

### **Rafiqul Gani**

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https://www.pseforspeed.com/about/prof-rafiqul-gani/

Short bio-data: RAFIQUL GANI, PhD, is currently an adjunct professor at KAIST (South Korea) and a visiting professor at Texas A&M University. For 34 years, starting from 1985, Prof Gani worked at the Department of Chemical & Biochemical Engineering, Technical University of Denmark, and is the former head and co-founder of CAPEC. Prof Gani served as an editor-in-chief of Computers and Chemical Engineering journal (2009-2015) and currently serves as editor for the Sustainable Production & Consumption journal. He is also a member of the editorial advisory boards of several international journals, including Computers and Chemical Engineering and Current Opinion in Chemical Engineering. Prof Gani has been awarded Doctor Honoris Causa degrees from University Politehnica Bucharest, University of Pannonia, Babes-Bolyai University & University of Maribor. Prof Gani is the ex-president of the EFCE (2015-2018), a member of the Danish Academy of Science, a Fellow of the AIChE and a Fellow of IChemE. He received the AIChE Computers in Chemical Engineering award in 2015, the EFCE Jacques Villermaux Medal in 2019, the AIChE Sustainability Engineering Forum award in 2020 and is the winner of the IChemE Sargent Medal in 2021. In 2018, Prof Gani co-founded the PSE for SPEED Company, that develops, implements and employs state of the art PSE methods and tools to solve a wide range of problems of industrial and research significance, reliably, efficiently and very rapidly. He has published 550 articles in peer reviewed international journals and proceedings plus 5 edited books and 1 text-book. His publications have given him a H-index of 73 in GoogleScholar, 61 in SCOPUS and 54 in Web of Science (January, 2022). Prof Gani's current research interests continue with the development and application of computer aided methods and tools for modelling; property estimation; process-product synthesis, design & intensification; and process-product-tools integration with emphasis on energy, sustainability and application of a systems approach.

## **Detailed CV**

**Citizenship:** Denmark (born in Dhaka, Bangladesh), Danish Passport Holder Date of Birth: 7 September 1950

### **Professional Preparation**

Imperial College, London, UK	Chemical Engineering	PhD, 1980
Imperial College, London, UK	Chemical Engineering	MSc, DIC, 1977
Bangladesh Univ of Eng & Tech	Chemical Engineering	BSc, 1975

Appointments (current positions highlighted in **bold**)

- Senior Researcher/Asst. Professor at PLAPIQUI, Universidad del Sur, Argentina (1980-1985)
- Guest Researcher at KT, DTU (1985-1986)
- Assistant Professor (Adjunkt) at KT, DTU (1986-1989)
- Associate Professor (Lektor) at KT, DTU (1989-2000)
- Professor in Systems Design at KT, DTU (2000 2017)
- Professor in Process Plant Design at University of Twente (2010 2011) 8-weeks/year
- Vice President (Scientific) of the EFCE (2012 2014)
- President of the European Federation of Chemical Engineering (2014-2016-2018)
- Editor, Computers & Chemical Engineering journal (2006-2009)
- Editor-in-Chief, Computers & Chemical Engineering journal (2009 2015)
- Series Editor, Computer Aided Chemical Engineering, Elsevier book series (2009-)
- Distinguished (visiting) Professor, Zhejiang University, Hangzhou (2017-2020)
- CEO, PSE for SPEED company (January 2018 -)
- Visiting Professor, Texas A&M University, College Station, Texas (2018-2020)
- Distinguished (visiting) Professor, Tsinghua University, Beijing (2018-2020)
- Section Editor, BMC Chemical Engineering Journal (November 2018-2021)
- Section Editor, Sustainable Production & Consumption journal (2028-)
- Naser-chaired Professor, BUET, Dhaka, Bangladesh (2019-2020)
- Visiting Professor, Chulalongkorn University, Bangkok, Thailand (2020-2021)
- Adjunct Professor, KAIST, Daejeon, South Korea (2020-)

### Awards and Honours

- Awarded the "Fabrikant Ulrik Brinch og hustru Mari Brinchs legat" in recognition of outstanding research in the area of design, analysis and operation in chemical and process engineering, 1998.
- 14<sup>th</sup> Professor Roger R. W. H. Sargent lecturer, Imperial College, London, UK (6 December 2007)
- Fellow of AIChE (November 2008)
- Fellow of IChemE (June 2009)
- Elected as a member of ATV (Danish Academy of Science), Denmark -2010
- Recent Innovative Contribution in CAPE award (EFCE CAPE-WP) 2010
- Honorary member of the Czech Society of Chemical Engineering (2010)
- 13<sup>th</sup> Bayer Lecturer, Carnegie-Mellon University, Pittsburgh, USA (5 March 2013)
- 1<sup>st</sup> ORYX-GTL Lecturer, Texas A&M University at Qatar, Doha, Qatar (November 2103)
- Elected Council Member of IChemE, 2014
- 7<sup>th</sup> Lecturer, Tsinghua University, Beijing, China (26 February, 2014)
- Doctor Honoris Causa, University Politehnico Bucharest (31 October 2014)
- Best paper (Computers & Chemical Engineering 2014)
- Best contributed paper at FOCAPD-2014; Plus, posters and PhD-thesis (EFCE excellence award) awards won by several PhD-students working under the supervision of Rafiqul Gani.

- Doctor Honoris Causa, University of Pannonia, Vezsprem, Hungary (30 January 2015)
- Doctor Honoris Causa, Babes-Bolyai University, Cluz-Napoca, Romania (6 Nov 2015)
- Winner of 2015 AIChE-CAST Computers in Chemical Engineering Award (10 Nov 2015)
- Lindsay Lecturer 2016, Texas A&M University, College Station, Texas (2 March 2016)
- Distinguished Visiting Professor at IPE, Chinese Academy of Science, Beijing, China (2017)
- Speaker at Ezra's Round Table, Systems Engineering, Cornell University, Ithaca, USA (2018)
- Jacques Villermaux Medal 2019, European Federation of Chemical Engineering
- AIChE Sustainable Engineering Forum Research Award-2020
- IChemE Sargent Medal 2021 (to be awarded on 17 June 2021)
- Doctor Honoris Causa, University of Maribor, Maribor, Slovenia (21 Sept 2021)

## **Focused Research Areas**

Multiscale modelling for managing the complexity in process-product design; Sustainable process design and analysis, including process intensification; Computer aided product (molecule and mixture) design; Development of systematic computer aided methods & tools; Development of predictive models for prediction of properties of chemical systems.

**Publications: 550 reviewed publications** including peer-reviewed journals, peer-reviewed conference proceedings, 1 textbook, 5 edited books, & 38 book chapters; **350+ conference presentations; H-index in ISI web of science** (all database) **54; SCOPUS 61; Google Scholar 73** (see pages 6-46 for publication record, invited lectures, workshops, etc.).

Synergistic Activities (current activities are shown in **bold**)

- Member of editorial board for Clean Processes and Environmental Policies journal (2002 2006)
- Member of editorial board for Chemical Engineering Patent journal (2007 2014)
- Member of editorial board for Journal of Process Systems Engineering (2008 -)
- Member of editorial board of Sustainable Production & Consumption (2015 -)
- Member of editorial board of Computers & Chemical Engineering (2016 -)
- Member of editorial board of Processes (2017-2020)
- Member of editorial board of Current Opinion in Chemical Engineering journal (2018-)
- Chairman of EFCE Working Party on CAPE-PSE (2001 2007)
- Chairman of EURECHA, European Committee for Use of Computers in Chemical Engineering Education (1998 2007)
- Chairman of the PSE-executive board (2004 2007)
- Chairman of PSE-2015/ESCAPE-25 (Copenhagen, 2015); ECCE-6 (Copenhagen, 2007); ESCAPE-11 (Kolding, 2001); ESCAPE-1 (Elsinore, 1992)
- Member Executive Board, European Federation of Chemical Engineering, EFCE (2005 2013)
- Member of the Board of Trustees, AIChE (2009 2014)
- Member of the Board of Trustees, CAChE Corporation, USA (2011 2013)
- <u>Guest editor</u>: Computers & Chemical Engineering journal-1992, 2002, 2009, 2017, 2020; Chemical Engineering Research & Design-2008, 2013; Industrial & Engineering Chemistry Research-2008; Fluid Phase Equilibria-2018; Processes (2019-2020); Computers & Chemical Engineering (2019); BMC Chemical Engineering (2019-2020)
- <u>Member of scientific committee for conferences (2010-)</u>: ESCAPE-series; PSE-series; FOCAPDseries, FOCAPO-series, CHISA-series, ECCE-series, ICFMCE, ....
- <u>Session organizer at AIChE Annual meetings</u>: 2020, 2009, 2008, 2007, 2006, ....
- <u>Evaluation of academic positions</u> (2010-): Reader (UK), Professor (South Africa, Hong Kong, USA, Switzerland, Australia, Singapore, UK, Bangladesh, Finland, Netherlands, Saudi Arabia, ....)
- Evaluation of research project proposals (2010-): UK, Chile, Singapore, France, Germany (member of advisory board), Hungary, The Netherlands, Slovenia, Israel, Finland

- <u>PhD-thesis Examiner</u> (2010-): UK, France, Germany, Switzerland, Malaysia, South Africa, Canada
- <u>**Reviewer of journal manuscripts**</u>: AIChE J, Computers & Chem Eng, IEC Research, Chem Eng Sci, Chemical Engineering Research & Design, Fluid Phase Equilibria, J Chem Eng Data, Processes, BMC Chemical Engineering
- <u>**Reviewer of books**</u> (2010-): Cambridge University Press (USA); Academic Press (UK); John Wiley Sons (USA); Elsevier Science (NL)

## **Collaborators, Current and Graduated Students/Postdocs**

- <u>Collaboration (since 2015)</u> with academia: Prof J P O'Connell (USA); Prof E N Pistikopoulos (Texas A&M); Prof I T Cameron (University of Queensland, Australia); Prof Ka Ng (Hong Kong Technical University); Prof M Eden (Auburn Univ, USA); Prof S Assumbumrungrat (Chulalongkorn Univ, Thailand); Prof Eduardo Perez-Cisneros (UAM-Iztapalapa, Mexico); Prof M Sales-Cruz (UAM-Cuajimalpa, Mexico City); Prof Xi Chen (Zhejiang University, China), Prof Lei Zhang (Dalian University, China), Prof Zhihong Yuan (Tsinghua University, China), Prof Fengqi You (Cornell University, USA), Prof Jay H Lee (KAIST, S Korea)
- <u>Collaboration</u> with industry: After establishing and leading the CAPEC industrial consortium for 16 successful years, Prof Gani handed over the leadership to another faculty member at the department in July 2014 with 31 industrial member companies. In March 2016, the old CAPEC consortium was relaunched as the KT consortium with Prof Gani managing again the consortium activities. However, Prof Gani decided cut all links with DTU Chemical Engineering and the KT consortium at the end of 2017. Instead, Prof Gani launched "PSE for SPEED", a company providing reliable, innovative and more sustainable solutions to problems of industrial interest. Current collaborations include companies from Europe, USA, China and Thailand.
- **Supervision of PhD-projects: 61** (plus 4 co-supervision after 2017)
- **Post-docs**: 20 (last 3 completed their projects in 2017)
- <u>Supervision of MSc-level projects</u>: 104
- **<u>EU-funded projects</u>**: 14 completed
- **Teaching & educational activities** (see pages 47-50)
- **<u>Rafiqul Gani in news and video</u>** (see pages 51-52)

