About the Contributors

**Katia Tannous** is graduated in Chemical Engineering at the University of Caxias do Sul (1985), Master in Chemical Engineering at the University of Campinas (1989) and PhD in Chemical Engineering at the Institut National Polytechnique de Toulouse (1993). She conducted post-doctorate at the University of Waterloo in 2000, on polymerization of polyethylene using metallocene catalyst. In 2004, she became an expert in distance education and training of human resources at the Pontifical Catholic University of Campinas. In 2010 and 2012, she made postdoctoral internships at the University of British Columbia working with flow ability, storage, and fluid dynamics in fluidized beds using different kinds of biomass. She is currently associate professor in the School of Chemical Engineering at the University of Campinas. She has 25 years’ experiences in the fluidization technology focusing on industrial applications related on food, pharmaceutical products, and biomass, and also bioenergy. Extending her technical work, she has developed researches in distance education correlating software and web environment, as well as applying new methodologies and techniques in education of chemical engineers.

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**Renata Andrade Figueiredo** is graduated in Industrial Chemistry in 1999 at University Vale do Rio Doce, received his Master of Science (2002) and Ph.D. (2011) in Thermal and Fluids Engineering in Mechanical Engineering from the University of Campinas. Researcher (DCR / FACEPE / CNPq) of the Department of Mechanical Engineering in the energy area from Federal University of Pernambuco (2012 à 2015). She has 14 years of experience in research on processes with biomass thermochemical (combustion, gasification and pyrolysis) and characterization of alternative fuels.

**Jesús Arauzo** is professor at the University of Zaragoza (Polytechnic Centre), and currently he is director of chemical process area at ABENGOA Research, SA. His research focuses on the field of thermochemical processing of various types of
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waste (agricultural and forest, black liquor, sewage sludge, meat and bone meal). In
this field, he is co-author of international articles (approx. 70), book chapters and
communications of international conferences (approx. 150). Also, he is co-supervisor
of several thesis. He is the scientific director of R & D in international, national
and regional level projects and contracts. In the field of private enterprise, he has
been responsible for several projects with companies as CADAGUA, ABENGOA,
Taim-TFG, SIRASA, URBASER, to develop gasification pilot plants. He developed
investigations between 1991-1992 at the University of Waterloo (Canada).

Xiaotao T. Bi is a professor in the UBC Department of Chemical & Biological
Engineering. He is also an associate director of UBC clean energy research centre.
Dr. Bi’s research interests include fuel cell water management, fluidization, particle
technology, biomass drying, combustion, gasification, pyrolysis and emissions
control, and life cycle analysis.

Joana Bratz Lourenço is graduated in Chemical Engineering from Federal
University of Santa Maria and Master of Science in Chemical Engineering from
University of Campinas. She works on researches focused on energy, as fuel cells
and thermal conversion processes involving biomasses. Currently, she teaches at
Passo Fundo University and she is also a PhD student at the Federal University of
Rio Grande do Sul.

Flávio Augusto Bueno Figueiredo is graduated in Mechanical Engineering in
1996 at UNESP, where he specialized in Refrigeration and Air Conditioning, and
received his Master of Science in Industrial Engineering in 2002. He obtained his
PhD in Mechanical Engineering in 2009 at UNICAMP. He is currently Associate
Professor at the Department of Mechanical Engineering, Energy Area at Federal
University of Pernambuco. With 14 years of experience in research processes with
biomass thermochemical (combustion, gasification and pyrolysis) and characteriza-
tion of alternative fuels.

Yurany Camacho Ardila, PhD candidate. She is Bachelor in chemical engineer-
ing (Industrial University of Santander-Colombia). Master in Chemical Engineering
in the area of chemical process development in the School of Chemical Engineering,
University of Campinas (Brazil). She has experience in: separation process (phase
equilibrium and experimental determination of liquid-liquid equilibria), molecular
distillation and thermochemical process.
Jamal Chaouki has been a full professor since 1995 at École Polytechnique in Montréal, where he has supervised more than 70 Ph.D. and Master Students and more than 40 post-doctoral fellows. He has published well over 350 reviewed articles in refereed journals and various reviewed proceedings and over 400 other scientific articles. He has edited 6 books and has more than 15 patents on different processes. Prof. Chaouki is presently editor of the «Chemical Product and Process Modeling» as well as director of the Biorefinery Center and a member of the Canadian Academy of Engineering. He is the Principal Chair Holder of the NSREC-Total Group on the hydrodynamic modeling of multiphase processes under extreme conditions. His work is mainly dedicated to developing processes from waste and biomass to produce heat & power, fuels and chemicals.

