

Preliminary Program

(May 16, 2019)

Pyroliq 2019:

Pyrolysis and Liquefaction of Biomass and Wastes

**June 16-20, 2019
Maryborough Hotel
Cork, Ireland**

Conference Co-Chairs:

Franco Berruti, ICFAR, Western University, Canada
Anthony Dufour, CNRS Nancy, France
Wolter Prins, University of Ghent, Belgium
Manuel Garcia-Pérez, Washington State University, USA



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Sunday, June 16, 2019

16:00 – 18:00	Registration (Sherrard Foyer)
17:00 – 18:00	Organizing Committee Meeting
18:00 – 19:00	Welcome Reception with live Irish music and dancers (Orangery)
19:00 – 20:30	Dinner (Bellini's Restaurant)

NOTES

- *Technical sessions will be in Sherrard Suite B. Poster sessions will be in Sherrard Suite A.*
- *Audio, still photo and video recording by any device (e.g., cameras, cell phones, laptops, PDAs, watches) are strictly prohibited during the technical sessions, unless the author and ECI have granted prior permission.*
- *Speakers – Please have your presentation loaded onto the conference computer prior to the session start (preferably the day before).*
- *Speakers – Please leave at least 3-5 minutes for questions and discussion.*
- *All breakfasts and lunches, as well as dinners on Sunday, Monday, and Tuesday, will be in Bellini's Restaurant.*
- *The conference banquet on Wednesday will be in the Orangery.*
- *Coffee breaks are held in Sherrard Suite A.*
- *The ECI Office is in the Cedar Room.*
- *Please do not smoke at any conference functions.*
- *Turn your mobile telephones to vibrate or off during technical sessions.*
- *Please write your name on your program so that it can be returned to you if lost or misplaced.*
- *After the conference, ECI will send an updated participant list to all participants. Please check your listing now and if it needs updating, you may correct it at any time by logging into your ECI account.*
- *Emergency Contact Information: Because of privacy concerns, ECI does not collect or maintain emergency contact information for conference participants. If you would like to have this information available in case of emergency, please place your emergency contact information on the reverse side of your name badge.*

Monday, June 17, 2019

- 07:00 – 08:30 Breakfast
- 08:30 – 08:45 Welcome and Conference Overview
- 08:45 – 09:20 **PLENARY 1:** PRIMA - Pyrolysis Recycle Initiatives for MAterials
Paul de Wild
ECN, TNO, The Netherlands
- SESSION 1: FUNDAMENTALS**
- 09:20 – 09:40 **PR-1:** A surrogate model construction strategy for bio-oil using ReaxFF molecular dynamics
Xiaoxia Li
University of Chinese Academy of Sciences, China
- 09:40 – 10:00 **PR-2:** Non-linear kinetic model for optimizing hydrothermal liquefaction reactor to convert biomass to biofuel
Rakesh Kumar
Reliance Industries Ltd., India
- 10:00 – 10:20 **PR-3:** Single particle model for the pyrolysis of a wheat straw pellet
Teresa Marti Rossello
University of Strathclyde, UK
- 10:20 – 10:50 Coffee Break
- 10:50 – 11:10 **PR-4:** The influence of lipids on the fate of nitrogen during hydrothermal liquefaction of protein-containing biomass
Yujie Fan
Karlsruhe Institute of Technology (KIT), Germany
- 11:10 – 11:30 **PR-5:** Production of ethyl acetate from pyrolysis of lignin model compound guaiacylglycerol- β -guaiacyl using TGA-MS
Mark J. Kelly
Trinity College Dublin, Ireland
- 11:30 – 11:50 **PR-6:** Challenges and progresses made on the microkinetic description of lignin liquefaction: Application of group contribution methods
Evan Terrell
Washington State University, USA
- 11:50 – 12:10 **PR-7:** Kinetic study of tire carbon black and biomass soot steam activation used for the removal of phenol and chlorine from drinking water
Anna Trubetskaya
National University of Ireland Galway, Ireland
- 12:10 – 12:30 **PR-8:** Heat of reaction of hydrothermal liquefaction reactions
Morgane Briand
CEA-LITEN, France
- 12:30 – 14:00 Lunch
- 14:00 – 17:00 Free time for networking/*ad hoc* sessions
- 17:00 – 17:20 Afternoon refreshments