## Software Development & Use

- <u>Software developed</u> ICAS (Integrated Computer Aided System); PURE (Pure component property estimation); ProCAMD (Computer Aided Molecular Design); SolventPro (Solvent Screeing & Design); MoT (Modelling Tool-box); ECON (Economic Analysis tool-box); LCSoft (LCA tool-box); ProCAPD (Computer Aided Chemical Product Design); ProCAFD (Computer Aided Process Flowsheet Design); Super-O (Superstructure optimization tool-box); AzeoPro (separation of azeotropic mixtures); PDS (Separation process synthesis-design); ProCAPE (Computer Aided Chemical Property Estimation); ProREFD (Computer Aided Refrigerant Design)
- <u>Courses using developed software</u> Chemical & biochemical process design (ICAS, ProPred, ProCAMD, ECON, LCSoft); Chemical product design (ProCAPD, ProCAMD, ChemSub, ProPred); Sustainable process synthesis-design (ProCAFD, ICAS, Super-O); Sustainable product-process design (ICAS, ProCAMD, ECON, LCSoft, SolventPro, PDS, AzeoPro); Separation processes Principles & methods (PDS, AzeoPro, SolventPro, ProPred); Computer-aided modelling (MoT)
- <u>Industrial training-workshops</u> ICAS (with ProPred, ProCAMD, PDS, AzeoPro); MoT; ProCAFD; ProCAPD, ProCAPE, ProREFD
- <u>Educational institutions (special intensive courses)</u> Process simulation-design (2 weeks course in Thailand using ProII, AspenPlus, ICAS-associated tools, ProCAFD); Chemical product design (1-week intensive courses given in Malaysia, Mexico, Rumania, USA using ProPred, ProCAMD, ProCAPD); Sustainable product-process design (2-days to 5-days intensive courses given in

Holland, Mexico, Malaysia, using ICAS, ProCAMD, ProPred, SolventPro, LCSoft, ECON); Computer-aided modelling (5-days to 2-weeks intensive courses given in Holland, China, Mexico)

• <u>Educational Licesnses</u> Currently more than 75 educational institutions from all over the world (India, Bangladesh, China, Thailand, Malaysia, Mexico, Brazil, Argentina, USA, Germany, Holland, Denmark, UK, Romania, Slovenia, France, Greece, etc.) have free licenses for ICAS and associated tools.

List of Software (available from PSE for SPEED free of charge for educational institutions)

**ICAS:** Integrated computer aided system (suitable for teaching in courses like process design, product design, property estimation, etc.)

**ProCAPE**: Versatile tool for property estimation, including database search, model development and model analysis (used in applied thermodynamics courses)

**ProCAPD:** State of the art tool for chemical product design (single molecules, blends, formulations, emulsions) with data-driven, mathematical programming and hybrid techniques (used in product design courses)

**ProCAFD:** Systematic sustainable process synthesis, design, analysis and improvement in 12hierarchical steps with associated data-flow, work-flow and computer-aided tools (used in process design courses)

**MoT:** Tool for computer-aided modelling (used for graduate modelling courses)

**ProCACD:** Versatile tool for computer-aided process control (developed for use in process control courses)

**ProPEFD:** Computer-aided refrigerant design

**LCSoft:** Tool for simple and easy calculation of a wide range of LCA indicators (used in courses on process design)

**ECON:** Tool for quick and easy calculation of costs and economic analysis (used in courses in process design)

**ProREFD:** Tool for refrigerant selection, design, and verification

**ChemSub:** Software for identifying harmful chemicals from chemical products-processes, and, replacing them with less harmful & acceptable chemicals performing the same functions.

# Publication Record: Rafiqul Gani

## Ph.D. Theses and Monographs

PhD-0	<i>R. Gani, "Crude oil characterization and distillation dynamics", PhD-thesis, University of London (Imperial College), 1980.</i>
PhD-1	C. A. Ruiz, 1985, "Generalized dynamic modelling of distillation operations", PhD-thesis, Universidad del Sur, Bahia Blanca, Argentina (co-supervisor)
PhD-2	E. L. Sørensen, 1991, "Dynamic process simulation using accurate thermodynamic modelling", PhD-thesis, DTU
PhD-3	J. Perregaard, 1992, "Simulation strategies for design, analysis and optimization of chemical processes", PhD-thesis, DTU
Chapter-1	Hytoft, G., <i>Gani, R.</i> and Fredenslund, Aa., "Design and Analysis of Super-Critical Extraction Processes", Energy Efficiency in Process Technology, P. A. Pilavachi (Editor), Elsevier Applied Science, UK, 398-411, 1993.
PhD-4	B. S. Bossen, 1995, "Simulation and optimization of ammonia – plants", PhD-thesis, DTU
PhD-5	G. Hytoft, 1995, "Simulation, design and analysis of supercritical extraction processes", PhD-thesis, DTU
PhD-6	C. Jaksland, 1995, "Separation process synthesis and design based on thermodynamic insights", PhD-thesis, DTU
Chapter-2	Kndusen, K., Congilio, L., <i>Gani, R.</i> , "Correlation and prediction of phase equilibria of mixtures with supercritical compounds for a class of equations of state", in Supercritical Fluid Extraction, Editors : K. Hutchenson & N. Foster, Ch. 9, ACS Publications, 1995
Chapter-3	Fredenslund, Aa., Kontogeorgis, G. M., <i>Gani, R.</i> , "Thermodynamics and property data Bases", in CACHE Monograph on "Past, Present and Future of Computing in Chemical Engineering Educations", Ch. 7, Editor: B. Carnahan, CACHE Publications 1995
PhD-7	K. Thomsen, 1997, "Aqueous electrolytes: Model parameters and process simulation", PhD-thesis, DTU (co-supervisor)
PhD-8	E.S. Perez-Cisneros, 1997, "Modelling, Design and Analysis of Reactive Separation Processes", Ph.Dthesis, DTU, December
PhD-9	A.K. Jensen, 1998, "Generation of Problem Specific Simulation Models within an Integrated Computer Aided System", Ph.Dthesis, DTU
PhD-10	K. Bagherpour, 1998, "Simulation, Design and Analysis of Biochemical Processes", PhD- thesis, DTU
PhD-11	S. Tessendorf, 1998, "Modeling, Analysis and Design of Membrane-based Gas Separation System", PhD-thesis, DTU
PhD-12	J. Abildskov, 1998, "Extended Group Contribution Model for Polyfunctional Phase Equilibria", PhD-thesis, DTU
Chapter-4	R. Gani, F. Chen, C. Jaksland, P.M. Harper, M. Hostrup, 1998, "An Integrated Computer Aided Approach for Environmental Studies", Quantitative Structure-Activity Relationships in Environmental Science-VII Ch. 10, pp. 143-159
PhD-13	S. Balchen, 1999, "Extraction of rap-seed oil", PhD-thesis, DTU (co-supervisor)
PhD-14	M. Schenk, 1999, Design of operable reactive distillation columns", PhD-thesis, University College-London (co-supervisor)
Chapter-5	R. Gani, P.M. Harper, 1999, "Computer Aided Product Design and Pollution Prevention

	through Substitution, in Tools and Methods for Pollution Prevention", Kluwer Academic Publishers NATO ARW, pp. 299-315
Chapter-6	P.M. Harper, R. Gani, 2000, "Computer Aided Tools for Design/Selection of Environmentally Friendly Substances", Process Design Tools for Environment, chap.15, pp. 371-404 Chapter-7 R. Gani, P.M. Harper, M. Hostrup, 2000, "Solvent Based Separation: Solvent Selection", Encyclopaedia of Separation Science, Academic Press Ltd., 2 (extraction), pp. 1424-1434
PhD-15	P.M. Harper, 2000, "A Multi-Phase, Multi-Level Framework for Computer Aided Molecular Design", PhD-thesis, DTU
PhD-16	K. Takano, 2000, "Computer Aided Design and Analysis of Separation Processes with Electrolyte Systems", PhD-thesis, DTU
PhD-17	M. Hostrup, 2002, "Integrated Approach to Computer Aided Process Synthesis", PhD- thesis, DTU
Book-1	B. Braunschweig, R. Gani, 2002, "Software Architectures and Tools for Computer Aided Chemical Engineering", Computers and Chemical Engineering, 11, pp. 1-764
Book-2	L.E.K. Achenie, R. Gani, V. Venkatasubramanian, 2003, "Computer Aided Molecular Design: Theory and Practice", Computers and Chemical Engineering, 12, pp. 1-392
Chapter-8	Mauricio Sales-Cruz and Rafiqul Gani, 2003, "A Modelling Tool for Different Stages of the Process Life", in "Dynamic Model Development: Methods, Theory and Applications", S.P. Asprey and S. Macchietto (Editors), Elsevier, pp. 209-237
PhD-18	Erik Bek-Pedersen, 2003, "Synthesis and Design of Distillation based Separation Schemes", PhD-thesis, DTU
PhD-19	M.R. Eden, 2003, "Property Based Process and Product Synthesis and Design", PhD- thesis, DTU (co-supervisor)
Chapter-9	Niels Jensen, Nuria Coll, Rafiqul Gani, 2004, "An Integrated Computer Aided System for Generation and Evaluation of Sustainable Process Alternatives", in Technological Choices for Sustainability", Editors: Subhas K. Sikdar, Peter Glavič and Ravi Jain, Springer, Germany, (2004), pp. 183-214
Book-3	G.M. Kontogeorgis and Rafiqul Gani, 2004, "Computer-Aided Property Estimation for Process and Product Design", CACE 19, Elsevier Science B.V., The Netherlands, pp. 1-425
Chapter-10	Rafiqul Gani, 2006, "Integrated Chemical Product-Process Design: CAPE Perspectives", Computer Aided Process-Product Engineering – CAPE, L. Puigjaner, G. Heyen (Editors), Section 4, pp. 647-666, Wiley Interscience, Germany
Chapter-11	Rafiqul Gani and Jens Abildskov, 2006, "Integrated Computer-Aided Methods and Tools as Educational Modules", Computer Aided Process-Product Engineering - CAPE, L. Puigjaner, G. Heyen (Editors), Section 4, pp. 773-798, Wiley Interscience, Germany
Chapter-12	Rafiqul Gani and Irene Papaeconomou, 2006, "Conceptual Design and Synthesis of Batch Processes", Batch Processes, A. Linniger + E. Korovessi (Editors), CRC Publications, Buca Raton, USA, pp. 43-82
PhD-20	Núria Muro Suñé, 2005, "Prediction of solubility and diffusion properties of pesticides in polymers", PhD- thesis, DTU
PhD-21	Edgar Ramírez-Jiménez, 2005, "Modelling, Design, Operability and Analysis of Reaction- Separation Systems", PhD- thesis, DTU