Renato Cruz Neves received his Bachelor Science in Physics (2009) and Mathematics (2012). Master’s in Mechanical Engineering (2013) entitled as “Reformation of gasification gas by plasma torch: preliminary results.” PhD candidate at Integrated Graduate Program in Bioenergy (IGPB - USP, UNICAMP and UNESP). His current research involves renewable energy and thermal processes to obtain biofuels in a biorefinery concept at Brazilian Bioethanol Science and Technology Laboratory (CTBE) of Brazilian Center for Research in Energy and Materials (CNPEM).

Érico de Godois Baroni is currently a graduate student (master) in the Department of Chemical Engineering, University of Campinas (UNICAMP) in the area of Processes and Products Development. Bachelor in Chemical Engineering by the University of Caxias do Sul (UCS). In his dissertation he develops studies on the kinetic modeling of pyrolysis of Amazonian biomass for production of biofuels. He served as a fellow undergraduate at the Laboratory of Biotechnology of Natural and Synthetic Products (UCS), evaluating and optimizing extraction methods for essential oils and natural extracts. Érico also staged at the Laboratory of Corrosion and Surface Protection (UCS), conducting accelerated corrosion tests, and gravimetric and mechanical assessments of coatings. He has experience in Chemical Engineering, with emphasis on Pyrolysis Kinetics, Biotechnology Processes, Natural Products and Corrosive Processes.

Mohammad Emami served as research assistant in the UBC Department of Chemical & Biological Engineering for more than six years. He worked on biomass size reduction and pelletization. Mohammad has a master’s degree in Food Science and Technology from UBC. He currently holds a position as Quality Assurance Coordinator at the Oppenheimer Group, a major produce distributing and packing company, headquartered in Vancouver, Canada.
About the Contributors

Sherif Farag is a researcher at the Department of Chemical Engineering, École Polytechnique de Montréal, Canada. Farag has more than 10 years of multidisciplinary research and development experience in the fields of renewable energy, biomass processing, waste management, and the design and development of multiphase processes. His professional career has focused on developing technologies for producing novel chemicals and materials based on biomass and waste to replace fossil-fuel based chemicals and products, using both microwave and conventional heating. Farag’s expertise further extends into hydrodynamic modeling of multiphase processes under extreme conditions.

Jaiver Efrén Jaimes Figueroa, PhD candidate. He is a Chemical Engineer (Industrial University of Santander - Colombia), Master in Chemical Engineering (University of Campinas - Brazil). He has experience in areas of simulation, optimization, development of chemical processes and thermochemical and fermentative route of biomass conversion.

Gloria Flora is the founder and Director of both the U.S Biochar Initiative and Sustainable Obtainable Solutions. She served 23 years in the U.S. Forest Service including as Forest Supervisor on two national forests. She specializes in sustaining healthy public lands, climate change and large landscape conservation.

Felix Fonseca Felfli graduated in Mechanical Engineering - Universidad del Oriente Cuba (1995), PhD in Energy Systems Planning in the School of Mechanical Engineering, University of Campinas (2003). Works in the development and improvement of briquetting, torrefaction and pyrolysis technologies. Also works in the areas of energy planning studies and techno-economic viability and has experience teaching in higher education disciplines of machine design.

Mylene Cristina Alves Ferreira Rezende received B.Sc degree in Chemical Engineering from University of Uberlândia, M.Sc and D.Sc. degree in Chemical Engineering from University of Campinas and a Post-Doctorate in the same field from University of Campinas (2011). She is currently Researcher of Brazilian Bioethanol Science and Technology Laboratory (CTBE) of the Brazilian Center for Research in Energy and Materials (CNPEM), where her research interests focus on renewable energy sources, thermochemical conversion to syngas and catalytic conversion of syngas to energy, biofuels and higher value chemicals.