- 17:20 – 17:40 **PR-9:** Kinetic of biobased bitumen synthesis from microalgae biomass by hydrothermal liquefaction
Antoine Rolland
GEPEA, France
- 17:40 – 18:00 **PR-10:** Manipulation of product distributions in biomass fast pyrolysis using molten polymers
Hsi-Wu Wong
University of Massachusetts Lowell, USA
- 18:00 – 18:20 **PR-11:** CO₂ participation in cross-linking reactions and char formation during bio-oil pyrolysis
Farid Chejne
Universidad Nacional de Colombia, Colombia
- 18:20 – 18:40 **PR-12:** Synergistic effects of bimetallic Mo-W carbide in hydrodeoxygenation of guaiacol
Serge Kaliaguine
Laval University, Canada
- 18:40 – 19:00 **PR-13:** Feedstock blending as a strategy for hydrothermal liquefaction: lipid-rich scum from primary sedimentation and wastewater sludge
Justin Billing
Pacific Northwest National Laboratory, USA
- 19:00 – 19:20 **PR-14:** Influence of Lewis/Brønsted acidic ionic liquid catalysts on the production of furfural from C5 carbohydrates
Yuan Zhao
Zhejiang University, China
- 19:30 – 21:00 Dinner
- 21:00 – 22:30 Poster Session with Social Hour

Tuesday, June 18, 2019

- 07:00** – 08:30 Breakfast
- 08:30 – 09:05 **PLENARY 2:** Pyrolysis of plastic waste: opportunities and challenges
Anja Oasmaa
VVT, Finland
- SESSION 2: PYROLYSIS OF PLASTICS AND FOSSIL FUELS**
- 09:05 – 09:25 **PR-15:** Production of olefins and monoaromatics through catalytic fast pyrolysis of plastics in a tandem microreactor GC/MS
Javier Celaya Romeo
RISE PFI AS, Norway
- 09:25 – 09:45 **PR-16:** Pyrolysis of waste agricultural plastics into higher value products
Ondrej Masek
University of Edinburgh, UK

09:45 – 10:05 **PR-17:** Study of the process of thermos-catalytic treatment of oil residues
Kirill V. Chalov
Tver State Technical University, Russia

10:05 – 10:25 **PR-18:** Thermolysis of plastic waste: Reactor comparison
Muhammad Saad Qureshi
VTT, Finland

10:25 – 10:55 Coffee Break

SESSION 3: PROCESS DEVELOPMENT AND INTEGRATION

10:55 – 11:15 **PR-19:** Comparison among technical and milled wood lignins through principal component analysis of FTIR spectra
Evan Terrell
Washington State University, USA

11:15 – 11:35 **PR-20:** Hydrothermal liquefaction of organic waste streams on a continuous pilot scale reactor
Patrick Biller
Aarhus University, Denmark

11:35 – 11:55 **PR-21:** EN-fuels from solid waste biomass by thermo-catalytic reforming
Andreas Hornung
Fraunhofer Institute for Environmental, Safety, and Energy Technology
UMSICHT, Germany

11:55 – 12:15 **PR-22:** Cellulose valorization in biorefinery: integration of fast pyrolysis and fermentation for building blocks production
Felipe Buendia-Kandia
CNRS, University of Lorraine, France

12:15 – 12:35 **PR-23:** Process analysis of multistage heat recovery and integration in pyrolysis systems
Murlidhar Gupta
CanmetENERGY, Natural Resources Canada, Canada

12:35 – 14:00 Lunch

14:00 – 16:00 Free time for networking /*ad hoc* sessions

16:00 – 16:20 Afternoon refreshments

SESSION 4: SCALE UP: PILOTS, DEMOS AND COMMERCIAL

16:20 – 16:40 **PR-24:** Pyrolysis of sewage sludge at pilot scale
Marzena Kwapinska
University of Limerick, Ireland

16:40 – 17:00 **PR-25:** Ablative fast pyrolysis of biomass: A new demonstration project in California, USA
Dietrich Meier
Thermophil international, Germany

17:00 – 17:20 **PR-26:** Fast pyrolysis bio-oil production in a entrained flow reactor pilot
Marine Peyrot
CEA LITEN, France

- 17:20 – 17:40 **PR-27:** Lambiotte, Premery, France: An industrial pyrolysis biorefinery operated during 120 years
Anthony Dufour
CNRS, University of Lorraine, France
- 17:40 – 18:00 **PR-28:** Parametric study of lab-scale and pilot-scale biomass torrefaction for the production of woodstove briquettes
Anna Trubetskaya
National University of Ireland Galway, Ireland
- 18:00 – 19:30 Poster Session with Aperitif
- 19:30 Dinner in Cork “on your own” and free evening

