



CPAC Virtual Rome Workshop 2021

March 22-24, 2021

Utilization of New Concepts in Supporting the Demand for Sustainable Materials by Developing Next Generation Materials, as well as Exploring New Reaction Routes that Benefit from the Growing Use of Continuous Flow and Monitoring Technology

Rome Workshop Organizers: Ray Chrisman and Mel Koch, Center for Process Analysis and Control (CPAC)/Applied Physics Laboratory (APL), University of Washington and MK Optimization and Control LLC

Rome Workshop Advisory Steering Committee: Giancarlo Cravotto, U Turin; Claude De Bellefon, U Lyon; Ludo Diels, VITO; Frank Gupton, Virginia Commonwealth University, Volker Hessel, Adelaide U; Simone Maccagnan, Gimac Microextruders; Brian Marquardt, CPAC/U Washington and MarqMetrix, Peter Poechlauer, Thermo Fisher Scientific; Kurt VandenBussche, Honeywell UOP; Paul Watts, Nelson Mandela U

Note: All times are based on Coordinated Universal Time (UTC +1) – the time in Rome, Italy.

Monday, March 22, 2021

13:45 UTC+1	Introduction Mel Koch, CPAC/APL, University of Washington, and MK Optimization and Control LLC, USA
14:00 UTC+1	Review of the Summary and Charts from Previous Rome Workshops and the Plan for this Year's Event Ray Chrisman, MK Optimization and Control LLC, USA
Concept One	New Global Concepts that will Require Next Generation Processes and the Approaches that will Facilitate Them
14: 15 UTC+1	The Challenge of the Circular Economy, New Thinking in Product Purpose, Their Development and New Ways of Production Harald Sverdrup, Norsmetal, Norway
14:35 UTC+1	The Importance of Multiple Sensors in Evaluating Personalized Medicine Babatunde A. Ogunnaike, University of Delaware, USA

14:55 UTC+1	Advances in Recycling Plastics Kurt VandenBussche, Honeywell UOP, USA
15:15 UTC+1	Machine-Assisted Design of a Metallocene Catalyzed Olefin Polymerization Ryan Hartman, New York University, USA
Futuristic Keynote Address on ‘Out of This World’ Optimization Activity	
15:35 UTC+1	Process intensification for Space Resources and Manufacturing Volker Hessel, University of Adelaide, Australia
15:55 UTC+1	Discussion
Concept Two	Bio-based Projects as part of the path to a Circular Economy
16:15 UTC+1	Challenges for the Chemical Industry in Europe in Agreement with the Green Deal Ludo Diels, VITO, Belgium
16:35 UTC+1	Cyclodextrin-based heterogeneous catalysts in batch and continuous flow synthetic processes Giancarlo Cravotto, DSTF Director (Drug Science and Technology), U Turin and ESS President (European Society of Sonochemistry), Italy
16:55 UTC+1	Bio-sourced Janus Molecule for the Universal Functionalization of sp^2 Carbon Allotropes and Inorganic Oxhydroxide Maurizio Galimberti, Vincenzina Barbera, Daniele Locatelli, Fatima Margani, Lucia Rubino, Department of Chemistry, Materials and Chemical Engineering, Politecnico di Milano, Italy
17:15 UTC+1	Biorefinery of Industrial Food Waste: From Food and Agriculture Waste to Incremental Revenue Bahar Aliakbarian, Michigan State University, USA
17:35 UTC+1	The Case for Achieving Circular BioEconomy; What Technology is Needed for the Valorization of Lignin – to Introduce the Discussion session Ray Chrisman, MK Optimization and Control LLC, USA
17:55 UTC+1	Discussion on today’s topics

Tuesday, March 23, 2021

Concept Three	Developing Process Understanding to Enable the Integration of Multiple Unit Operations for Continuous Processing
14:00 UTC+1	Introduction Mel Koch, CPAC, University of Washington, USA

14:10 UTC+1	The Medicines for All Institute – Program Overview Frank Gupton, Virginia Commonwealth University, USA
14:30 UTC+1	Integrated Continuous Flow Processing of Fine Chemical and Pharmaceutical Products Paul Watts, Nelson Mandela University, South Africa
14:50 UTC+1	Innovation in Synthetic Methodology Through Use of Flow Tim Noël, University of Amsterdam (HIMS), The Netherlands
15:10 UTC+1	Organometallic Chemistry in Flow Towards the Synthesis of Remdesivir C. Oliver Kappe, University of Graz and Research Center for Pharmaceutical Engineering GmbH (RCPE), Austria
15:30 UTC+1	Could We Do More With Segmented Flow? Régis Philippe, Claude de Bellefon, University of Lyon, France
15:50 UTC+1	Towards Digital Twins of Intensified Processes Using Circular Process Streams Peter Poechlauer, Thermo Fisher Scientific, Austria
16:10 UTC+1	Advances in MicroReactors Vincenzo Fuzillo, Hel Group, Germany
16:30 UTC+1	Small, Modular Flow Plants – an Opportunity for Supply Chain Security Charlotte Wiles, Chemtrix BV, UK
16:50 UTC+1	Dynamic, Autonomous Process Analytics Brian Rohrback, Infometrix, USA
17:10 UTC+1	Orchestrators for Modular Plants and Manufacturing Lines, enabled by Modular Automation Marco Banti, ABB Industrial Automation Division, Control Technologies Pharmaceutical Industry, Italy
17:30 UTC+1	Wrap up Discussion

Wednesday, March 24

Concept Four	Solution Providers - Advances in Analytical Technologies and in Process Control
14:00 UTC+1	Introduction Mel Koch, CPAC, University of Washington, USA
14:10 UTC+1	Real Time PAT Based Knowledge Management and Control in Continuous Processes Martin Gadsby and Michael Sachpekidis, Optimal Industrial Technologies Ltd., UK

14:30	Fiber Solutions in Life Science & Process Control
UTC+1	Viacheslav Artyushenko, Art Photonics, Germany
14:50	Advances in Micro-Extruders
UTC+1	Simone Maccagnan, Gimac, Italy
15:10	Chemical Nanotechnologies and Biosourced Active Ingredients for Smart Plants Protection
UTC+1	Francesca Baldassarre and Giuseppe Ciccarella, Università del Salento, Italy
15:30	The Development of a Ball Lens Based Multi-Purpose Fluorometer
UTC+1	Bill Nelson, Tetracore, USA
15:50	Liquid Chromatography Advances
UTC+1	Ernie Hillier, Consultant, USA
16:10	Advances in Low-Field NMR for Process Analysis
UTC+1	Alison Nordon, CPACT, University of Strathclyde, UK
16:30	New Bio-Sensors
UTC+1	Clem Furlong, University of Washington, Genome Sciences, USA
16:50	Portable, Single-Sided NMR for Industrial Applications
UTC+1	Matt Augustine, University of California, Davis, USA
17:10	Advances in Raman Spectroscopy
UTC+1	Brian Marquardt, MarqMetrix, USA
17:30	Gas Chromatography with Chemometrics for Discovery and Process Analysis
UTC+1	Timothy Trinklein and Robert E. Synovec, University of Washington, USA
17:50	Recent Advances in Microfabricated Gas Chromatography for Process Analysis
UTC+1	Joshua Whiting, Sandia National Laboratory, USA
18:10	Discussion
UTC+1	
18:40	Meeting Concludes
UTC+1	