Mark R. Fuchs is a Hydrogeologist in the Washington Department of Ecology’s Waste 2 Resources Program. His focus is developing waste organic materials processes that protect ground and surface water from contamination. He oversees
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Waste to Fuels Technology research, development and outreach programs that investigate processes such as anaerobic digestion, composting and fertilizer production, and thermochemical processes such as gasification, combustion and pyrolysis for heat and fuels recovery that also produce compost and biochar for agricultural and environmental applications. A biorefinery model developed by Washington State University under Mr. Fuchs direction may apply a combination of these unit processes. Mr. Fuchs has over thirty years experience in environmental work. He holds Bachelor of Science degrees in Soil Science and Agricultural Economics, and is a licensed Hydrogeologist.

**Jesus Alberto Garcia-Nunez** has been working for 20 years as a researcher at the Colombian Oil Palm Research Centre (Cenipalma), where he is currently the Coordinator of the Processes and Uses Program. His research has positively impacted the Colombian oil palm sector, especially on palm oil mill effluents anaerobic treatment and improvement of palm oil mills efficiency. His experience includes long road tests to determine the conditions and feasibility of using palm oil-derived biodiesel for transportation in Colombia. He is leading a project to optimize the biomass uses in the palm oil mills by adopting biorefinery concepts. Mr. Garcia-Nunez holds a BS in Sanitary Engineering from the Universidad del Valle (Cali, Colombia), an MSc on Agricultural Engineering from the University of Georgia, Athens (USA), and he is a Ph.D. Candidate at Washington State University, (Pullman, WA, USA). Mr. Garcia-Nunez has been a scholar from Fulbright and the IICA.

**Manuel Garcia-Pérez** is an associate professor for the Biological Systems Engineering department at Washington State University. He has been working for the last 15 years on projects related with the thermochemical conversion of lignocellulosic materials for the production of bio-fuels and chemicals and has published more than 70 peer reviewed papers. Dr. Garcia-Pérez has made contributions to the understanding of thermochemical reactions of cellulose and lignin as well as the characterization and uses of crude bio-oils. He is currently working on the development of more selective pyrolysis reactors, on the development of engineered bio-chars for environmental applications and on new concepts to refine pyrolysis oils. Dr. Garcia-Pérez is currently associate editor of Biomass and Bioenergy.

**Alberto Gonzalo Callejo** is graduated in chemistry at the University of Zaragoza (Spain) in 1992, received his PhD in chemical engineering from the same University in 2005. He has been working for 9 years in the pulp and paper industry, and currently, he is associate professor at the University of Zaragoza, and belongs to the
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Aragon Institute of Engineering Research. His main researches are pyrolysis and gasification of residues, pulp and paper production from non-wood materials, and biodiesel production, publishing regularly in scientific journals, as Biotechnology Resources or Energy & Fuels. In 2001, he won the 3M-Foundation prize in the area of Industrial Innovation.

Chad Kruger is the Director of the Washington State University Center for Sustaining Agriculture & Natural Resources (CSANR). He oversees CSANR efforts ranging from organic farming to climate change to small farms. Since 2004 he has led CSANR’s award winning Climate Friendly Farming Project which focuses on evaluating the carbon footprint of agriculture, developing greenhouse gas mitigation technology, climate change impact assessment, and developing renewable fuels and products from biomass. He received a B.A. in Philosophy and History (1997) and an Academic Certificate in Ecointensive Agriculture Technologies (1998) from Northwest College in Kirkland, Washington, and he completed an M.S. (2003) in Land Resources from the University of Wisconsin - Madison. He was a WSU Earth, Ecosystem and Society Fellow (2012-13), and has been honored with the WSU CAHNRS Interdisciplinary Team Award (2011), USDA NIFA Partnership Award for Innovative Program Models (2009), and the WSU Extension Big Cat Award (2007).

Pak Sui Lam (Wilson) is an adjunct professor of the UBC chemical and biological engineering department. His current research focuses on the production of bio-jet fuel from woody biomass via thermochemical conversion. He completed his PhD at the same department in 2011. His PhD research was focused on steam explosion of biomass to produce durable and hydrophobic pellets as feedstock for biorefinery.

Pak Yiu Lam (Isaac) completed his M.A.Sc. degree in UBC Chemical and Biological Engineering in 2013. His master research investigated the effects of water leaching and steam explosion on oil palm residues to produce durable and hydrophobic pellets for thermochemical conversion and bio-conversion.