PhD-22 Loïc d'Anterroches, 2005, "Process Flow Sheet Generation & Design through a Group Contribution Approach", PhD-thesis, DTU PhD-23 Irene Papaeconomou, 2005, "Integration of Synthesis and Operational Design of Batch *Processes*", *PhD-thesis*, *DTU* (co-supervisor) PhD-24 A. Mauricio Sales-Cruz, 2006, "Development of a Computer Aided Modelling System for Bio and Chemical Process and Product Design", PhD- thesis PhD-25 Hong Wen Li, 2006, "Model Analysis for Optimal Operation – A Heat Integrated Distillation Case Study", PhD- thesis, DTU (co-supervisor) Chapter-13 Martin Hostrup, Peter M. Harper, Øivind Moen, Nuria Muro-Sune, Vipasha Soni, Jens Abildskov, Rafiqul Gani, 2006, "Computer Aided Polymer Design Using Group Contribution Techniques", Integrated Multiscale Modelling for Polymer Properties Design, E.A. Perpete & M. Laso (Editors), Elsevier B.V./Ltd., Chapter 5 Ka Ming Ng, Rafiqul Gani, Kim Dam-Johansen, 2007, "Chemical Product Design: Toward Book-4 a Perspective through Case Studies", Computer-Aided Chemical Engineering, 23, pp. 1-501 Rafigul Gani, Jens Abildskov, 2007, "Modelling of Chemical Systems to Predict Product Chapter-14 Properties", Ch. 12, Product Design & Engineering, VM-1; Basics & Technologies, V. Bröckel, W. Meier, G. Wagner (Editors), Wiley-VCH, Germany PhD-26 Vipasha Soni, 2008, "Chemically Structured Products: Simultaneous model-based design of process and assisting structured materials", PhD- thesis, DTU PhD-27 Piotr M. Mitkowski, 2008, "Computer aided design and analysis of reaction-separation and separation-separation systems", PhD-thesis, DTU PhD-28 Ricardo Morales Rodriquez, 2009, "Computer-Aided Multiscale Modelling for Chemical Product-Process Design", PhD- thesis, DTU Hugo Edson Gonzalez Villalba, 2009, "Development of Group Contribution<sup>plus</sup> Models for PhD-29 Properties of Organic Chemical Systems", PhD- thesis, DTU PhD-30 Kavitha Chelakara Satyanarayana, 2009, "Computer-aided polymer design using *Multiscale modeling*", *PhD-thesis*, *DTU* (*Co-supervisor*) PhD-31 Jamal El Bashir Ali Rashed, 2009, "Model-based retrofit design and analysis of petrochemical processes", PhD- thesis, DTU PhD-32 Ravendra Singh, 2009, "Model-based Computer-aided Framework for Design of Process Monitoring and Analysis Systems", PhD- thesis, DTU PhD-33 Ana Isabel Cerqueira de Sousa Gouveia Carvalho, 2009, "Design of Sustainable Chemical Processes: Systematic Retrofit Analysis Generation and Evaluation of Alternatives", Visiting Ph.D. student, PhD-thesis, UT-Lisbon (Co-supevisor) Rafiqul Gani, Ana Carvalho and Henrique A. Matos, 2009, "Process Design for CO2 and Chapter-15 energy reduction", in "Managing CO2 Emissions", Hans-Joachim Leimkuehler (Editor), Wiley-VCH, Germany Meyer, A.S., Woodley, J.M. and Gani, R., 2009; "Process design and production of Chapter-16 chemicals. Food ingredients, fuels and pharmaceuticals", in Engineering Challenges energy, climate change and health, (Ed. C.B.Hansen), Technical University of Denmark, Lyngby, pp. 170-179 Rafiqul Gani, Vipasha Soni, Piotr T. Mitkowski, 2010, "Computer aided model based Chapter-17 design and analysis of hybrid membrane reaction-separation systems", in "Comprehensive Membrane Science and Engineering", E. Drioli (Editor), Elsevier, The Netherlands

PhD-34	Merlin Alvarado Morales, 2010, "Process-product synthesis, design and analysis through the Group Contribution (GC) approach", PhD- thesis, DTU
PhD-35	Elisa Conte, 2010, "Innovation in Integrated Chemical Product-Process Design - Development through a Model-based Systems Approach", PhD-thesis, DTU
PhD-36	Mohd. Kamaruddin bin Abd. Hamid, 2011, "Model-Based Integrated Process Design and Controller Design of Chemical Processes", PhD-thesis, DTU
Chapter-18	Ricardo Morales-Rodriguez, Rafiqul Gani, Stéphane Déchelotte, Alain Vacher and Olivier Baudouin, 2011, "Interoperability between Modelling Tools (MoT) with Thermodynamic Property Prediction Packages (Simulis® Thermodynamics) and Process Simulators (ProSimPlus) Via CAPE-OPEN Standards" in "Thermodynamics", ISBN: 978-953-307- 544-0, Volume 1, Chapter 20, pp. 425-440
Book-5	Ian Cameron, Rafiqul Gani, 2011, "Product and Process Modelling: A Case Study Approach", Elsevier, The Netherlands, 2011
PhD-37	Carlos Axel Diaz Tovar, 2011, "Computer aided modelling of lipid processing technology", PhD-thesis, DTU
PhD-38	Alicia Roman Martinez, 2011, "A model-based framework for design of intensified enzyme- based processes", PhD-thesis, DTU
PhD-39	Philip Lutze, 2012, "An innovative synthesis methodology for process intensification", PhD-thesis, DTU (co-supervisor)
PhD-40	Martina Heitzig, 2012, "Computer aided modelling for efficient and innovative product- process engineering", PhD-thesis, DTU
PhD-41	Albert Emili Cervera Padrell, 2012, "Moving from batch towards continuous organic- chemical pharmaceutical production", Ph.D. thesis, DTU (co-supervisor)
PhD-42	Wenjing Fu, 2012, "Process Design and Evaluation for Chemicals Based on Renewable Resources", Ph.D. thesis, DTU (co-supervisor)
PhD-43	Noor Asma Fazli Bin Abdul Samad, 2012, "Control of Process Operations and Monitoring of Product Qualities through Generic Model-based Framework in Crystallization Processes", Ph.D. thesis, DTU
PhD-44	Azizul Azri Bin Mustaffa, 2013, "Development and Analysis of Group Contribution <sup>Plus</sup> Models for Property Prediction of Organic Chemical Systems", Ph.D. thesis, DTU
Chapter-19	Gani, R., Gernaey, K. V. and Sin, G., 2012, "Process Systems Engineering, 1. Introduction", Ullmann's Encyclopedia of Industrial Chemistry, DOI: 10.1002/14356007.b06_317.pub2
Chapter-20	Gani, R., Cameron, I., Lucia, A., Sin, G. and Georgiadis, M., 2012, "Process Systems Engineering, 2. Modeling and Simulation", Ullmann's Encyclopedia of Industrial Chemistry, DOI: 10.1002/14356007.022 006
Chapter-21	Gani, R., Gernaey, K. V. and Sin, G., 2012, "Process Systems Engineering", Ullmann's Encyclopedia of Industrial Chemistry, Online ISBN: 9783527306732, DOI: 10.1002/14356007
Chapter-22	Rafiqul Gani, Mario R. Eden, Truls Gundersen, Michael C. Georgiadis, John. M. Woodley, Teresa López-Arenas, Mauricio Sales-Cruz, Eduardo S. Perez-Cisneros, Charles C. Solvason, Nishanth G. Chemmangattuvalappil, Mario R. Eden, Philip Lutze, Brock C. Roughton, Kyle V. Camarda, Elizabeth M. Topp, 2013, "Process Systems Engineering, 4. Process and Product Synthesis, Design, and Analysis", in Ullmann's Encyclopedia of Industrial Chemistry, DOI: 10.1002/14356007.022_008
PhD-45	Naweed Al Haque, 2013, "Integrating porous resins in enzymatic processes", PhD-thesis, May 2013 (co-supervisor)
Chapter-23	Michele Mattei, Elisa Conte, Georgios M. Kontogeorgis, Rafiqul Gani, 2012, "Prediction of thermo-physical properties of liquid formulated products", in "Product Design" (Editors: V. Broeckel, D. Wagner, W. Meier), Wiley, DOI: 10.1002/9783527654741.ch5

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Chapter-31	Deenesh K Babi, Mauricio Sales Cruz, Rafiqul Gani, 2016," Fundamentals of Process Intensification: A Process Systems Engineering View", in "Process Intensification in Chemical Engineering – Design, Optimization and Control", J G Segovia-Hernandez & A Bonilla-Petriciolet (Editors), Springer International Publishing AG (chapter 2)
PhD-54	Marina Fedorova, 2015, "Systematic methods and tools for computer aided modelling", PhD Thesis
PhD-53	Larissa P Cunico, 2015, "Modelling of phase equilibria and related properties of mixtures involving lipids", PhD Thesis
	Suttichai Assabumrungrat, Rafiqul Gani, 2015, "Sustainable process design: Sustainable Process Networks for Carbon Dioxide Conversion", Book Chapter in "Sustainability of Products, Processes and Supply Chains", Computer Aided Chemical Engineering, 36, 175-195.
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- 484 Y Chen, J Woodley, G Kontogeorgis, R Gani, 2018, "Integrated Ionic Liquid and Process Design involving Hybrid Separation Schemes", Computer Aided Chemical Engineering 44, 1045-1050
- 485 AK Tula, MR Eden, R Gani, 2018, "Hybrid Method/Tool for Sustainable Process Synthesis, Design, Analysis, and Improvement", Computer Aided Chemical Engineering 44, 475-480
- 486 KM Ng, R Gani, 2018, "Chemical Product Design: Advances in Research and Teaching", Computer Aided Chemical Engineering 44, 21-32
- 487 S Kalakul, L Zhang, HA Choudhury, NO Elbashir, MR Eden, R Gani, 2018, "ProCAPD-A Computer-Aided Model-Based Tool for Chemical Product Design and Analysis", Computer Aided Chemical Engineering 44, 469-474
- 488 N Garg, GM Kontogeorgis, JM Woodley, R Gani, 2018, "Sustainable and Innovative Solutions through an Integrated Systematic Framework", Computer Aided Chemical Engineering 44, 1165-1170
- 489 AK Tula, MR Eden, R Gani, 2018, "Time for a New Class of Methods and Computer Aided Tools to Address the Challenges Facing Us?", Chemical Engineering Transactions 70, 7-12
- 490 R Vooradi, VS Patnaikuni, AK Tula, SB Anne, MR Eden, R Gani, 2018, "Hybrid separation scheme for azeotropic mixtures - Sustainable design methodology", Chemical Engineering Transactions 69, 637-642
- 491 N Garg, AK Tula, MR Eden, GM Kontogeorgis, JM Woodley, R Gani, 2018, "Hybrid schemes for intensified chemical and biochemical process alternatives", Chemical Engineering Transactions 69, 517-522
- 492 Anjan K. Tula, Mario R. Eden, Rafiqul Gani, **2019**, "Component based development of computeraided tools for different applications", Computer Aided Chemical Engineering, 46, 91-96
- 493 Jialiang Wang, Peng Ji, Xi Chen, Anjan Tula, Rafiqul Gani, 2019, "Integrated Process and Controller Design Software Tool ProCACD", Computer Aided Chemical Engineering, 46, 745-750

