

Alexandros Koulouris

Chemical Engineer, PhD
Professor
Dept. of Food Science and Technology
International Hellenic University
57400 Sindos, Thessaloniki, Greece
Tel: +30 2310013576
e-mail: akoul@ihu.gr

RESEARCH INTERESTS

Process systems engineering with emphasis in food, biotech and pharmaceutical industries.
Methods and tools for process design, modeling and optimization.
Operations and supply chain management, planning and scheduling.
Process simulation software in education.
System identification and control with neural networks.

EDUCATION

Massachusetts Institute of Technology (Cambridge, MA) 1995
Ph.D. in Chemical Engineering.
Thesis Title: "Multiresolution Learning in Nonlinear Dynamic Process Modeling and Control"

Massachusetts Institute of Technology (Cambridge, MA) 1991
MSCEP: M.S. in Chemical Engineering Practice.

Aristotle University of Thessaloniki (Thessaloniki, Greece) 1988
Diploma in Chemical Engineering.

ACADEMIC WORK / LECTURING

Professor (International Hellenic University – Dept. of Food Science and Technology) 2019-today
Professor (ATEI Thessaloniki – Dept. of Food Technology) 2016-2019
Associate Professor (ATEI Thessaloniki – Dept. of Food Technology) 2008-2016

- Postgraduate Courses: *Operation Management and Scheduling of Production Systems, Enterprise Resource Planning* in the MSc Program entitled "Quality control and operations management systems in the food industry"
- Postgraduate Course: *Automation Systems in the Food Industry* in the MSc Program entitled "Applied Automation Engineering Systems" of the Dept. of Industrial Engineering and Management at IHU
- Undergraduate Courses: *Food Engineering I, Food Process Design, Food Engineering II (practicals), Computer Application in Food Technology, Instrumentation and Process Control in the Food Industries*

Adjunct Professor (ATEI Thessaloniki – Dept. of Food Technology) 2004-2007

- Graduate Course: *Information Technology Applications in the Food Industry* in the MSc Program entitled "Food Science and Nutrition"
- Undergraduate Course: *Food Process Design*

Training Course Instructor (Intelligen, Inc.) 1999-2007
Taught 2-day training course seminars on batch process design, scheduling and optimization with the use of the software tools SuperPro Designer and SchedulePro. Courses taught at universities and industrial sites and attended by professors, researchers and industrial scientists and engineers. Indicative course venues:

- *Universities:* Technical University of Delft/Netherlands, Saarland University/Germany, University of Roma-La Sapienza/Italy, National University of Singapore/Singapore, Seoul National University/S. Korea, Universiti Teknologi Malaysia/ Malaysia
- *Industries:* Sanofi-Aventis/France, Roche, Serono, Lonza, Nestlé/Switzerland, Astra-Zeneca, Pharmadule/Sweden, Boehringer-Ingelheim/Austria

ADMINISTRATIVE WORK

Head of the Food Technology Department (ATEI Thessaloniki)	2013-2017
Director of the MSc Program of the Food Science and Technology Department (ATEI & IHU)	2017- 2021
Deputy Director of the MSc Program of the Food Technology Department (ATEI Thessaloniki)	2009- 2017
Director of the Food Process Engineering Laboratory (Dept. of Food Science and Technology)	2012- today
Member of Committee for the MSc Programs Guide for ATEI Thessaloniki	2009-2010