Wednesday, June 19, 2019

- 07:00** – 08:30 Breakfast
- 08:30 – 09:05 **PLENARY 3: Catalytic Pyrolysis**
Sasha R.A. Kersten
University of Twente, The Netherlands
- SESSION 5: PRODUCTS CHARACTERIZATION, SEPARATION AND UPGRADING**
- 09:05 – 09:25 **PR-29: Ternary system of pyrolytic lignin, mixed solvent, and water: phase diagram and implications**
Mingyang Li
Curtin Univeristy, Australia
- 09:25 – 09:45 **PR-30: Pyrolysis of polyethylene-lined waste paper cups**
Fabricio Guayaquil-Sosa
ICFAR, Western University, Canada
- 09:45 – 10:05 **PR-31: Proposal of a representative chemical composition for fast pyrolysis lignocellulosic bio-oil and estimation of the thermodynamic properties of the bio-oil compounds**
Isabel Fonts
Thermochemical Processes Group - Universidad Zaragoza, Spain
- 10:05 – 10:25 **PR-32: The study of biochar properties obtained from a poultry litter treatment by a fast dry and wet torrefaction in a fluidized bed**
Rafail Isemin
Tambov State Technical University, Russia
- 10:25 – 10:55 Coffee Break
- 10:55 – 11:15 **PR-33: Upgrading of wheat/barley and miscanthus bio-oil over a sulphided catalyst**
Bogdan Shumeiko
University of Chemistry and Technology, Czech Republic
- 11:15 – 11:35 **PR-34: Depolymerization of fractionated wood by hydrothermal liquefaction**
Felipe Buendia-Kandia
CNRS, University of Lorraine, France
- 11:35 – 11:55 **PR-35: Characterization of hydroprocessed fast pyrolysis oil fractions**
Mariefel V. Olarte
Pacific Northwest National Laboratory, USA
- 11:55 – 12:15 **PR-36: Electrochemical upgrading of bio-oil: A proof-of-principle investigation**
Mehmet Pala
Ghent University, Belgium
- 12:15 – 12:35 **PR-37: Novel non-conventional air separation unit coupled hybrid pyrolysis and gasification concept to produce clean biofuel precursors**
Murlidhar Gupta
CanmetENERGY, Natural Resources Canada, Canada
- 12:35 – 14:00 Lunch

- 14:00 – 16:00 Free time for networking/ad hoc sessions
- 16:00 – 17:20 **WORKSHOP: BIOMASS LIQUEFACTION: CHALLENGES AND PERSPECTIVES**
(Refreshments available from 17:00)
- SESSION VI: TECHNO-ECONOMICS AND ENVIRONMENTAL**
- 17:20 – 17:40 **PR-38:** Challenges and opportunities for the synthesis of novel pyrolysis oil refineries
Anamaria Pires
Washington State University, USA
- 17:40 – 18:00 **PR-39:** Cost estimation of a biorefining network for forest residues in Ireland
Ashutosh Rai
National University of Ireland Galway, Ireland
- 18:00 – 18:20 **PR-40:** Environmental assessment of pyrolysis in biorefineries based on palm oil wastes
York Castillo Santiago
Federal University of Itajubá, Brazil
- 18:20 – 18:40 **PR-41:** Influence of reactor type on production cost of fast pyrolysis bio-oil
Nicolaus Dahmen
Karlsruhe Institute of Technology, Germany
- 18:40 – 19:00 **PR-42:** Building sustainable lignocellulosic value chains for advanced biofuels production: energy assessment and logistics optimization
David Chiamonti
RE-CORD, University of Firenze, Italy
- 19:00 – 19:20 **PR-43:** Pyrolysis of aerobic sewage sludge, green wastes and refuse derived fuels at high temperatures in bubbling fluidized bed reactor
Sid Ahmed Kessas
INP-LGC, France
- 19:20 – 19:40 **PR-44:** Scalable processing concepts for microwave pyrolysis
John Robinson
University of Nottingham, UK
- 20:00 – 22:30 Conference Banquet

Thursday, June 20, 2019

- 07:00 – 08:30 Breakfast
- SESSION VII: VALUE-ADDED PRODUCTS**
- 08:30 – 08:50 **PR-52:** Slow pyrolysis of lignin rich residue from lignocellulosic biorefining operations
Paola Giudicianni,
Research Institute on Combustion, CNR, Naples, Italy
- 08:50 – 09:10 **PR-45:** The application of pyrolysis biochar for wastewater treatment
Serge Kaliaguine
Laval University, Canada

- 09:10 – 09:30 **PR-46:** Hydrothermal conversion of micro-algae as new biomaterials for pavement
Clemence Queffelec
Ceisam laboratory, University of Nantes, France
- 09:30 – 09:50 **PR-47:** Polymer from pyrolysis products
John Ryan
University of Nottingham, UK
- 09:50 – 10:10 **PR-48:** Evaluation of the antifungal activity of cattle manure bio-oil
Matheus Pinheiro Carvalho
Federal University of Sergipe, Brazil
- 10:10 – 10:30 **PR-49:** Hydrothermal recycling of activated biochar
Christian Wurzer
University of Edinburgh, UK
- 10:30 – 10:50 **PR-50:** Anaerobic digestion of the aqueous pyrolysis condensate
Connie Wen
ICFAR, Western University, Canada
- 10:50 – 11:10 **PR-51:** Production of acetic acid-rich bio-oils from slow pyrolysis of Jerusalem Artichoke tubers
Dongbing Li
Northwest A&F University, China
- 11:10 – 13:00 Coffee Break and Poster Session for Wednesday and Thursday
- 13:00 Lunch and Departures