- 494 Anjan K. Tula, Mario R. Eden, Rafiqul Gani, 2019, "ProCAFD: Computer-aided Tool for Sustainable Process Synthesis, Intensification and Hybrid solutions", Computer Aided Chemical Engineering, 46, 481-486,
- 495 Anjan K. Tula, Mario R. Eden and Rafiqul Gani, 2019, "Systematic Method and Tool for Sustainable Process Synthesis, Design, Analysis and Innovation", Computer Aided Chemical Engineering, 47, 385-390.
- 496 Y Li, Z Yuan, R Gani, **2020**, Synthesis of sustainable integrated process, water treatment and power generation networks, Computer Aided Chemical Engineering 48, 1063-1068
- 497 Y Li, F You, Z Yuan, R Gani, **2021**, Synthesis and Design of Sustainable Integrated Process, Water Treatment, Energy Supply Networks and Carbon Utilization Networks Under Uncertainty, Computer Aided Chemical Engineering 50, 1497-1503
- 498 S Chai, L Zhang, J Du, AK Tula, R Gani, MR Eden, 2021, A versatile modelling system for integrated chemical product design problems, Computer Aided Chemical Engineering 50, 75-80
- 499 N Kuprasertwong, O Padungwatanaroj, A Robin, K Udomwong, AK Tula, ...R Gani, 2021, Computer-Aided Refrigerant Design: New Developments, Computer Aided Chemical Engineering 50, 19-24
- 500 K Udomwong, A Robin, N Kuprasertwong, O Padungwatanaroj, AK Tula, ...R Gani, 2021, ProREFD: Tool for Automated Computer-Aided Refrigerant Design, Analysis, and Verification, Computer Aided Chemical Engineering 50, 457-462
- 501 Q Liu, L Zhang, J Du, R Gani, 2021, Computer-Aided Solvent Design Integrated with a Machine Learning-based Atom Contribution Method, Computer Aided Chemical Engineering 50, 69-74
- 502 AS Alshehri, AK Tula, L Zhang, R Gani, F You, 2021, A Platform of Machine Learning-Based Next-Generation Property Estimation Methods for CAMD, Computer Aided Chemical Engineering 50, 227-233
- 503 A Iftakher, SS Mansouri, A Nahid, AK Tula, MAAS Choudhury, JH Lee, ...R Gani, 2021, Driving Force Based Design and Control Performance Analysis of Reactive Distillation Columns, Computer Aided Chemical Engineering 50, 1209-1214
- 504 G Mongkhonsiri, A Anantpinijwatna, P Charoensuppanimit, ...R Gani, 2021, Development of sustainable integrated biorefinery networks in pulp and paper industries, Computer Aided Chemical Engineering 50, 1517-1522

## **Conference Presentations (Only plenary/keynote/invited lectures listed below – from 1995)**

- 1 *R. Gani*, L. Constantinou "Molecular structure based estimation of properties for process design", (*Invited keynote lecture*), 7th Int. Conf. on Fluid Properties & Phase Equilibria for Chemical Process Design, Snowmass, USA, June, 1995
- 2 *R. Gani*, J. P. O'Connell, "Properties and CAPE: From present uses to future challenges", (*Invited plenary paper*), Escape-9, Budapest, Hungary, May 31-June 2, 1999.
- 3 *R. Gani*, P. M. Harper, M. Hostrup, "Design of environmentally benign processes: Integration of solvent design and separation process synthesis", *(Invited plenary paper)*, Clean Products and Processes II, Lake Arrowhead, California, USA, November 14-19, 1999
- 4 *R. Gani*, "Computer Aided Process/Product Synthesis and Design: Issues, Needs and Solution Approaches", paper 264a (*CAST Plenary Session lecture*), AIChE Annual Meeting 2001, Reno, November 2001.
- 5 *R. Gani,* "The Age of Computer Aided Modelling", *Keynote lecture,* CHISA-2002, Prague, Czech Republic, 25-29 August 2002
- 6 *R. Gani,* "Solvent Selection in Chemical Engineering by Molecular Design", *Plenary lecture,* XXVII Romanian National Conference of Chemistry and Chemical Engineering, Valcea, Romania, 23-25 October 2002.

- 7 *R. Gani*, "Computer-Aided Methods and Tools for the Pharmaceutical Industry", *Invited lecture*, 1st Global PR&D Symposium on External Science Collaborations, Astra-Zeneca Macclesfield, UK, 7 November 2002.
- 8 Jorge Marrero and *Rafiqul Gani*, "Methods and Tools for Efficient Chemical Product Design: Property Estimation and Computer Aided Molecular Design" (*Keynote lecture*), European Congress of Chemical Engineering (ECCE-4), Granada, Spain, 21-25 September 2003
- 9 *R. Gani*, "The age of computer aided product-process synthesis and design" (*Plenary lecture*), International Conference on Chemical Engineering, Dhaka, Bangladesh, 29-30 December 2003
- 10 R. Gani, "Computer aided methods and tools for product-process synthesis and design" (Invited lecture), Consortium of Chemical Products and Processes Meeting, Hong Kong, 15 January 2004
- 11 *R Gani*, "The reverse approach for synthesis & design of products and processes, (*Plenary lecture*), XXV Encuentro Nacional AMIDIQ, Puerto Vallarta Jalisco, Mexico 4-8 May 2004
- 12 *R. Gani*, "Computer-aided methods ad tools for product-process synthesis & design"(*Keynote lecture*), CHISA 2004, Prague, Czech Republic, 22-26 August 2004
- 13 *R. Gani*, "Generation and evaluation of sustainable process (retrofit) alternatives", (*Plenary lecture*), CAPE-Forum, Cluj-Napoca, Rumania, 24-27 February 2005
- 14 *Rafiqul Gani*, "Integrated Chemical Product-Process Design: CAPE Perspectives", (*Plenary lecture*), ESCAPE-15, Barcelona, Spain, 29 May 1 June 2005
- 15 Rafiqul Gani, "Systematic computer aided approach to product process analysis and design", (Plenary lecture), APACT: Advances in Process Analytics and Control Technology Conference 2006, Oxford, UK, 3-5 May 2006
- 16 Rafiqul Gani, Gunnar Jonsson, Piotr Mitkowski, Vipasha Soni, "Computer aided modul-based design and analysis of hybrid membrane-reaction-separation processes", (Invited keynote lecture), Advanced Membrane Technology III: Membrane Engineering for Process Intensification, Cetero CS, Italy,11-15 June 2006
- 17 *R. Gani*, "New methods and tools for chemical product-process design", (*Invited lecture*), Trends in Chemical Engineering, UAM-Iztapalapa, Mexico City, 7-8 September 2006
- 18 Rafiqul Gani, "Systematic Computer-Aided Techniques for Use in Formulated Chemical Product Design", (Invited keynote lecture), 4th World Congress on Emulsions, Lyon, France, 3-6 October 2006
- 19 Ka M. Ng and *Rafiqul Gani*, "Product Development: from Conceptualization to Market" (*Plenary session lecture*), AIChE Annual Meeting 2006, San Francisco, USA, 12-17 November 2006
- 20 *Rafiqul Gani*, Ignacio Grossmann, "Process systems engineering and CAPE what next?", (*Plenary lecture*), ESCAPE-17, Bucharest, Romania, 27-30 May 2007
- 21 *Rafiqul Gani*, "The Age of Computer Aided Modelling and Simulation for Chemical Products and Their Processes", (*Invited keynote lecture*), The 2nd International Conference on Advances in Petrochemicals and Polymers (ICAPP 2007), Bangkok, Thailand, 25-28 June 2007
- 22 *Rafiqul Gani*, "Innovation in Integrated Chemical Product-Process Design A Systems Approach", (*Plenary lecture*), The First International Symposium on Sustainable Chemical Product and Process Engineering (SCPPE2007), Guangzhou, China, 25-28 September 2007
- 23 *Rafiqul Gani*, Henrik Wenzel, Adisa Azapagic, Michael Narodoslawsky, and Concepcion Jimenez-Gonzalez, "Sustainability Principles in Practice: a Systematic Approach", (*Plenary Session lecture*), AIChE Annual Meeting 2007, Salt Lake City, USA, 5-9 November 2007
- 24 *Rafiqul Gani*, "Models, modeling and process systems engineering what next?", (*Invited lecture*), 14th Roger Sargent Lecture 2007, Imperial College London, UK, 6 December 2007
- 25 *Rafiqul Gani*, "From property prediction to process and product design" (*Invited Lecture*), VTT-MASI presentation (VTT Symposium), Helsinki, Finland, 6 March 2008
- 26 R. Gani, "A model-based framework for design and analysis of PAT systems", (*Plenary lecture*), EuroPact 2008 (1st European Conference on Process Analytics and Control Technology), Frankfurt am Main, Germany, 22-25 April 2008

- 27 *Rafiqul Gani*, "Use of property models in chemical process-product development which, when & how?", (*Plenary lecture*), ESAT-2008, Cannes, France, 29 May 1 June, 2008
- *R. Gani*, "A model based systems approach for integrated chemical product-process design", (*Plenary lecture*), Process Development Symposium – Product Design, Jiminy Peak Resort, Massachussets, USA June 22- 25, 2008
- 29 *R Gani*, "The need and use of thermophysical databases in property modelling and for applications in process-product design, (*Plenary lecture*), The 63rd Calorimetry conference (CALCON 2008), Jersey City, New Jersey, USA, July 3-6 2008
- 30 *R. Gani*, "A process systems engineering approach for managing the complexity", ChemPor 2008, (*Plenary lecture*), 10th International Chemical and Biological Engineering Conference, Braga, Portugal, 4-6 September 2008
- R. Gani, J.M. Woodley, "Development of sustainable chemical processes", (*Invited lecture*), RES & QUIMICA-08, III Int. Symp. of Chemical Industry and Waste, Barcelona, Spain, 22-23 October 2008
- Rafiqul Gani, "Models, modelling and Chemical Engineering What Next?", (*Plenary lecture*), ICChE (International Congress of Chemical Engineering) 2008, Dhaka, Bangladesh, 31 December 2008 1 January 2009
- Rafiqul Gani, "Managing the complexity in product-process design", AMIDIQ XXX
   (Academia Mexicana de Investigación y Docencia en Ingenería Química 2009), Mazatlan, Mexico, 19-22 May (*Plenary lecture*), AMIDIQ, Mazatlan, Mexico, 19-22 May, 2009
- 34 Rafiqul Gani and John Woodley "Sustainable Design of Chemical and Biochemical Processes: The Role of Models and Modeling", 1<sup>st</sup> International Congress of Sustainability Science and Engineering (ICOSSE-2009), Cincinnati, OH, USA, 10-12 August (*Invited keynote lecture*), 1<sup>st</sup> International Congress on Sustainability Science & Engineering (ICOSSE-2009), Cincinnati, USA, 10-12 August 2009
- 35 *Rafiqul Gani*, "Modelling for PSE and Product-Process Design", 10th International Symposium on Process Systems Engineering, PSE2009, Salvador de Bahia, Brazil, 16-20 August (*Plenary lecture*)
- 36 *Rafiqul Gani*, "Sustainable product centric process design", Netherlands Process Technology Symposium 2009 (NPS-9), Veldhoven, The Netherlands, 26-28 October (*Keynote lecture*)
- 37 *Rafiqul Gani*, "Design challenges and sustainability issues in gas processing: A view from academia", 2nd Annual Gas Processing Symposium 2010, Doha, Qatar, 11-14 January (*Invited lecture*)
- Ravendra Singh, Noor Asma Fazli Abdul Samad, Krist V. Gernaey, John M. Woodley, *Rafiqul Gani*, "Mechanistic modeling for systematic design and analysis of PAT systems", 24<sup>th</sup>
   International Foundation Process Analytical Chemistry (IFPAC®), Baltimore, Maryland, USA, 31 January 4 February (*Invited Lecture*)
- 39 *Rafiqul Gani*, "Thermodynamics our molecular sister or just a forgotten relative?", CAPE Forum 2010, Aachen, Germany, 11-12 March (*Invited Lecture*)
- 40 *R. Gani*, 2010, "Solvents, green chemistry and sustainable product-process design", 2<sup>nd</sup> International Symposium on Sustainable Chemical Product and Process Engineering (2<sup>nd</sup> SCPPE), Hangzhou, China, 9-12 May (*Plenary lecture*)
- 41 *Rafiqul Gani*, 2010, "Computer aided molecular and blend design applied to fuel-related products", 3<sup>rd</sup> TMFB International Workshop, RWTH Aachen, Germany, 23-24 June (*Invited lecture*)
- 42 *R. Gani*, 2010, "Property Modelling for Applications in Chemical Product and Process Design", 21st IUPAC International Conference on Chemical Thermodynamics ICCT-2010, Tsukuba, Japan, 31 July 6 August (*Invited lecture*)
- 43 *Rafiqul Gani*, 2010, "Solvents, green chemistry and sustainable product-process design", Slovenian Chemical Technology Conference 2010, Ljubljana, Slovenia, 23 September (*Invited plenary lecture*)
- 44 *Rafiqul Gani*, 2011, "Model based process-product design and analysis", ICAMAO, Kuala Lumpur, Malaysia, 19-21 April (*Plenary Lecture*)