RESEARCH WORK

<i>Project Coordinator (ATEI Thessaloniki)</i>	2018
Project "Software development services for Intelligen's 'Intelligen Suite'. Funded by Intelligen Inc.	
<i>Participant at Food MC COST Action</i>	2016-2020
Cost Action CA 15118: "Mathematical and Computer Science Methods for Food Science and Industry"	
<i>Member of the Principal Scientific Team (ATEI Thessaloniki)</i>	2016-2020
Development of innovative materials with improved thermal insulation properties for food packaging - ThermPack	
<i>Project Coordinator (ATEI Thessaloniki)</i>	2012-2015
Program Archimedes III: scientific coordinator of the project "Development of educational simulation-based modules and computer applications in food process engineering –FEPSiM"	
<i>Associate Professor & Professor (ATEI Thessaloniki & IHU)</i>	2008-today
Supervised more than 30 undergraduate and MSc student thesis research projects related to modeling of food processes, CFD modeling, production planning, operation scheduling in food industries etc.	
<i>Postdoctoral Research Associate (Massachusetts Institute of Technology)</i>	1995-1999
Participation in the research team responsible for the design and development of the object-oriented phenomena-based process modeling language MODEL.LA. Project conducted jointly by MIT and UC Berkeley under an NSF research fund. Designed and developed the following functional modules of MODEL.LA: physical properties manager and databases, thermodynamic engine, process control and scheduling. Also involved in user software training in industry (Mitsubishi Chemicals/Japan) and academia (MIT, UC Berkeley).	
<i>PhD Student (Massachusetts Institute of Technology)</i>	1991-1995
<ul style="list-style-type: none">- Development and analysis of a Wave-Net neural network based on the theory of wavelets- Development of learning algorithm for Wave-Net from a continuous feed of process measurements- Application of Wave-Net in model identification and nonlinear model predictive control	
<i>Postgraduate Researcher (Chemical Process Research Engineering Institute, Thessaloniki)</i>	1988-1989
Participation in research project for the oxidative coupling of methane to ethylene: performed kinetic studies and evaluated alternative reactor configurations.	
<i>Undergraduate Student- Diploma Thesis (Aristotle University of Thessaloniki)</i>	1988
Developed kinetic model of the thermal and catalytic steam-cracking of n-hexane.	

WORK EXPERIENCE

<i>Business Development Manager (for Intelligen, Inc. in Greece)</i>	2001-2008
<ul style="list-style-type: none">- Development of new software tools (SchedulePro) in the Intelligen Suite™ line of products- Recruiting, training and supervision of development engineers working with Intelligen in Greece- Technical support and consulting services to Intelligen customers in Europe/Asia- Training courses, presentations in scientific and technical conferences	

Senior Development Engineer (Intelligen, Inc., Scotch Plains, NJ) 1999-2001

- Development of new and improvement of existing features in Intelligen's process simulator, SuperPro Designer, for the design, modeling and optimization of processes in the fields of pharmaceutical, biotechnological and food industries
- Consulting services to software users

Industrial Intern Consultant (Dow Chemical, MI/General Electric Company, NY) 1990

Participated in four monthly team industrial projects in fulfillment of the obligations of the MIT-MSCEP program. Projects involved laboratory experimentation and use of process simulation for the modeling and optimization of industrial processes.

OTHER ACTIVITIES

Scientific Journal Refereeing

- Food and Bioproducts Processing-Official journal of European Federation of Chemical Engineering: Part C
- Pharmaceutical Engineering
- Journal of Food Engineering
- Asia-Pacific Journal of Chemical Engineering
- Process Integration and Optimization for Sustainability
- Chemical Engineering Research and Design
- Journal of Water Process Engineering

Conference Organizing and Scientific Committees

- Member of the Scientific Steering Committee for the 6th International Congress on Food Technology, Athens, 2017
- Member of the Organizing Committee for the 6th European Young Cereal Scientists and Technologists Workshop, Thessaloniki, 2017
- Member of the International Scientific Committee of FABE (Food and Biosystems Engineering) 2013, 2015 & 2019
- Member of the National Scientific Committee of ICEF11 (International Congress on Engineering and Food), 2011

PROFESSIONAL AFFILIATIONS

Member of ISEKI-Food Association (2013)
Affiliate Member, AIChE (1992)
Member, ISPE (2003)
Member, Technical Chamber of Greece (1988)

AWARDS/HONORS

- Greek National Fellowship (1983-1988).
- MIT-Ralph Landau Fellowship (1989-1990)
- PhD research and teaching fellowships, MIT (1990-1995)

COMPUTER SKILLS

Programming: C, Visual C++ & C#, FORTRAN, BASIC, HTML

Operating Systems: WINDOWS, UNIX, VMS

Databases: BDE, ODBC, OLE DB, MS Access, SQL

Applications: SuperPro Designer, SchedulePro, MATLAB, ASPEN PLUS, gPROMS, FLUENT

LANGUAGE SKILLS

Greek: mother tongue

English: Cambridge Certificate of Proficiency in English (1989). 12-year residence in the USA for graduate studies and work (1989-2001)