Anthony Ka-pong Lau is an associate professor in the UBC Department of Chemical & Biological Engineering. Dr. Lau’s research interests include organic waste-to-resource recycling, biomass feedstock engineering, bioenvironmental processes and systems, composting, anaerobic digestion, and odor control.

C. Jim Lim is a professor in the UBC Department of Chemical & Biological Engineering. Dr. Lim’s research interests include fluidization, biomass processing, particle hydrodynamics, biomass chemical looping combustion for CO₂ separation, gasification and hydrogen production.
Rubens Maciel Filho is a Chemical Engineer with a degree in Chemical Engineering from Federal University of São Carlos in 1981, Nuclear Engineering, M.Sc. Chemical Engineering, University of Campinas-1985. PhD, Chemical Engineering, University of Leeds, UK-1989. Full Professor at Chemical Engineering School, Department of Chemical Process and Coordinator of the Laboratory of Optimization, Design and Advanced Process Control (LOPCA) since 1989; and from 2010, Coordinator of the Brazilian Institute of Biofabrication (BIOFABRIS). Also he is Coordinator of the Valoration Petroleum Laboratory (VALPET), since 2010. The main research areas covers Modeling of Chemical and Biochemical Processes: Computer Aided Design, operation and control and off/on line optimization, with special focus on Green Process Development and Biorefinery. He served as Head of Chemical Process Development, Director for Under Graduate Studies, Dean of Chemical Engineering School and Pro-Rector at State University of Campinas (UNICAMP). He is a permanent member of Brazilian Chemical Engineering Association. He is coordinator of the Engineering at Bioenergy Program of FAPESP (BIOEN/FAPESP).

Elisa Magalhães de Medeiros is a Chemical Engineering undergraduate student at the University of Campinas (UNICAMP). Former intern at the Brazilian Bioethanol Science and Technology Laboratory (CTBE) of the Brazilian Center for Research in Energy and Materials (CNPEM).

Staffan Melin is a honoury research associate in the UBC Department of Chemical & Biological Engineering. He is also a research director of Wood Pellet Association of Canada. Mr. Melin’s research interests include biomass processing, biomass handling and storage, dust explosion and emissions.

Juan Miguel Mesa-Pérez graduated from the University of Oriente, Cuba, 1993. PhD in thermo-conversion of plant biomass from the School of Agricultural Engineering System - FEAGRI the State University of Campinas - UNICAMP. 2004 Postdoctoral - Faculty of Agricultural Engineering, UNICAMP, 2008-2013. Managing Partner of the company Bioware Technology.

Ladan Naimi is a research assistant in the Biomass and Bioenergy Group in the Chemical and Biological Engineering Department at the University of British Columbia. Her research is on modeling of energy consumption and size specification of size reduction of biomass. Her research also explores the compositional and mechanical characteristics of biomass that have significant effect on size reduction energy consumption. She is a PhD candidate.
Edgardo Olivares-Gómez received his Résumé University degree in Mechanical Engineering from University of Oriente in Cuba. He has Mastership and Doctorate degree in thermochemical processes in Agricultural Engineering Faculty (FEA-GRI) at University of Campinas (UNICAMP). He has already been a professor at Federal University of Itajubá (UNIFEI). Currently, he is researcher at the Brazilian Bioethanol Science and Technology National Laboratory (CTBE) of the Brazilian Center for Research in Energy and Materials (CNPEM) and has focused his studies on renewable energy sources, thermochemical conversion processes to syngas and power cycles simulation. Also, he is a post-graduation professor at Agricultural Engineering Faculty (FEAGRI – UNICAMP).

Laura Plazas Tovar, PhD, is a postdoctoral researcher in the Laboratory of Optimization, Design and Advanced Control at University of Campinas, Campinas-São Paulo, Brazil. She graduated from Industrial University of Santander with B. Chem. Eng. degree and from the University of Campinas with M.Sc. and Ph.D. degrees in chemical engineering. She has experience in process engineering: Conventional distillation and molecular or short path distillation; acting on the following research topics: Fractionation and purification of natural products, fractionation of atmospheric and vacuum residues (residues of petroleum distillation). She has experience in biofuels production: Experimental work and simulation software about second-generation ethanol process. Her research interests include chemical process design based on modeling and simulation and, evaluation of different operational scenarios for pre-treatment and hydrolysis processes in the production of second-generation ethanol.