- 45 *Rafiqul Gani*, 2011, "Chemical Engineering Education in a Bologna Three Cycle Degree System", AMIDIQ, Quintara Rio, Mexico, 3-6 May (*Invited lecture*)
- 46 *Rafiqul Gani*, 2011, "Systematic methods for synthesis and design of sustainable chemical and biochemical processes", AMIDIQ, Quintara Rio, Mexico, 3-6 May (*Plenary lecture*)
- 47 *Martina Heitzig, Christopher Gregson, Gürkan Sin and Rafiqul Gani*, 2011, "Systematic multiscale development strategy for fragrance spraying process and transport", ECCE-8, Berlin, Germany, 26-29 September (*Keynote lecture* given by Martina Heitzig)
- 48 *Chiara Piccolo, George Hodges, Andrew Shaw, Patrick M Piccone, Rafiqul Gani, 2011, "Design of reacting systems with phase transfer catalysts",* ECCE-8, Berlin, Germany, 26-29 September (*Keynote lecture* given by Chiara Piccolo)
- 49 *Igor Mitrofanov, Gurkan Sin, Bent Sarup, Rafiqul Gani*, 2011, "Computer aided solvent selection and design framework", AIChE Annual Meeting, CAST Plenary Session, Minneapolis, USA, 16-21 October (*Plenary lecture*)
- 50 *Rafiqul Gani*, 2011, "Property modelling for applications in chemical product-process design", CBTermo-2011, Salvador, Bahia, Brazil, 22-25 November (*Plenary lecture*)
- 51 Rafiqul Gani, 2011, "Chemical engineering education: Current and future trends", 3<sup>rd</sup> International Chemical Engineering Conference, Dhaka, Bangladesh, 29-30 December (Invited plenary lecture)
- *Rafiqul Gani*, 2012, "A systems engineering approach in sustainable product-process design",
   13 Industrialist's Conference, Riyadh, Saudi Arabia, 17-19 January 2012 (*Invited lecture*)
- *Rafiqul Gani*, 2012, "A model-data based systems approach to process intensification",
   Inaugural Process Technology Institute Conference, TU Delft, The Netherlands, 2 March 2012 (*Invited plenary lecture*)
- 54 *Rafiqul Gani* and Sascha Sansonetti, 2012, "Property Modelling and Databases in Product-Process Design", 18<sup>th</sup> Symposium on Thermophysical Properties, Boulder, CO, USA, 24-29 June, *Invited keynote lecture*
- 55 *Rafiqul Gani*, 2012, "A New Paradigm for Chemical Engineering?", ANQUE ICCE 2012, Sevilla, Spain, 24-27 June, *Invited plenary lecture*
- 56 Rafiqul Gani, 2012, "Modelling of physical properties databases, uncertainties and predictive power", 22<sup>nd</sup> Internacioal Conference on Chemical Thermodynamics, ICCT 2012, Búzios, RJ, Brazil, 5-10 August, *Invited plenary lecture*
- 57 Larissa P. Cunico, Amol S. Hukkerikar, Gürkan Sin, *Rafiqul Gani*, 2012, "Molecular structure based physical properties modelling", MTMS'12 (6<sup>th</sup> International Symposium on Molecular Thermodynamics and Molecular Simulation), Higashi-Hiroshima Campus of Hiroshima University, Higashi-Hiroshima, Japan, 25-28 September, *Invited lecture*
- 58 Deenesh K. Babi, John M. Woodley, Rafiqul Gani, Jeffrey J. Siirola, Fabrício Rodrigues, 2012, "Process Synthesis, Design and Intensification: An Integrated Approach", AIChE Annual Meeting 2012, Paper 16b, Pittsburgh, USA, 27 October to 2 November, CAST plenary lecture
- 59 *Rafiqul Gani*, 2013, "Solvent selection and design", XXIII Croatian Meeting of Chemists and Chemical Engineers, Osijek, Croatia, 21-24 April , *Plenary lecture*
- 60 *Rafiqul Gani*, "Achieving sustainability through process intensification", 3<sup>rd</sup> Int Conf on Sustainable Process Design and Product Engineering, Dalian, China, 27-30 May 2013, *Plenary lecture*
- 61 *Rafiqul Gani*, "Achieving more sustainable design through process intensification", ICOSSE 2013, Cincinnati, USA, 12-15 August 2013, *Invited keynote lecture*
- 62 *Rafiqul Gani*, "Integrated sustainable product-process design", WCCE 9, Seoul, Korea, 19-23 August 2013, *Invited lecture*
- 63 *Rafiqul Gani*, "Industry-academia collaboration through the CAPEC industrial consortium", WCCE 9, Seoul, Korea, 19-23 August 2013, *Invited lecture*
- 64 *Rafiqul Gani,* "Chemical Product Engineering", XIV Congress of the French Society of Chemical Engineering, Lyon, France, 8-10 October, 2013 *Invited keynote lecture*
- 65 *Rafiqul Gani*, "Chemical Engineering Education, Research & Development in Europe", The 20th Anniversary Celebration, Department of Chemical and Biomolecular Engineering, The

Hong Kong University of Science and Technology, Hong Kong, 5 October 2013, *Plenary lectura* 

- 66 *Rafiqul Gani*, "A framework for achieving more sustainable process synthesis-designs", 2014 CAS-TWAS Symposium on Advanced Engineering Science for Sustainable Development (AES2014), Beijing, China, 28-30 May 2014, *Plenary lecture*
- 67 *Rafiqul Gani*, "A computer aided framework for multiscale modeling", Global Predictive Modeling Network Workshop "Enabling Multi-scale Modeling in Syngenta", Syngenta, RTD, North Carolina, USA, 3-5 June 2014, *Invited lecture*
- 68 Rafiqul Gani, 2014, "Achieving more sustainable solutions through process intensification", 13<sup>th</sup> Mediterranean Congress of Chemical Engineering, Barcelona, Spain, 30 September to 3 October Invited inaugural lecture
- 69 *Rafiqul Gani*, 2014, "Achieving More Sustainable Solutions through Process Intensification", The 4<sup>th</sup> TIChE International Conference 2014, Chiang Mai, Thailand, 18-19 December, *Invited keynote lecture*
- *Rafiqul Gani*, 2015, "Property model-data based chemical product-process design", X
   Iberoamerican Conference on Phase Equilibria and Fluid Properties for Process Design
   (Equifase 2015), Alicante, Spain, 28 June 1 July, *Invited plenary lecture*
- 71 *Rafiqul Gani*, 2015, "Methods and tools for kinetic model identification", Mackie-2015, Ghent, Belgium, 2-3 July, *Invited plenary lecture*
- 72 *Rafiqul Gani*, 2015, "Process Systems Engineering What Next?", PSE 2015, Chengdu, China, 13-14 August, *Invited plenary lecture*
- 73 S. Cignitti, L. Zhang, S. Kalakul, R. Gani, 2015, "Systematic computer-aided framework for sustainable chemical product design", AIChE Annual Meeting, 8-13 November 2015, Salt Lake City, USA, CAST plenary lecture
- 74 *Rafiqul Gani*, 2016, "Sustainable separation process design", ALTSEP Workshop, Washington DC, USA, 17-18 February, *Invited plenary lecture*
- 75 *Rafiqul Gani*, 2016, "New vistas for chemical process and product design", CAPE Forum 2016, Sion, Switzerland, 30 March 1 April, *Invited plenary lecture*
- 76 *Rafiqul Gani*, 2016, "New vistas for chemical process and product design", SCPPE 2016, Nanjing, China, 31 May 3 June, *Invited plenary lecture*
- 77 *Rafiqul Gani*, 2016, "Models and modelling tools for chemical product and process design", ESCAPE-26, Portoroz, Slovenia, 12-15 June, *Invited plenary lecture*
- 78 *Rafiqul Gani*, 2017, "Energy efficient and sustainable hybrid separation processes", AMIDIQ XXXVIII, Ixtapa, Mexico, 9-12 May 2017, *Invited keynote lecture*
- *Rafiqul Gani*, 2017, "Process intensification opportunities, challenges and perspectives",
   Process intensification in chemistry, petrochemistry and oil refining, St. Petersburg, Russia, 18-19 September 2017, *Invited plenary lecture*
- 80 *Rafiqul Gani*, 2017, "Computer aided methods and tools for innovative chemical productprocess design" Workshop on Quality-targeted Process Optimization and Control, 2017 Forum, Hangzhou, 11-12 Nov 2017, *Invited plenary lecture*
- 81 *Rafiqul Gani*, 2017, "Optimal Conversion of Biomass to Useful Chemicals", 1st ISBUT, Hangzhou, China, 17-19 November 2017, *Invited plenary lecture*
- 82 *Rafiqul Gani*, 2017, "A Multi Layered View of Chemical & Bio-chemical Engineering" ICFMCE 2017, Dubai, 24-26 November 2017, *Invited plenary lecture*
- 83 *Rafiqul Gani*, 2017, "A Multi Layered View of Chemical & Bio-chemical Engineering" 5<sup>th</sup> ICChE 2017, Dhaka, 21-22 December 2017, *Invited plenary lecture*
- 84 *Rafiqul Gani*, 2018, "Synthesis, design and analysis of energy efficient sustainable process alternatives", ESCAPE-28, Graz, Austria, 9-12 June 2018, *Invited keynote lecture*
- 85 *Rafiqul Gani*, 2018, "Chemical Product Design: Advances in Research and Teaching", PSE-2018, San Diego, USA, 1-5 July 2018, *Invited plenary lecture*
- 86 *Rafiqul Gani*, 2018, "Optimal conversion of biomass to useful chemicals", A to Z of Biorefinery, Bangkok, Thailand, 18-19 July, 2018, *Invited plenary lecture*

- 87 *Rafiqul Gani*, 2018, "Time for a New Class of Methods and Computer Aided Tools to Address the Challenges Facing Us?", PRES-2018, Prague, Czech Republic, 25-28 August 2018, *Invited keynote lecture*
- 88 *Rafiqul Gani*, 2019, "Component based development of computer-aided tools for different applications", PSE Asia, Bangkok, Thailand, January 2019, *Invited plenary lecture*
- 89 *Rafiqul Gani*, 2019, "Synthesis, design and analysis of energy efficient sustainable process alternatives", SCPPE 2019, Tianjin, China, 1-3 July, 2019, *Invited plenary lecture*
- 90 *Rafiqul Gani*, 2019, "Distillation: Prof Sargent's contribution & current state of the art", FOCAPD 2019, Copper Mountain Resort, Colorado, USA, 14-18 July, 2019, *Invited plenary lecture*
- 91 *Rafiqul Gani*, 2020, "Opportunities and challenges to find sustainable alternatives", SPIL2020-0141: SPIL Conference (*Invited Talk*), Brno, Czech Republic, 18-20 November 2020
- 92 *Rafiqul Gani*, 2020, "Resources, sustainability, circular economy, sustainable development, and?", Paper 442a; Session: Sustainable Engineering Forum Plenary (*Invited Talk*), AIChE Annual Meeting 2020, San Francisco, USA, 15-20 Nov 2020