French: Diplôme d' Etudes Françaises (1981)

PUBLICATIONS

Book Chapters

Koulouris, A., Misailidis, N., Roussos, A., Prentzas, J., Petrides, D.P., "Food Process Simulation and Techno-Economic Assessment in Sustainable Food Manufacturing," in *Smart Food Industry: The Blockchain for Sustainable Engineering, Volume 2*, editors E. J. Lopes, L. Q. Zerpa, M. C. Depra, CRC Press (2024)

Koulouris, A., "Modeling of citric acid production using SuperPro Designer," in *Chemical Engineering Process Simulation*, editor D. C. Y. Foo, Elsevier (2022)

Petrides D., D. Carmichael, C. Siletti, and A. Koulouris, "Bioprocess Simulation and Economics," in *Essentials in Fermentation Technology*, editor A. Berenjian, Springer (2019)

Petrides D., D. Carmichael, C. Siletti, D. Vardalis, A. Koulouris, P. Lagonikos, "The role of simulation and scheduling tools in the development and manufacturing of active pharmaceutical ingredients", in *Chemical Engineering in the Pharmaceutical Industry: Active Pharmaceutical Ingredients*, editors D.J. am Ende, M.T. am Ende, 2nd edition, Wiley (2018)

Carmichael D., C.A. Siletti, A. Koulouris, and D. Petrides, "Bioprocess Simulation and Scheduling," in *Emerging Areas in Bioengineering*, editor H. N. Chang, Wiley-VCH Verlag GmbH & Co. (2018)

Papavasileiou, V., C.A. Siletti, A. Koulouris, and D. Petrides, "Bioprocess Design, Computer-Aided," in *Downstream Industrial Biotechnology: Recovery and Purification*, editor M.C. Flickinger, John Wiley & Sons (2013)

Koulouris, A., B. Bakshi, and G. Stephanopoulos, "Empirical Learning Through Neural Networks: the Wave-Net Solution", in *Advances in Chemical Engineering*, Academic Press (1995)

Bakshi, B., A. Koulouris, and G. Stephanopoulos, "Learning at Multiple Resolutions: Wavelets as Basis Functions for Artificial Neural Networks and Inductive Decision Trees", in *Wavelet Applications in Chemical Engineering*, Kluwer Academic Publishers (1994)

Scientific Journals / Conferences with Refereed Proceedings

Suckling J., G. Brussino, E. Koukouna, N. Misailidis, A. Koulouris, D. Petrides, S. Morse, M. Raats, J. Scholten, C. Westbroek, J.C.G. Halford, J.A. Harrold, A. Raben, R. Murphy, "Environmental life cycle assessment of producing sorbitol and maltitol from wheat starch using process simulation: The SWEET project," *Journal of Cleaner Production*, **494** (2025) <https://doi.org/10.1016/j.jclepro.2025.144985>

Georgiadis, G. P., Koulouris, A. "A MILP Model for the Minimization of Cycle Time in Periodic Production Scheduling using Flexible Operation Shifts," *Computer Aided Chemical Engineering*, **53**, pp1651-1656 (2024)

Koulouris, A., Georgiadis, G. P., "On the minimization of cycle time in periodic production scheduling," *Computer Aided Chemical Engineering*, **52**, pp107-112 (2023)

Koulouris, A., Georgiadis, G. P., "An exact algorithm for calculating the minimum and feasible ranges of cycle time in periodic scheduling with shared resources", *Computers and Chemical Engineering*, 175 (2023) <https://doi.org/10.1016/j.compchemeng.2023.108286>

Koulouris, A., Misailidis, N., Petrides, P., "Applications of process and digital twin models for production simulation and scheduling in the manufacturing of food ingredients and products", *Food and Bioprocess Processing*, **126**, pp.317-333 (2021) <https://doi.org/10.1016/j.fbp.2021.01.016>

Carvalho, O., Charalambides, M., Djekić I., Athanassiou, C.G., Bakalis, S., Benedito, J., Briffaz, A., Castañé, C., Della Valle, G., de Sousa, I.M.N., Erdogdu, F., Feyissa, A.H., Kavallieratos, N.G., Koulouris, A., Pojić,

