



CPAC Rome Workshop 2019

March 25-27, 2019, University of Washington Rome
Center Piazza del Biscione 95, Rome, Italy 00186

Utilization of New Concepts in Developing Next Generation Materials, as well as Exploring New Reaction Routes that Benefit from the Growing Use of Continuous Flow 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, VCU, Volker Hessel, Adelaide U; Simone Maccagnan, Gimac Microextruders; Brian Marquardt, CPAC/U Washington and MarqMetrix, Peter Poechlauer, Patheon; Kurt VandenBussche, UOP; Paul Watts, Nelson Mandela U

Sponsorship: MK Optimization and Control LLC, Nano Coordinates, Optimal Industrial Automation Ltd, Virginia Commonwealth University

Monday, March 25, UWRC Conference Room, 1st Floor

12:00	Registration Opens
13:00	Introduction Mel Koch, CPAC/APL, University of Washington, and MK Optimization and Control LLC, USA
13:10	University of Washington Rome Center Welcome Amity Neumeister, Director, UWRC, Italy
	Concept One Ray Chrisman, MK Optimization and Control LLC, USA
13:40	Examples of New Concepts to Facilitate Next Generation Processes The Challenge of the Circular Economy, New Thinking in Product Purpose, Their Development and New Ways of Production Harald Sverdrup, University of Iceland and Norsemetal, Norway

14:10	Honeywell Connected Plant Applications Linda Shi Cheng, Honeywell UOP / Honeywell, USA
Concept Two	Enabling Process Understanding to Enable the Integration of Multiple Unit Operations for Continuous Processing
14:40	Optimal Partial Least Squares Models and Predictions of Properties using Monte Carlo Resampling Strategies Olav Kvalheim and Tarja Rajalahti, University of Bergen, Norway
15:10	Break
15:40	Introduction of Participants
16:10	An Integrated Product Design and Control Framework Applied to Polymer Nanocomposites Babatunde A. Ogunnaike, University of Delaware, USA
16:40	Could We Do More With Segmented Flow? Claude de Bellefon, University of Lyon, France
17:10	Discussion Ray Chrisman, MK Optimization and Control LLC, USA
17:30	Con Apertivo, UW Rome Center, Apartment 422, 4th Floor

Tuesday, March 26, UWRC Conference Room, 1st Floor

Concept Three	Continuous Production for the Efficient Production of Complex Molecules
9:00	Introduction Mel Koch, CPAC, University of Washington, USA
9:10	Integrated Continuous Flow Processing of Fine Chemical and Pharmaceutical Products Paul Watts, Nelson Mandela University, South Africa
9:40	The Medicines for All Institute – Program Overview Frank Gupton, Virginia Commonwealth University, USA
10:10	Medicines for All Institute – Selected Projects Frank Gupton, Virginia Commonwealth University, USA
10:30	Break
10:50	Continuous Biocatalytic Manufacturing Approaches for the Synthesis of Drugs and Fuels Amanda Evans, Los Alamos National Laboratory, USA
11:20	Flow Crystallization Including Integration of Online Structural Characterization and Flow Synthesis Units Karen Robertson, Nottingham University, UK
11:50	Lunch, Da Pancrazio, Palazzo Pio, Ground Floor

Concept Four	Process Automation of Coupled Multiple Unit Operations for Continuous Processing
13:30	Portable, Single-Sided NMR for Industrial Applications Matt Augustine and Michael McCarthy, University of California, Davis, USA
14:00	Flow Chemistry as a Tool for the Synthesis of Pharmaceuticals C. Oliver Kappe, University of Graz and Research Center for Pharmaceutical Engineering GmbH (RCPE), Austria
14:30	Modular Flow Platforms with Multiple Integrated PAT Tools for a Multistep Reaction Peter Sagmeister, University of Graz and Research Center for Pharmaceutical Engineering GmbH (RCPE), Austria
15:00	Break
Concept Five	Bio-based Projects to Pursue a Circular Economy
15:30	Welcome from the US Embassy in Rome Caron de Mars, Environment, Science, Technology & Health Counselor, US Embassy, Rome, Italy
15:45	Early Stage Process Design and Optimization to Boost Green Industry: The Case Study of Bio-based Adipic Acid Alessandro Rosengart, VTU Engineering Italia, Italy
16:15	Innovative Chemicals from Bio-sourced C3 and C6 Building Blocks Maurizio Galimberti, Politecnico University, Milan, Italy
16:45	The Case for Achieving Circular BioEconomy; What Technology is Needed for the Valorization of Lignin Ray Chrisman, MK Optimization and Control LLC, USA
17:15	Discussion Ray Chrisman, MK Optimization and Control LLC, USA
17:40	Reception Con Apertivo, UW Rome Center, Apartment 422

Wednesday, March 27, UWRC Conference Room, 1st Floor

Concept Six	Advances in Process Unit Operations and Solution Providers
9:00	Introduction Mel Koch, CPAC, University of Washington, USA
9:10	Secondary metabolites in Xylem Sap and Tissues as an Early Indicator of the Infection by <i>Xylella Fastidiosa</i> in Olive Trees Giuseppe Ciccarella 1, 2; V. Vergaro 1.,2; F. Baldassarre 1, 2; F. De Castro 1; C. Medana 3; F. Dal Bello 3: 1.Biological and Environmental Sciences and Technologies, University of Salento & UdR INSTM Salento, Italy

2. CNR NANOTEC-Nanotechnology Institute of the National Research Council-Lecce, Italy

3. Universita' degli Studi di Torino, Department of Molecular Biotechnology and Health Sciences, Italy

9:40	Real Time PAT Based Knowledge Management and Control in Continuous Processes Paul Gillham, Optimal Industrial Automation Ltd., UK
10:10	Microfluidics for Lab-on-Chip applications Valentina Arima, CNR Nanotec, Lecce, Italy
10:40	Break
11:00	Advances in Micro-Extruders Simone Maccagnan, Gimac, Italy
11:30	The Development of a Ball Lens Based Multi-Purpose Fluorometer Bill Nelson, Tetracore, USA
12:00	Lunch (on your own)
14:00	Data Analytics for Governing Big Data in Continuous Process Operations in a Digital Factory Marco Banti, ABB Industrial Automation Division, Control Technologies, Pharmaceutical Industry, Italy
14:30	Recent Advances in Valve-Based Two-Dimensional Gas Chromatography and Gas Chromatographic Sensing Derrick Gough and Robert E. Synovec, University of Washington, USA
15:00	Automated Reactors for Rapid Understanding of Reaction Kinetics and Mass Transfer Ilias Stamatiou, University of Leeds, UK
15:30	Summary and Final Discussion leading to 2018 Chart Preparation and Action Plans Ray Chrisman, MK Optimization and Control LLC, USA
16:00	Conclusion of Rome Workshop