## Invited Seminars (from 2009 - present)

- Rafiqul Gani, 2009, "Multiscale and multidimension models for process product design", Chemical Engineering, TU-Dortmund, Germany, 3-4 February
- Rafiqul Gani, 2009, "CAPEC and ICAS: Overview", Cognis GmbH, Düsseldorf, Germany, 9 July
- Rafiqul Gani, 2009, "Computer aided polymer design using multiscale modelling", The Petroleum and Petrochemical College (PPC), Chulalongkorn University, Bangkok, Thailand, 5 October
- Rafiqul Gani, 2009, "A process systems engineering approach for managing the complexity in product-process design", PROSPECT, Universiti Teknologi Malaysia (UTM), Malaysia, 13-14 October
- Rafiqul Gani, 2009, "Property modeling for applications in chemical product and process design", National Institute of Standards and Technology (NIST), Boulder, CO, USA, 6 November
- Rafiqul Gani, 2009, "A Process Systems Engineering Approach for Managing the Complexity in Chemical Product-Process Design", Auburn University, AL, USA, 16 November (**The Ginn Distinguished Lecture**)
- Rafiqul Gani, 2009, "A Process Systems Engineering Approach for Managing the Complexity in Chemical Product-Process Design", Department of Chemical Engineering, Virginia Polytechnic Institute and State University, USA, 18 November
- Rafiqul Gani, 2009, "Solvent selection and design", Green Chemistry Centre, York University, UK, 26-28 November
- Rafiqul Gani, 2009, "A Process Systems Engineering Approach for Managing the Complexity in Chemical Product-Process Design", Instituto Superior Tecnico, Dept. Engenharia Quimica e Biologica, Lisbon, Portugal, 11 December

## Invited Seminars 2010

- Rafiqul Gani, 2010, "Solvent Selection and Design", RWTH Aachen, Germany, 22 January
- R. Gani, 2010, "Solvents, green chemistry and sustainable product-process design", TU-Delft, TU-Eindhoven, University of Twente, The Netherlands, 7-9 April
- R. Gani, 2010, "A process systems engineering approach to managing the complexity in chemical product process design", Tsinghua University; Beijing, China, 14 May
- Rafiqul Gani, 2010, "Property modeling for applications in chemical product and process design", University of Ghent, Belgium, 12 July
- Rafiqul Gani, 2010, "Managing Complexity in Product Process Engineering", Mitsubishi Chemical Corporation, Kashima Plant, Kashima, Japan, 3 August
- R. Gani, 2010, "Design and synthesis of chemical and biochemical processes", PPC, Chulalongkorn University, Bangkok, Thailand, 5 October
- Rafiqul Gani, 2010, "Sustainable Chemical and Bio-chemical Process Design", GlaxoSmithKline, Philadelphia, USA, 15 November

- Rafiqul Gani, 2010, "Property modelling for applications in product and process Engineering", Sogang University, South Korea, 30 November
- Rafiqul Gani, 2010, "Managing the complexity in product and process engineering", Yonsei University, South Korea, 1 December (10:00 am)
- Rafiqul Gani 2010, "Solvents, green chemistry and sustainable product-process design", Seoul National University, Seoul, South Korea, 1 December (5:00 pm)
- Rafiqul Gani 2010, "Sustainable design of chemical and bio-chemical processes", Korea University, Seoul, South Korea, 2 December

## **Invited Seminars 2011**

- Rafiqul Gani, 2011, CAPEC Overview and Status 2011, DSM, The Netherlands, 27 January
- Rafiqul Gani, 2011, CAPEC Overview and Status 2011, Lonza, Switzerland, 10 February
- Rafiqul Gani , 2011, "Managing the Complexity in Product and Process Engineering", Departmental Seminar, NTUA, Athens, Greece, 17 March
- Rafiqul Gani, 2011, "Building and sustaining an Industrial Consortium The experience of DTU-CAPEC", UTM, Johar Bahru, Malaysia, 22 April 2011
- Rafiqul Gani, 2011, "Integrated Computer Aided System ICAS", Department of Chemical and Biological Engineering, KAIST, Daejeon, Korea, 3 November 2011
- Rafiqul Gani, 2011, "Property prediction for product-process design", Department of Chemical Engineering, UNICAMP, Campinas, Brazil, 21 November 2011 Invited seminars in 2012
- Rafiqul Gani, 2012, "Research at CAPEC", Mitsubishi Research Center, Mizushima, Japan, 27 Sept
- Rafiqul Gani, 2012, "Pesticide uptake modeling", Syngenta, Jealott's International Research Centre, UK, 7 November
- Rafiqul Gani, 2012, "Computational Solvent Design for Integrated Chemical Processes", International Symposium InPROMPT 2012, Berlin, Germany, 15-16 November
- Rafiqul Gani, 2012, "Recent advances in CAPE and PSE applicable to the Pharmaceuticals Industry", AstraZeneca, UK, 19 December Invited seminars in 2013
- Rafiqul Gani, 2013, "Computer aided solvent selection, design and analysis", Carnegie-Mellon University, USA, 5 March (**Bayer Lecture**)
- Rafiqul Gani, 2013, "Industry-academia collaboration through the CAPEC industrial consortium", Pfizer, CT, USA, 7 March
- Rafiqul Gani, 2013, "Methods an tools for process Systems Engineering", KAIST, Korea, 24 August
- Rafiqul Gani, 2013, "A new paradigm for chemical engineering?", Texas A&M University at Qatar, Doha, 27 November (1<sup>st</sup> ORYX-GTL Lecture) Invited seminars in 2014
- Rafiqul Gani, 2014, "Managing the complexity in chemical product design and development", Tsinghua University, Beijing, China, 26 February (7<sup>th</sup> Tsinghua Forum in Chem Eng Lecture)
- Rafiqul Gani, 2014, "Achieving more sustainable solutions through process intensification", Institute for Process Engineering, Chinese Academy of Science, Beijing, China, 28 February.
- Rafiqul Gani, 2014, "Achieving more sustainable solutions through process intensification", Northwestern University, Departmental Seminar, Chicago, USA, 17 April
- Rafiqul Gani, 2014, "Managing the Complexity in Chemical Product Engineering", Northwestern University, Chicago, USA, 18 April
- Rafiqul Gani, 2014, "A new paradigm for chemical engineering?", Tsinghua University, Beijing, China, 30 May
- Rafiqul Gani, 2014, "Achieving more sustainable solutions through process intensifications", Tianjin University, Tianjin, China, 24 May
- Rafiqul Gani, 2014, "Overview of CAPEC and ICAS", SINOPEC, Beijing, China, 26 May

- Rafiqul Gani, 2014, "The Challenges of Chemical Engineering and CAPE, answer from Chemical Engineering in Denmark", Centre for Technology Transfer in the Process Industries (CTTIP), University Politehnica of Bucharest, Bucharest, Romania, 31 October
- Rafiqul Gani, 2014, "A Lecture in the course on MSc and PhD Computer Aided Mixture Design", Centre for Technology Transfer in the Process Industries (CTTIP), University Politehnica of Bucharest, Bucharest, Romania, 31 October
- Rafiqul Gani, 2014, "The need and challenge to find more sustainable alternatives for the modern society", Seoul National University (SNU), Engineering Development Research Center (EDRC), Seoul, South Korea, 5 December Invited seminars in 2015
- Rafiqul Gani, 2015, "The need and challenge to find more sustainable solutions for the modern society", University of Pannonia, Veszprem, Hungary, 30 January
- Rafiqul Gani, 2015, "Tailor-made more sustainable design", **BASF Science Symposium**, Ludwigshaven, 8-10 March
- Rafiqul Gani, 2015, "Tailor-made more sustainable design", Sinopec Engineering Incorporation, Beijing, 1 April
- Rafiqul Gani, 2015, "Tailor-made more sustainable design", Tsinghua University, Beijing, 3 April
- Rafiqul Gani, 2015, "Models, modelling and PSE what next?", ECUST (East China University of Science & Technology), Shanghai, 25 April
- Rafiqul Gani, 2015, "A process system engineering approach to managing the complexity in productprocess design", ECUST (East China University of Science & Technology), Shanghai, 25 April **Invited seminars in 2016**
- Rafiqul Gani, 2016, "Achieving more sustainable solutions through process intensification", Universidad de Guanajuato, Guanajuato, Mexico, 8 January
- Rafiqul Gani, 2016, "Lecture series on Process Systems Engineering" 4 lectures, Instituto Technologico de Celaya, Celaya, Mexico, 12-15 January
- Rafiqul Gani, 2016, "New vistas in chemical product and process design", Texas A&M University, College Station, Texas, USA, 2 March (Lindsay Lecture)
- Rafiqul Gani, 2016, "Modelling, models and model based systems for PSE", Zhejiang University, Hangzhou, China, 22 April
- Rafiqul Gani, 2016, "New vistas in chemical product and process design", Tsinghua University, Beijing, China, 27 April
- Rafiqul Gani, 2016, "New vistas in chemical product and process design", Nanjing Technical University, Nanjing, China, 31 May
- Rafiqul Gani, 2016, "New vistas in chemical product and process design", ESIQIE, Mexico City, Mexico, 10 November Invited seminars in 2017
- Rafiqul Gani, 2017, "New vistas in chemical product and process design", University of the Chinese Academy of Sciences (UCAS), Beijing, China, 22 March (Distinguish Professor Lecture Series)
- Rafiqul Gani, 2017, "Sustainable process synthesis & design", Institute of Engineering Thermophysics, Beijing China, 24 March (Distinguish Professor Lecture Series)
- Rafiqul Gani, 2017, "Sustainable process synthesis-intensification", IETS Workshop, Berlin, 5 April
- Rafiqul Gani, 2017, "New vistas in chemical product and process design", Departmental Seminar, Cornell University, Ithaca, USA, 17 April
- Rafiqul Gani, 2017, "Sustainable process synthesis & design", Taiyuan University of Technology, Taiyuan, China, 15 May (**Distinguish Professor Lecture Series**)
- Rafiqul Gani, 2017, "New vistas in chemical product and process design", Shanxi University, Shanxi, China, 16 May (**Distinguish Professor Lecture Series**)
- Rafiqul Gani, 2017, "Energy efficient and sustainable hybrid separation processes", Tsinghua University, Beijing, China, 17 May (**Distinguish Professor Lecture Series**)

- Rafiqul Gani, 2017, "Energy efficient and sustainable hybrid separation processes", China University of Petroleum, Beijing, China, 18 May (**Distinguish Professor Lecture Series**)
- Rafiqul Gani, 2017, "Sustainability & Sustainable Development", Chunhui Middle School Lecture, Shangyu, China, 28 November