M., Raymundo, A., Riudavets, J., Sarghini, F., Trematerra, P., Tonda, A., "Modelling Processes and Products in the Cereal Chain", *Foods*, 10, 82 (2021)
<https://doi.org/10.3390/foods10010082>

Dursun D. D., Koulouris A., Dalgıç A. C., "Process Simulation of Integrated Xanthan Gum and Sorbitol Bioproduction: Economic and Sensitivity Analysis with Taguchi Approach", *Process Integration and Optimization for Sustainability*, 4 (3), (2020)

Roussos, A., Misailidis N., Koulouris A., Zimbardi F., Petrides D., "A feasibility study of cellulosic isobutanol production - Process simulation and economic analysis", *Processes*, 7 (10), 667 (2019)
<https://doi.org/10.3390/pr7100667>

Dursun D. D., Koulouris A., Dalgıç A. C., "Process simulation and techno economic analysis of astaxanthin production from agro-industrial wastes", *Waste and Biomass Valorization* (2018)
<https://doi.org/10.1007/s12649-018-0439-y>

Vacharakis N., Louizaki A., Charalambous C., Rafaelides S., Koulouris A., "Techno-Economic Evaluation of β -Cyclodextrin Production from Cassava Tubers", Proceedings of FOODSIM'2018, Ghent, Belgium (2018)

Koulouris, A., Roussos A., Petrides D., "Modeling a Brewery: Capacity and Cost Analysis" , Proceedings of FOODSIM'2018, Ghent, Belgium (2018)

Koulouris, A., Kokonas K., "Tank Management in a Multi-Product Bottling Facility," *Computer Aided Chemical Engineering*, **40**, pp1357-1362 (2017)

Koulouris, A., G. Aroutidis, D. Vardalis, P. Giannoulis, V. Karakosta, "Enhancing food engineering education with interactive web-based simulations," *International Journal of Food Studies*, **4** (2015)
<https://doi.org/10.7455/ijfs/4.1.2015.a1>

Koulouris, A., D. Vardalis, "Learning to solve mass balance problems through a web-based simulation environment," *Computer Aided Chemical Engineering*, **37**, pp155 -160 (2015)

Gkekas, V., G. Botsaris, A. Koulouris, I. Christodoulidou, P. Papademas, "Simulation and Design of a Lactose to Ethanol Conversion Unit in Cyprus," Proceedings of the 1st International Conference on Mathematical Methods and Computational Techniques in Science & Engineering, MMCTSE, Athens (2014)

Petrides D., D. Carmichael, C. Siletti, A. Koulouris, "Biopharmaceutical Process Optimization with Simulation and Scheduling Tools," *Bioengineering*, **1** (4), pp. 154-187 (2014)

Koulouris, A., V. Athanasiadou, M. Kondylis, A. Tonakanian, "Web-based Simulation as an Educational Tool in Food Engineering," Proceedings of FaBE 2013-International Conference on Food and Biosystems Engineering, pp. 197-206 (2013)

Aroutidis, G., N. Georgiadis, A. Koulouris, "A Framework for Modeling Freeze Drying Food Processes Using CFD," Proceedings of FaBE 2013-International Conference on Food and Biosystems Engineering, pp. 158-166 (2013)

Koulouris, A., Kotelida I., "Simulation-based reactive scheduling in tomato processing plant with raw material uncertainty," *Computer Aided Chemical Engineering*, **29**, pp1020-1024 (2011)

Koulouris, A. "Estimating analytically the capacity of batch plants with shared equipment: a yoghurt plant case study," *ICEF11 Proceedings*, Athens (2011)

Papavasileiou, V., A. Koulouris, C.A. Siletti and D. Petrides, "Optimize manufacturing of pharmaceutical products with process simulation and production scheduling tools," *Chemical Engineering Research & Design*, **85** (A7), pp1086-1097 (2007)

Koulouris, A., C.A. Siletti and D.P. Petrides, "Scheduling Challenges in Biopharmaceutical Manufacturing," *Computer Aided Chemical Engineering*, **24**, pp589-594 (2007)

