REPORT

12th CFRT for Industrial Applications Symposium – VIRTUAL EXPERIENCE

On September 15-16 the CFRT community finally met during the 12th CFRT for Industrial Applications Symposium - Virtual experience.

The event kicked off with the welcome of the chairman **Oliver Kappe**, Professor of Chemistry at the University of Graz (Austria) and Scientific Director of the Center for Continuous Flow Synthesis and Processing (CC FLOW) at the Research Center Pharmaceutical Engineering GmbH (RCPE) who moderated the two busy days.

First speaker of the event **Samantha Atkinson**, Interim Chief Quality & Access Officer at Medicines and Healthcare products Regulatory Agency, started the Regulatory session by focusing her presentation on the many initiatives the MHRA are embedding into future regulation. **Martin Johnson**, chemical engineer at Eli Lilly and Company, entered into details of the Regulatory aspects of a cGMP continuous drug substance process, and contrasts with continuous drug product. **Andrew Rutter**, consultant for Rutterdesign, matched the potential of Process Intensification technologies like continuous manufacturing/flow chemistry with the emerging Societal and Business Challenges in Medicines Manufacture and Supply.

Of great interest were a few speeches dealing with regional initiatives for pharmaceutical synthesis.

Frank Gupton, professor at Virginia Commonwealth University, discussed efforts to apply Process intensification principles to develop new and more cost-effective methods for the preparation of essential medicines associated with the onshoring of pharmaceutical manufacturing back in the United States. **Paul Watts**, Research Chair in Microfluidic Bio/Chemical Processing Nelson Mandela University, and **Colin Richmond**, Founder and CEO of Regareden, presented a selection of case studies using continuous flow to reduce the cost of APIs in Low-Middle Income countries (LMICs).
Rodrigo Souza, Associate Professor at Federal University of Rio de Janeiro, underlined how flow chemistry represents today, not only a bright future for chemical synthesis, but also represents an opportunity for underdeveloped countries to build their industrial bases and become self-sufficient regarding their needs for specialty chemicals, from basic pesticides for agriculture to complex molecules to support their basic health system, such as active pharmaceutical Ingredients (APIs).



We then heard from experts the features that make Process intensification so useful for APIs synthesis.
Peter Poechlauer, Innovation Manager, Patheon, in particular, gave examples on the generation, extraction and usage of large data volumes to build up process models to improve process understanding and control of process throughput and product properties.
Kerry Gilmore, Assistant Professor at the University of Connecticut, underlined how Machine learning algorithms allow for more efficient and effective reaction optimization and development. Whereas **David Ford**, Director of Chemistry at Snapdragon Chemistry, presented a set of tools developed for process monitoring and control that are applicable to quickly integrated R&D systems as well as the kilo lab.

CDMOs and **Equipment companies** shared improvements of industrial processes using flow chemistry and process models. They presented case studies dealing with several different reactions from their start in R&D development to their usage in the commercial stage giving some hints on when to shift from batch to flow. **Seongho (Ryan) Oh,** Vice President of R&D at SK Biotek discussed about the Key achievements of SK biotek Continuous Tubular Process, including organometallic reactions and hazardous reactions.
Philippe Roth, Application Engineer at Corning Incorporated, highlighted practical aspects and improvements learned from industrial applications to help other manufacturers improve their own installations and unlock additional benefits of flow chemistry. **Mark McLaws**, VP, CMC & Development at Asymchem, discussed key topics to consider when deciding to transition to Continuous flow manufacturing and strategies for effecting that transition. **Niall Mitchell**, Principal Consultant at PSE described applications of mechanistic model-based digital design of continuous drug substance manufacturing processes.

In an "out of the box" session **Manjit Singh**, Chair of the Pharmaceutical Supply Chain Initiative (PSCI), introduced participants with the hot topics in responsible supply chain management post-Covid and the importance of industry-wide standards to build sustainable and resilient supply chains.

The CFRT virtual experience gave the opportunity to people to meet once again in a friendly environment and do networking thanks to specific digital tools such as video meetings, virtual booths and the presence of TKS Publisher and event organizer's staff live for all the time.

We are really looking forward to meeting next year in **Graz (Austria)** on 27-29 September 2022 for our **13th CFRT symposium**.
Have a look at our website and stay tuned
www.flowchemistrytks.com

Last but not least following on from the success of the Flow Chemistry Pavilion at ACHEMA 2018, we are pleased to announce that 27 Companies will join us for the Second Edition of the Flow Chemistry Pavilion Hall 9.1 at ACHEMA 2022 (22-26 Aug, Frankfurt am Main, Germany)!
To keep up to date, please visit our website:
www.teknoscienze.com/achema-2022-flow-pavilion/

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