# **Invited seminars 2018**

- Rafiqul Gani, 2018, "Synthesis, design and analysis of energy efficient sustainable process alternatives", Energy Institute, Texas A&M University, College Station, Texas, USA, 19 March
- Rafiqul Gani, 2018, "Synthesis, design and analysis of energy efficient sustainable process alternatives", PSE Center, ECUST, Shanghai, China, 16 April
- Rafiqul Gani, 2018, "Synthesis, design and analysis of energy efficient sustainable process alternatives", South China University of Technology, Guangzhou, China, 20 April
- Rafiqul Gani, 2018, "Synthesis, design and analysis of energy efficient sustainable process alternatives", Sun Yat Sen University, Zhuhai Campus, Zhuhai, China, 24 July
- Rafiqul Gani, 2018, "Synthesis, design and analysis of energy efficient sustainable process alternatives", Tsinghua University, Beijing, China, 20 August
- Rafiqul Gani, 2018, "Time for a New Class of Methods and Computer Aided Tools to Address the Challenges Facing Us?", Cornell University, Ithaca, USA, 26 October (Ezra's Round Table Seminar)
- Rafiqul Gani, 2019, "Systematic Process Intensification: Methodology, Associated Computer-Aided Tools & Application Examples", **ExxonMobil**, New Jersey, USA, 2 November
- Rafiqul Gani, 2018, "Time for a New Class of Methods and Computer Aided Tools to Address the Challenges Facing Us?", BUET, Dhaka, Bangladesh, 8 December **Invited seminars 2019**
- Rafiqul Gani, 2019, "Systematic Process Intensification: Methodology, Associated Computer-Aided Tools & Application Examples", UAM, Azapolazlaco, Mexico City, Mexico, 22 January
- Rafiqul Gani, 2019, "Synthesis, design and analysis of energy efficient sustainable process alternatives?", UAM, Iztapalapa, Mexico City, Mexico, 23 January
- Rafiqul Gani, 2019, "Time for a New Class of Methods and Computer Aided Tools to Address the Challenges Facing Us?", UAM, Caujimalpa, Mexico City, Mexico, 24 January
- Rafiqul Gani, 2019, "Synthesis, design and analysis of energy efficient sustainable process alternatives", Imperial College, London, UK, 13 February
- Rafiqul Gani, 2019, "Synthesis, design and analysis of energy efficient sustainable process alternatives", Texas A&M Prairee View, USA 7 March
- Rafiqul Gani, 2019, "Synthesis, design and analysis of energy efficient sustainable process alternatives", CASC, Univ of Houston, USA, 24 March
- Rafiqul Gani, 2019, "Systematic and efficient process-product synthesis, design & innovation", Wanhua Company, Yantie City, China, 23 April
- Rafiqul Gani, 2019, "Systematic PSE Methods and Tools for the Pharmaceutical Industry", Zhejiang University, Hangzhou, China, 25 April
- Rafiqul Gani, 2019, "Systematic and efficient integration of process design and control", Zhejiang University, Hangzhou, China, 29 April
- Rafiqul Gani, 2019, "New vistas in chemical product and process design", University of Bremen, Bremen, Germany, 4 July
- Rafiqul Gani, 2019, "Systematic industrial problem solution: methods, tools and examples", Zhejiang University, Hangzhou, China, 29 July
- Rafiqul Gani, 2019, "Computer-aided process intensification techniques", Bangladesh Univ of Engineering & Technology, Dhaka, Bangladesh, 25 Nov Invited seminars (Webinars) 2020
- Rafiqul Gani, 2020, "Computer Aided Process Intensification: Challenges, trends and opportunities", Webinar organized by the AIChE RAPID Institute, USA, 27 May

- Rafiqul Gani, 2020, "Sustainability in the water-energy-food-environment nexus: The role of chemical engineers", Webinar organized by BUET, Dhaka, Bangladesh, 25 July
- Rafiqul Gani, 2020, "Understanding Process System Engineering and Its Applications", Webinar organized by BUET, Dhaka, Bangladesh, 22 August
- Rafiqul Gani, 2020, "The water-energy-food-environment nexus and the means to obtain sustainable solutions", 20<sup>th</sup> anniversary of the Postgraduate Programs in Chemical Engineering, University of Guanajuato, 5 October
- Rafiqul Gani, 2020, "Effective Industry-Academia Collaboration: What is an Appropriate Model?", Webinar organized by BUET, Dhaka, Bangladesh, 7 November Invited seminars (webinars) 2021
- Rafiqul Gani, 2021, "Next generation of PSE and sustainable chemical engineering", ChemPlus 2021 (Webinar organized by IIT Madras), 26 March 2021
- Rafiqul Gani, 2021, "Properties of organic chemicals: Databases and estimation methods", Scientific Advisory Board meeting, 15 June 2021
- Rafiqul Gani, 2021, "New views in chemical product and process design", ENEIQ (Webinar organized by UNC, Bogotoa), 2 July 2021
- Rafiqul Gani, 2021, "Models, modelling & a systems approach to model development", Sargent Medal 2021 Lecture (webinar organized by IChemE), 17 July 2021
   Invited seminars (webinars) 2022
- Rafiqul Gani, 2022, "Sustainable process synthesis, design and analysis: Challenges and opportunities", Manipal University, Jaipur, India, 28 January, 2022

## **Teaching Activities**

MSc-level courses at DTU (1985-2017):

- C28412 Computer aided chemical product design (7.5 ECTS points; 14 weeks)
- C28420 Separation process principles (7.5 ECTS points; 14 weeks)
- C28350 Process design: Principles and methods for chemical and biochemical processes (10 ECTS points; 14 weeks)
- C88705 Process design: Principles and methods for chemical and biochemical processes (10 ECTS points; 6 weeks) this course is given as part of the joint DTU-UCAS (China) MSc-degree course

PhD-level courses at DTU (1985-2017):

- C28901 Advanced computer aided modelling (7.5 ECTS points; intensive course, 3 weeks)
- C28902 Process and tools integration (7.5 ECTS points; intensive course, 3 weeks)
- C28905 Advances in process systems engineering (7.5 ECTS points; intensive course, 3 weeks)

Title	For	Location	Date (participants)
ICAS (ProCAMD & SustainPro)	GSK	Stevenage, UK	March 2010
workshop			
ICAS-Tools Workshop	CAPEC industrial	Kolle Kolle,	4 June 2010 (20)
	consortium	Væerløse	
Sustainable product centric process	University of	The Netherlands	14-15 June 2010 (15
design (2-days PhD course)	Twente		participants)

External courses/workshops (from 2010 - present)

ICAS (ProCAMD & SustainPro)	AstraZeneca	Huddersfield,	22 July 2010 (12
workshop		UK	participants)
Chemical product design (1-day	CHISA-2010	Prague, Czech	31 August 2010 (14
workshop)		<b>U</b>	participants)
Advanced computer aided	University of	The Netherlands	1-6 September 2010
modelling (5-day PhD course)	Twente		(18 participants)
Process simulation and design (2-	Petroleum and	Bangkok,	28 Sept -10 October
week course for MSc-students)	Polymer College	Thailand	2010
	PPC),		(28 participants)
	Chulalongkorn		
	University		
Integrated process-product design	Texas A&M	College Station,	October, 2010 (20
	University	Texas, USA	participants)
ICAS (ProCAMD & SustainPro)	GSK	Philadelphia,	November 2010 (10
workshop	~ .	USA	participants)
ICAS workshop	Cognis	Dusseldorf,	December 2010 (10
		Germany	participants)
ICAS workshop	DSM	Holland	January 2011 (20)
Sustainable product centric process	University of	The Netherlands	3-4 March 2011 (16
design (2-days PhD course)	Twente		participants)
Virtual product design lab (one-day	NTUA	Athens, Greece	16 March 2011 (14
workshop)		<b>X</b> 7 1 <b>X</b>	participants
Sustainable product centric process	UTM-PROSPECT	Kuala Lumpur,	17-18 April 2011 (28
design (2-days workshop)		Malaysia	participants)
ICAS workshop	CAPEC-PROCESS	Scanticon,	10 June 2011 (24
	TLI Deulin	Borupgaard	participants)
Chemical process design –	I U-Berlin	Berlin,	16 August, 2011 (50
systematic generation & analysis of		Germany	participants)
Sustainable process alternatives	DDC Chulalan alaam	Doubleals	27 Sant 0 Ostahar
Process simulation and design (2-	PPC, Chulalongkorn	Daligkok,	27 Sept -9 October
ICAS workshop		Thananu Degigon Korge	$\frac{2011}{20} \frac{2011}{20} \frac{2011}{10} \frac{2011}{10}$
ICAS workshop	KAIS I	Daejeoli, Kolea	participants)
Property modelling (mini course)	UNICAMP	Campinas Sao	21 November 2011
Toperty moderning (mini course)		Paolo Brazil	(30 participants)
Advanced computer aided	University of	The Netherlands	30 November- 3
modelling (4-day PhD course)	Twente		December 2011 (8
inodenning (1 duy 1 nd course)	1 wente		participants)
ICAS Workshop	CAPEC-Process	DTU Lyngby	7 June 2012 (24
	Annual meeting	Die, Lyngoy	participants)
Sustainable product centric process	TU-Delft	The Netherlands	May 2012 (15
design (2-days PhD course)	10 Dont		participants)
Process simulation and design (2-	PPC, Chulalongkorn	Bangkok.	1-12 October 2012
week course for MSc-students)	University	Thailand	(42 participants)
ICAS Workshop	Pfizer	Groton, USA	7 March 2013 (10
· r		, - ~	participants)
Sustainable product centric process	TU-Delft	The Netherlands	15-16 May 2013 (22
design (2-days PhD course)			participants)
ICAS Workshop	CAPEC-Process	DTU, Lyngby	5 June 2013 (25
·	Annual meeting		participants)
Integrated product-process design	PSE-Asia	Kuala Lumpur,	23 June 2013 (28
		Malaysia	participants)