- Petrides, D., A. Koulouris and V. Papavasileiou, "Analysis and Retrofit Design of Biological Wastewater Treatment Facilities Using Process Simulation Tools", *Journal of Biotechnology*, **131**, **2**, pS268 (2007)
- Prassa, I., P. Kontogeorgou, G. Verros, A. Koulouris, and P. Samaras, "Computer Aided Design and Optimization of an Incineration Plant for Slaughterhouse Wastes", *Recent Progress in Computational Sciences and Engineering (2 vols)*, pp.1084-108, 10.1201/b12066-77. (2006).
- Koulouris, A., C.A. Siletti and D.P. Petrides, "A Resource-Constrained Scheduling Tool for Batch Biopharmaceutical Processing," *PSE Asia 2005*, pp131-135, (2005)
- Siletti, C.A, A. Koulouris, and D.P. Petrides, "Optimization of Biopharmaceutical Manufacturing with Scheduling Tools – Experiences from the Real World," *Computer Aided Chemical Engineering*, **20**, part 2, pp1045-1050 (2005)
- Koulouris, A., D.P. Petrides, "Cycle Time and Throughput Analysis in Batch Biochemical and Pharmaceutical Processing," *Computer Applications of Biotechnology 2004*, Elsevier (2004)
- Petrides, D. and A. Koulouris, "Modeling and evaluation of biological wastewater treatment facilities - What role can process simulators play?", *Computer Applications on Biotechnology*, Nancy, France, pp. 207-212 (2004)
- Koulouris, A., C.A. Siletti, D.P. Petrides, "Throughput Analysis of Batch Biochemical and Pharmaceutical Processes with Simulation and Scheduling Tools," *Computer Aided Process Engineering*, **18**, pp943-948 (2004)
- Tan, J., D.C.Y. Foo, S. Kumaresan, R.A. Aziz, A. Koulouris, "Evaluation of Debottlenecking Strategies for a Liquid Medicine Production Utilizing Batch Process Simulation", Lecture Series on Computer and Computational Sciences, ICCMSE 2004, pp666-670 (2004)
- Petrides, D.P., A. Koulouris, and P. Lagonikos, "The Role of Process Simulation in Pharmaceutical Process Development and Product Commercialization," *Pharmaceutical Engineering*, **22**, p56-65 (2002)
- Petrides, D.P., A. Koulouris, and C. Siletti, "Throughput Analysis and Debottlenecking of Biomanufacturing Facilities: A Job for Process Simulators," *Biopharm*, August Issue, p2-7 (2002)
- Koulouris, A., M. van Berlo, and D. P. Petrides. "Integrated batch chemical processes: throughput analysis, debottlenecking, and economic evaluation." *CHEMICAL TECHNOLOGY-BEDFORDVIEW*, pp. 27-32 (2001)
- Petrides D. and A. Koulouris, "Batch Process Simulation-Historical Overview and Future Outlook," *AIChE Batch Processing Topical Proceedings*, pp.293-305 (2001)
- Koulouris, A., J. Calandranis, and D. Petrides, "Throughput Analysis and Debottlenecking of Integrated Batch Chemical Processes," *Computers and Chemical Engineering*, **24**, p. 1387-1394 (2000)
- Petrides, D.P., A. Koulouris, J. Calandranis, and S. Houthysen, "Evaluation of Water Recycling Options at a Semiconductor Fabrication Plant Using Process Simulation," *Proceeding of the International Water Conference*, **61**, pp. 81-91 (2000)
- Foss, A.S., K. R. Guerts, P. J. Goodeve, K. D. Dahm, G. Stephanopoulos, J. Bieszczad and A. Koulouris, "A Phenomena-Oriented Environment for Teaching Process Modeling: Novel Modeling Software and Its Use in Problem Solving," *Chemical Engineering Education*, Fall 1999, p.292-299 (1999)
- Bieszczad, J., A. Koulouris, and G. Stephanopoulos, "MODEL.LA: A Phenomena-based Modeling Environment for Computer-Aided Process Design," *Fifth International Conference on Foundations of Computer-Aided Process Design*, *AIChE Symposium Series No.323*, **96** (1999)

Koulouris A., and G. Stephanopoulos, "Stability of NN-based MPC in the Presence of Unbounded Model Uncertainty," in *Fifth International Conference on Chemical Process Control*, AIChE Symposium Series, **93** (1997)

