for Analyzing Complex Networks from Combustion to Metabolism: Effects of Uncertainty, MIT, March 2006.
9. A Systems Approach for Analyzing Complex Processes. University of Massachusetts at Amherst, March 2006.
10. Mathematical Programming as a tool for Learning. Tufts University, May 2006.
11. Modeling Reactive Flows using Adaptive Chemistry. Northeastern University, February 2006.
12. Short term scheduling of Chemical Processes, Keynote lecture ADCHEM (Advanced Control of Chemical Processes) Gamado, Brazil, 2006.
13. Process Design and Operations: Modeling and Optimization. 12th Symposium in Chemical Engineering, Puerto Rico, October 2005.
14. Uncertainty issues in process design and operations. Texas A&M, November 2005.
15. Combustion modeling including detailed adaptive chemistry. Lab for Surface Modification, Physics Departments, Rutgers University, 2005.
16. Uncertainty analysis for process design and operations. Pan American Advanced Studies Institute Program on Process Systems Engineering (PASI), Iguassu Falls, Brazil, August 2005.
17. Adaptive Kinetic Model Reduction Framework Considering Micromixing Effects. Imperial College, London, UK, May 2004.
18. Women in Engineering: The Myth and Reality. Society of Women Engineers, Rutgers University, April 2004.
19. Development of an Adaptive Chemistry Model for Reactive Flow Simulations. University of Rhode Island, March 2004.
20. Process Operations in Dynamic Environment. University of Kansas, February 2004.
21. Process Synthesis and Design within a Dynamic Environment. University of Southern California, February 2004.
22. Design of Flexible Module-Based manufacturing. New Jersey Institute of Technology, October 2003.

23. Modeling and Optimization of Process Design and Operations. ExxonMobil, Houston, August 2003.
24. Product Portfolio and Capacity Planning Under Uncertainty. Purdue University, February 2003.
25. Product and Process Design Optimization under Uncertainty. Ecole Polytechnique de Montreal, Canada, March 2003.
26. Optimization of Process Design and Operations Including Uncertainty. ABB July 2002.
27. Uncertainty Quantification and its Uses. Brooklyn Polytechnic, April 2002.
28. Efficient Scheduling of Refinery Operations. Honeywell Hi-Spec Solutions, Toronto, Canada, July 2002.
29. Developing Efficient Approaches to Quantify and Manage Uncertainty in Process Operations. City College of New York, October 2001.
30. Decomposition Approaches for the Efficient Solution of Short-Term Scheduling Problem. 2nd Pan American Workshop on Process Systems Engineering, Brazil Sep 19-21, 2001.
31. Short-term Scheduling under Uncertainty: Issues and Answers. Plenary Speaker, ENPROMER 2001, 3rd Mercosur Congress on Process Systems Engineering, Argentina, September 16-20, 2001.
32. Developing Efficient Approaches to Quantify and Manage Uncertainty in Process Operations, University of Iceland, May 2001.
33. "NSF Young Faculty Panel Discussion". AIChE Annual Meeting, Los Angeles, 2000.
34. Women in Academia the myth and the reality. Panel Discussion. Princeton University, April 2000.
35. Process Operations in an Uncertain Environment. Rutgers Center of Operations Research (RUTCOR), March 2000.
36. Parameter Variability in Plant Design and Synthesis. BOC Gases Technical Group, October 1998.
37. Process Design and Operations: Uncertainty and Scheduling. Department of Chemical Engineering, Carnegie Melon University, April 1998.
38. Uncertainty in Process Systems Engineering. Department of Chemical Engineering, Lehigh University, April 1997.
39. Uncertainty in Process Design and Operations. Department of Chemical Engineering, University of Arizona, Tucson, June 1997.
40. Process Design and Operations: Uncertainty and Scheduling. Department of Chemical Engineering, Berkeley, CA, April, 1997.