Chemical process design –	TU-Berlin	Berlin,	28 August, 2013 (50
systematic generation & analysis of		Germany	participants)
sustainable process alternatives			
Process simulation and design (2-	PPC, Chulalongkorn	Bangkok.	23 September – 4
week course for MSc-students)	University	Thailand	October 2013
Sustainable product centric process	TU-Delft	The Netherlands	14-15 May 2014 (32
design (2-days PhD course)	10 2000		participants)
ICAS Workshop	CAPEC-Process	DTU Lyngby	10 June 2014 (20
	Annual meeting	Die, Ljiigej	participants)
Process simulation and design (2-	PPC Chulalongkorn	Bangkok	6 -17 October 2014
week course for MSc-students)	University	Thailand	(32 participants)
Property modelling or process &	KAIST	Daeieon Korea	3-4 December 2014
product design (2-day course for		Ducjeon, Rorea	(20 participants)
PhD-students)			(20 purifeipunts)
Introduction to ICAS	FCUST	Shanghai China	25 April 2015
Sustainable product centric process	TU-Delft	The Netherlands	2-3 November 2015
design (2-days PhD course)	10-Dent	The recitementations	(24 participants)
Process simulation and design (2-	PPC Chulalongkorn	Bangkok	12-23 October 2015
week course for MSc_students)	University	Thailand	(28  participants)
Chemical product design &	UTM	Johor Baru	9 10 December 2015
development (2 days Workshop)	U I WI	Johor Daru, Malaysia	(15 participants)
Methods & tools in process systems	Instituto	Colova Movico	(15 participants)
angingering (4 days workshop)	Tecnologico de	Celaya, Mexico	(20  participants)
engineering (4-days workshop)	Celava		(50 participants)
Sustainable chamical process	SCG Chamicala	Davong	25 20 January 2016
design (5 days workshop)	SCO Chemicais	Thailand	(12  participants)
Modelling of CO2 conture	KAIST	Dagigon Korga	(12 participants)
processes	KAIS I	Daejeon, Korea	(10 participants)
A dyangad computer aided	Zhajiang University	Uangzhou	18 13 Sontombor 2016
modelling (1 week course:	Zhejiang Oniversity	China	(20 participants)
PhD/MSc students)		Ciiiia	(20 participants)
Process simulation and design (2	DDC Chulalongkorn	Dangkok	10.21 October 2016
week course for MSc students)	Linivorsity	Daligkok, Theiland	(30  participants)
Process simulation	NIT Worongol	Warangal India	(30 participants)
(1 week course for MSe students)	INIT Wataligat	warangar, mura	(42  participants)
Thermodynamic properties what	SCC Chamicala	Davong	(42 participants)
when how	SCO Chemicais	Rayong, Theiland	(12  participants)
Sustainable product contria process	TU Dolft	Thananu Tha Natharlanda	(12  participants)
design (2 days PhD source)	I U-Delli	The methemanus	2-5 Julie 2017 (10
Chamical product synthesis design	DSE for SDEED	Dangkok	17.18 July 2017 (17
chemical product synthesis-design-	PSE IOI SPEED	Daligkok,	1/-18 July 201/ (1/
Sustainable grasses sumthasis	DEE for CDEED	Thanana Den else ls	participants)
design analysis (2 days workshop)	PSE IOF SPEED	Bangkok,	20-21 July 2017 (18
design- analysis (2 days workshop)			participants)
innovative and sustainable	NII Iiruchirappain	I iruchirappalii,	28 August $-1$
chemical process analysis, design,		mana	September 2017 (40
A dupped constant in 1	Terres A.O. MITT '	Caller Ct. d	5.9 March 2019 (24
Advanced computer aided	i exas A& M Univ	College Station,	5-8 March 2018 (34
modelling (4 days course)		Texas, USA	participants)
Sustainable process synthesis,	Texas A& M Univ	College Station,	20-27 March 2018 (25
design, analysis through 12		Texas, USA	participants)
hierarchical tasks: Innovative			

solutions for sustainable development (2 days workshop)			
Sustainable product centric process design (2-days PhD course)	TU-Delft	The Netherlands	14-15 May 2018 (20 participants)
Chemical product design and associated properties modelling	Universidad Nacional de Colombia	Bogota, Colombia	18-21 June 2018 (40 participants)
Advanced computer aided modelling (MSc-PhD course)	Tsinghua Univ	Beijing, China	8-17 August, 2018 (9 participants)
Advanced computer aided modelling (special course)	NIT-Warangal	Warangal, India	3-7 September, 2018 (40 participants)
Computer aided chemical product design (3 days workshop)	Texas A&M Univ	College Station, Texas, USA	4-6 March 2019 (20 participants)
Sustainable development through process intensification (MSc- course)	Texas A&M Univ	College Station, Texas, USA	20-28 March 2019 (12 participants)
Sustainable product centric process design (2-days PhD course)	TU-Delft	The Netherlands	28-29 May 2019 (24 participants)
Fast, efficient & reliable problem solution through a new class of software tools (2-days course)	KAIST	South Korea	20-21 August 2019 (20 participants)
Fast, efficient & reliable problem solution through a new class of software tools (2-days course)	Tsinghua University	China	26-27 August 2019 (16 participants)
Fast, efficient & reliable problem solution through a new class of software tools (2-days course)	BUET	Bangladesh	1-2 December 2019 (34 participants)
Sustainable process design (graduate level course)	BUET	Bangladesh	22 Nov – 14 Dec, 2019 (20 participants)
Sustainable development through process intensification (MSc- course)	Texas A&M Univ (online)	College Station, Texas, USA	15-30 March 2020 (6)
Sustainable process design	KAIST	South Korea	25 August 2020 (>50)
Webinar Series 2021: Fast, efficient & reliable problem solution (6 webinars)	PSE for SPEED	Thailand, Denmark	16 July -16 September 2021

### **Rafiqul Gani in news**

Rafiqul Gani: Ingen procesdesign-udfordringer er for store - KemiFOKUS www.kemifokus.dk/rafiqul-gani-ingen-procesdesign-udfordringer-... Translate this page Feb 1, 2005 - I hvert fald ikke for professor Rafiqul Gani. Han kommer fra Bangladesh, har studeret i England, arbeidet i Argentina og har de sidste 15-20 år ...

Professor Rafiqul Gani modtager EFCE pris - DTU Danmarks Tekniske ... www.mynewsdesk.com/.../professor-rafiqul-gani-modtager-efce-pr... ▼ Translate this page Jun 24, 2010 - Rafiqul Gani, professor ved DTU Kemiteknik og leder af forskningcentret CAPEC, har modtaget prisen 'CAPE award for a recent innovative ...

### Professor Rafiqul Gani of the Technical University of Denmark delivers ...

www.zawya.com/.../Professor\_**Rafiqul\_Gani**\_of\_the\_Technical\_University\_of\_Denm... 

Dec 11, 2013 - Professor **Rafiqul Gani**, of the Chemical & Biochemical Engineering Department at the Technical University of Denmark and a world-leading ...

#### 31/10/2014 - The Ceremony for Granting the Title of Doctor Honoris ... www.chimie.upb.ro/en/evenimente/eveniment-2014-10-31 Translate this page

Oct 31, 2014 - The Ceremony for Granting the Title of Doctor Honoris Causa of the University POLITEHNICA of Bucharest to Mr. Rafigul GANI. Friday, 31st ...

### "Los ingenieros químicos somos solucionadores de problemas ...

www.quimicaysociedad.org/.../los-ingenieros-quimicos-somos-solu... 

Translate this page
Oct 23, 2014 - ENTREVISTA a Rafigul Gani, presidente de la Federación Europea de Ingeniería
Química (EFCE). Eugenia Angulo / DIVULGA.

<sup>[PDF]</sup> Gani named as next EFCE president - The Chemical Engineer https://www.tcetoday.com/~/media/Documents/TCE/Articles/2013/870/870/eople.pdf

ICHEME Fellow RafiquI Gani is to be the next president of the European. Federation of Chemical Engineering. (EFCE). At the same time, Mike. Considine, also a ...

#### Rafiqul Gani, Doctor Honoris Causa al UBB - Ziua de Cluj

ziuadecj.realitatea.net/.../**rafiqul-gani**-doctor-honoris-causa-al-ubb--... Translate this page Nov 5, 2015 - **Rafiqul Gani**, directorul și co-fondatorul Centrului de Inginerie a Proceselor Asistate de Calculator, primeste, vineri titlul, de DHC din partea ...

### 公司邀请丹麦技术大学教授作专题讲座 | 工程建设公司

sei.sinopec.com/sei/news/.../news\_20150407\_588348956071.shtml ▼ Translate this page Apr 7, 2015 - 4月1日,丹麦技术大学化学与生物化学系教授Rafiqul Gani应邀来到公司,作了题 为"Tailor-made more sustainable process design"的专题讲座。

### Gani offers new solutions for sustainable products at J.D.Lindsay ...

engineering.tamu.edu/.../gani-offers-new-solutions-for-sustainable-products-at-jdlinds... 
Mar 8, 2016 - Dr. Rafiqul Gani, acclaimed for his extensive research in computer-aided methods and tools for sustainable products and processes in ...

### The top 20 ways to capture and make use of carbon : Biofuels Digest

www.biofuelsdigest.com/bdigest/.../the-top-ways-to-capture-and-make-use-of-carbon/ ▼ Jun 27, 2016 - ... in I&EC Research last year written by Zhihong Yuan and Mario R. Eden\*at Auburn and Rafigul Gani at the Technical University of Denmark.



Models of complex systems Chemistry World - 25 Jul 2012 This book takes the reader on an exciting journey of practical case studies. It provides an exemplary illustration of the crucial role of systematic



### Scientist calls for integrated approach in research works

Gulf Times - 27 Nov 2013 Qatar needs to integrate the research activities in energy, water and CO2 emission so that the desired results can be achieved, says Prof Rafiqul Gani, ...



Diplomaátadó ünnepség a Pannon Egyetemen Napló Online - 31 Jan 2015

Díszdoktori címet kapott Rafiqul Gani professzor, a Dán Tudományos Akadémia Tagja, tudományos és iskolateremtő munkásságának



Kann die Chemie den Klimawandel stoppen"

Process - 10 Mar 2015 Dr. Rafiqul Gani, TU Lyngby, Dänemark. Er stellte einen systematischen Ansatz vor, wie man durch Modellierung neue prozessintensivierte ...

#### Rafigul GANI - The response speech - YouTube



https://www.youtube.com/watch?v=vJmZFrQJfRg -Dec 5, 2014 - Uploaded by Facultatea de Chimie Aplicata si Stiinta Materialelor Mr. Rafiqul GANI presenting the response speech at the ceremony for granting the title of Doctor Honoris ...

#### Rafiqul GANI - Achieving More Sustainable Solutions Through ...



https://www.youtube.com/watch?v=ty30DQZJu60 -Dec 5, 2014 - Uploaded by Facultatea de Chimie Aplicata si Stiinta Materialelor Mr. Rafigul GANI, presenting the paper "Achieving More Sustainable Solutions Through Process .

#### CAPEForum2016 - Rafigul Gani - YouTube



https://www.youtube.com/watch?v=vg7dmS1F4x8 Apr 14, 2016 - Uploaded by EPFL IPESE

CAPEForum2016 - Rafiqul Gani ... Rafiqul GANI - Achieving More Sustainable Solutions Through



Chemical Engineering Education, R&D in Europe - HKUST Video ... video.ust.hk/Watch.aspx?Video=764AF3E5315DD0AF Rafiqul Gani Technical University of Denmark President-Elect, European

### Inaugural Conference of TU Delft Process Technology Institute



collegerama.tudelft.nl/.../7791a75a48ad4aada03eb7a7f3c5e3631d Invited speakers include Prof. Gregory Stephanopoulos (MIT), Prof. Rafiqul Gani (DTU), Prof. James Clark

#### Systems Conversations, October 26, 2018: Rafiqul Gani ...

https://www.youtube.com > watch



Jun 10, 2019 - Uploaded by Cornell Systems Engineering Dr. Rafiqul Gani's presentation, "Time for a new class of methods and computer aided tools to address the ...

#### Time for a new of methods and computer aided tools to ... https://www.youtube.com > watch



Jan 24, 2019 - Uploaded by UAM Cuajimalpa Oficial Dr. Rafiqul Gani. ... been rented. This feature is not available right now. Please try again later. Streamed live on ...

Seminar by Dr. Rafiqul Gani on "challenges and opportunities in different scales" (November 2019) at BUET, Dhaka, Bangladesh https://www.youtube.com/watch?v=SwHoggwXViQ

### https://www.youtube.com/watch?v=453jcT13nU8

Invited plenary lecture by Prof Rafiqul Gani at ChemPlus 2021 (IIT Madras) on Next Generation of PSE and Sustainable Chemical Engineering

https://www.thechemicalengineer.com/news/new-view-of-chemical-engineering-to-help-serve-society/

The Chemical Engineer

New view of chemical engineering to help serve society

This story was updated on 17 March to add commentary made by Rafiqul Gani FIChemE. Article by Amanda Jasi. Staff Reporter, The Chemical Engineer.