M. R. Pelaez-Samaniego is a professor at the Faculty of Chemical Sciences, University of Cuenca, Ecuador. He has several years of experience within private industry and in consulting for state and private companies in Ecuador in topics related with energy. His research aims at using thermochemical processes for producing biofuels, bioproducts, and bioenergy from biomass and at enhancing properties of wood and wood composites via thermochemical pretreatment operations. His expertise also includes energy efficiency and planning of energy systems. He holds a BS in Mechanical Engineering (Summa Cum Laude) (University of Orient, Santiago de Cuba), an MS in Planning of Energy Systems (UNICAMP, Campinas, Brazil), and a PhD in Biological and Agricultural Engineering (Washington State University, Pullman, WA, USA). Dr. Pelaez-Samaniego has been a scholar from the IECE (Ecuador), the Global Sustainable Energy Partnership (former e8 Group), and from Fulbright (Fulbright Faculty Development Program).
Yesid Javier Rueda-Ordóñez is a Ph.D. student in Chemical Engineering at the University of Campinas, M.Sc. in Mechanical Engineering at the University of Campinas in 2012, and B.Sc. in Mechanical Engineering at the Industrial University of Santander in 2009. In 2009 received his B.Sc. for the design and construction of a dryer for biomass derived from poultry industry. He worked as a designer and constructing equipments for the ceramic industry from 2009 to 2010. In 2012 received his master degree for the research in the analysis and signal processing of dynamic pressure measurements in a fluidized bed. Currently is researching the pyrolysis kinetics of lignocellulosic biomasses, and the modelling of pyrolysis batch reactors. His research interests are in thermal conversion processes, renewable fuels and heat transfer modelling.

Caio Glauco Sánchez graduated in Mechanical Engineering in 1978, at University of Campinas, received his Ph.D. in Mechanical Engineering from the same university in 1994. In 2006 he made his Postdoctoral at Unizar, Zaragoza, Spain and is currently associate professor at Department of Energy of Mechanical Engineering of UNICAMP. He published widely on scientific journals and Magazines during his 30 years of experience and performance in research on energy systems with biomass, gasification, Pyrolysis of biomass, bio oil development, syngas development, combustion engines and characterization of fossil fuels and alternative fuels.


Shahab Sokhansanj is an adjunct professor in the UBC Department of Chemical & Biological Engineering. He is also a distinguished Research Staff at the Oak Ridge National Laboratory. Dr. Sokhansanj’s researches include feedstock engineering and logistics modeling.
About the Contributors

Lizeth Katherine Tinoco-Navarro received her Chemical Engineer Bachelor degree at the University of America in Bogota Colombia (2012) and worked at Biotechnology Institute of National University (IBUN) with production of biofuels through cellular metabolisms. Currently, Lizeth is studying a Chemical Engineering Master Degree at the University of Campinas (UNICAMP) and is researching with biomass applications in thermoconversion process analyzing its kinetic behaviour.

Maria Regina Wolf Maciel is graduated in Chemical Engineering at Federal University of São Carlos (1981), Masters in Chemical Engineering at University of Campinas (1985) and PhD in Chemical Engineering at The Leeds University (1989). She is currently a full Professor in the School of Chemical Engineering at University of Campinas. She has experience in the area of separation engineering and applied thermodynamics. She is Coordinator of the Separation Process Development Laboratory (LDPS) at UNICAMP.

Rolando Zanzi Vigouroux is currently researcher at Department of Chemical Engineering and Technology of Royal Institute of Technology in Stockholm, Sweden. He is graduated in Chemical Engineering in 1984 at Royal Institute of Technology. He received his PhD in Chemical Technology from the same university in 2001. Since 1985, he has been worked in research activities in thermochemical conversion of biomass, i.e., gasification and pyrolysis of biomass, production of activated carbon, fuel cell, production of biodiesel. He has been responsible for several projects financed by Swedish and international organization. His activities at the Royal Institute of Technology includes also teaching and guidance of Master and PhD students. He has over 20 refereed journal publications and over 30 conferences publications. He is a referee of over 15 different international journals in biomass and bioenergy.