Koulouris, A., and G. Stephanopoulos, "Model Learning in MPC: An Intelligent Control Formulation," in *International Conference on Intelligent Systems in Process Engineering*, AIChE Symposium Series, **92** (1996)

Ohshima, M., A. Koulouris, S. Tomita, and G. Stephanopoulos, "Wave-Net based On-line Quality Inference System for Polymerization Processes", 4th IFAC Symposium on Dynamics and Control of Chemical Reactors, Distillation Columns and Batch Processes, Helsingor, Denmark (1995)

Bakshi, B., A. Koulouris, and G. Stephanopoulos, "Wave-Nets: Novel Learning Techniques, and the Induction of Physically Interpretable Models", SPIE conference, Orlando FL (1994)

Lemonidou, A., A. Koulouris, D. Varvarezos, and I. Vasalos, "A Mechanistic Model for the Catalytic Cracking of n-Hexane over Calcium Aluminate Catalysts for Producing Light Olefins", *Applied Catalysis*, **69**, 105 (1991)

Professional Journals

Papavasileiou, V., A. Koulouris, C. Siletti and D. Petrides, "The Role of Process Simulation and Scheduling Tools in the Development and Manufacture of Pharmaceutical Products", *Pharmaceutical Technology*, Nov 1 issue (2007)

Koulouris, A., D.P. Petrides, "See the Optimum- Batch Process Optimization via CAPD and Simulation," *PROCESS Worldwide*, **2**, p38-40 (2002)

PRESENTATIONS

Conferences with no Proceedings

Koulouris A., D. Vardalis, C. Siletti, D. Petrides, "Digital twin production model formulation for real-time scheduling of manufacturing processes", 14th European Congress of Chemical Engineering and 7th European Congress of Applied Biotechnology, Berlin (2023)

Koulouris A., "Integrated Food Process Simulation as a Systems Tool that Traverses Education, Research and Industry", ISEKI-Food 2018 Stuttgart (2018)

Lampridi E., A. Koulouris, "Optimal allocation of raw materials and final products on a cheese factory through linear programming," 6th International Congress on Food Technology, Athens (2017)

Koulouris, A., G. Aroutidis, D. Vardalis, V. Karakosta, "FEPSIM: a Web-based platform for teaching flow mechanics and heat transfer phenomena in food engineering," ISEKI-Food 2016 Vienna (2016)

Roussos A., Y. Stavropoulos, A. Koulouris and D. Petrides, "Biomaterial production analysis and optimization with process simulation tools," Eco-Bio 2016: Challenges in Building a Sustainable Biobased Economy, Rotterdam, The Netherlands (2016)

Roussos A., Y. Stavropoulos, A. Koulouris and D. Petrides, "Large scale algal oil production for bio-fuel use: Techno-economic analysis and evaluation," Eco-Bio 2016: Challenges in Building a Sustainable Biobased Economy, Rotterdam, The Netherlands (2016)

Roussos A., Y. Stavropoulos, A. Koulouris and D. Petrides, "Evaluation of ethanol production from renewable cellulosic resources using process simulation tools," Eco-Bio 2016: Challenges in Building a Sustainable Biobased Economy, Rotterdam, The Netherlands (2016)

Roussos A., Y. Stavropoulos, A. Koulouris and D. Petrides, "Analysis and Optimization of Wastewater Treatment Facilities using Process Simulation Tools," Eco-Bio 2016: Challenges in Building a Sustainable Biobased Economy, Rotterdam, The Netherlands (2016)

Koulouris, A., G. Aroutidis, D. Vardalis, P. Giannoulis, V. Karakosta, "Enhancing food engineering education with interactive web-based simulations," ISEKI-Food 2014 Athens (2014)

Koulouris A., C. Siletti and D. Petrides, "BIOT-235 Evaluating biopharmaceutical economics and capacity with process modeling and simulation," Abstracts of Papers of the American Chemical Society, **234** (2007)

Koulouris, A., E. Achilleos and D. Petrides, "Throughput Analysis, Debottlenecking and Optimization of Integrated Batch Chemical Processes," 3rd Chemical Engineering Conference for Collaborative Research in Eastern Mediterranean, Halkidiki (2003)

Nirupam, P., A. Koulouris, and D. Petrides, "SuperPro Designer: An Interactive Software Tool for Designing and Evaluating Integrated Chemical Manufacturing Processes," Annual AIChE Meeting, Reno NV (2001)

Petrides, D.P., P. Lagonikos, and A. Koulouris, "The Role of Modeling in Process Development and Technology Transfer," Annual AIChE Meeting, Los Angeles CA (2000)

Carmichael, D. C., and A. Koulouris. "Cost analysis and optimization of integrated biochemical processes." Abstracts Of Papers of The American Chemical Society. Vol. 219. 1155 16th St, NW, Washington, DC 20036 USA: Amer Chemical Soc. (2000)

Dahm, K., J. Bieszczad, A. Koulouris, A. Foss, and G. Stephanopoulos, "The MODEL.LA Modeling Laboratory – An Integrated Tool for Synthesis, Modeling, and Analysis in Chemical Engineering Education," Annual AIChE Meeting, Los Angeles CA (2000)

Petrides, D.P., and A. Koulouris, "The Role of Computer-Aided Process Design and Simulation in Pollution Prevention and Control," Annual AIChE Meeting, Los Angeles CA (2000)

Petrides, D.P., A. Koulouris and J. Calandranis, "The Role of Computer-Aided Design and Simulation in Pollution Prevention and Control," Spring AIChE Meeting, Atlanta GA (2000)

Koulouris, A., J. Bieszczad, and G. Stephanopoulos, "Representing Non-conservation Entities in a Phenomena-Based Modeling Environment", Annual AIChE Meeting, Dallas TX (1999)

Bieszczad, J., A. Koulouris, K. Geurts, and G. Stephanopoulos, "MODEL.LA: A Phenomena-Based Modeling Language for Process Systems Engineering", Annual AIChE Meeting, Miami FL (1998)

Bieszczad, J., A. Koulouris, K. Geurts, P. Goodeve, A. Foss, and G. Stephanopoulos, "Phenomena-Based Modeling Using MODEL.LA--Enabling Students and Computers to Communicate in the Language of Chemical Engineering", Annual AIChE Meeting, Miami FL (1998)

Koulouris, A., M. Ohshima, and G. Stephanopoulos, "The L-inf Extension of *Wave-Nets* for On-Line Identification", Annual AIChE Meeting, San Francisco CA (1994)

Koulouris, A., J. Song, and G. Stephanopoulos, "*Wave-Net* Modeling Error Estimates for Model Predictive Control", Annual AIChE Meeting, San Francisco CA (1994)

Koulouris, A., B. Bakshi, and G. Stephanopoulos, "Modeling and Characterization of Nonlinear Systems Using *Wave-Nets*", Annual AIChE Meeting, Miami FL (1992)

Vasalos, I., A. Koulouris, and D. Varvarezos, "Reactor Scale-up Factors for the Oxidative Coupling of Methane to Ethylene", 2nd European Workshop on Catalytic Methane Activation, Enschede, The Netherlands (1989)

Invited Lectures

Koulouris, A., "Bioprocess design and analysis using SuperPro Designer", On-line Lecture at the Department of Chemical Engineering, Monash University Malaysia, September 2 (2020)

Koulouris, A., "Food Process Modeling and Production Scheduling Using SuperPro Designer and SchedulePro", Workshop presented as part of FOODSIM'2018, Ghent, Belgium (2018)

Koulouris, A., "Process Design Tools Training: SuperPro Designer", 2-day training course: a FoodWasteNet event, University of Reading, July 3-4 (2017) and September 13-14 (2018)

Koulouris, A., "An Interactive, Web-based Learning Environment for Flow and Heat Transfer Phenomena in Food Engineering", Lecture at the Department of Food and Nutritional Sciences, University of Reading, July 5 (2017)

Koulouris, A., "New Developments in Biochemical Process Modeling, Scheduling and Optimization", Symposium of SuperPro Designer Users, Kuala Lumpur (2005)

Koulouris, A., "Batch Process Modeling, Scheduling and Optimization", FINE'04 A Symposium for the Pharmaceutical and Fine Chemical Industry, Stockholm (2004)