

# Integrated Continuous Biomanufacturing VI

An ECI Conference Series

## Poster Presentations

18 October 2024

- 1 **Mechanistic modeling, state estimation, and control of continuous lyophilization**  
Prakitr Srisuma, Massachusetts Institute of Technology, USA
- 2 **A fully automated perfusion process using Raman spectroscopy**  
Anita Kundu, AstraZeneca, USA
- 3 **A novel approach for instant implementation of Raman-based PAT with integrated real-time process control**  
Graziella Piras, 908 Devices, USA
- 4 **Continuous Biomanufacturing with *K. phaffii* (*P. pastoris*): Perfusion Process Development and Downstream Considerations for Therapeutic Protein Production**  
Marina Y. Linova, Department of Chemical and Biochemical Engineering, Technical University of Denmark, Denmark
- 5 **The RABBIT jumps ahead - Rapid A BioSMB Biolayer Interferometry Technology**  
Thomas Kruse, Sartorius, Corporate Research, Germany
- 6 **Digital Twin of a Continuous Antibody Capture Step**  
Bernt Nilsson, Lund University, Sweden
- 7 **End-to-end continuous bioprocess automation with central data management**  
Wolfgang Sommeregger, Qubicon AG, Austria
- 8 **Cost reduction and optimization of CHO mAb-producing perfusion cell culture by identifying viability-limiting media components**  
Milla Neffling, 908 Devices, Canada
- 9 **Transcriptomics Based-Modeling And Model-Based Medium Optimization Approaches In Perfusion Cultures**  
Kévin Colin, Div. of Decision and Control Systems, KTH Royal Institute of Technology, Stockholm, Sweden, Sweden
- 10 **Effect of glucose and amino acids on volumetric and cell specific productivity**  
Sarah Harcum, Clemson University, USA

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- 11 **Development of In-line Viral Inactivation (iVI) System for Enabling Integrated Continuous Processing**  
Santosh B. Rahane, MilliporeSigma, USA
- 12 **Model-based optimization and control of single pass tangential flow filtration (SPTFF) of monoclonal antibodies**  
Venkataramana Runkana, Tata Consultancy Services, India
- 13 **Modeling of a Bioreactor for Production of Monoclonal Antibodies**  
Venkataramana Runkana, Tata Consultancy Services Research, India
- 14 **Implementation of Raman Spectroscopy for in-line monitoring of critical process parameters of CHO cell perfusion cultures**  
Ushma Mehta, MilliporeSigma, USA
- 15 **Advances in automation and process control to increase productivity via intensified fed-batch process for bispecific and monoclonal antibodies**  
Anthony Beaney, Lonza Biologics, United Kingdom
- 16 **Automation of Perfusion Rate Control for Maintaining a Constant Cell Specific Perfusion Rate to Decrease Media Demand**  
Niklas Welzenbach, MilliporeSigma, Germany
- 17 **Increasing Upstream Yield through Bleed Recovery in Perfusion Processes**  
Lisa Wolowczyk, MilliporeSigma, Germany
- 18 **Hybrid deep learning model for in-silico optimization of a dynamic perfusion cell culture process**  
Barney Zoro, Sartorius, United Kingdom
- 19 **Optimization of an Integrated Continuous Biomanufacturing Process to Improve Consistency of a Critical Quality Attribute**  
Charles Budde, Sanofi, USA
- 20 **Mechanistic Modelling, Uncertainty Analysis, and Advanced Process Control of Particle Size Distribution in Continuous Tubular Protein Precipitation**  
Krystian Ganko, Massachusetts Institute of Technology, USA

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- 21 **Setting up a continuous downstream bioprocessing lab platform from an automation perspective**  
Hafsah Rai, Lonza Biologics PLC, United Kingdom
- 22 **Raman spectroscopy implementation for highly concentrated drug substances**  
Alexander Farris, MilliporeSigma, USA
- 23 **Early manufacturing insights and clone selection for perfusion processes**  
Marie Dorn, University College London, United Kingdom
- 24 **Model-based design of a platform for continuous production of recombinant adeno-associated virus**  
Francesco Destro, Massachusetts Institute of Technology, USA
- 25 **Development of an integrated continuous mRNA precipitation-based purification process**  
Maria del Carme Pons Royo, Massachusetts Institute of Technology, USA
- 26 **Mechanistic modeling strategies for continuous lipid nanoparticle manufacturing**  
Pavan K. Inguva, Massachusetts Institute of Technology, USA
- 27 **Retooling membrane adsorbers for continuous chromatography: Fitting a square peg into a round hole**  
Claire Velikonja, McMaster University, Canada
- 28 **Continuous production of Influenza virus-like particles using IC-BEVS and multi-stage, cascaded bioreactors**  
António Roldão, iBET, Portugal
- 29 **Heterogeneity in Adeno-Associated Virus Transfection-Based Production Process Limits the Production Efficiency**  
Brian Ladd, KTH, Sweden
- 30 **Leveraging Continuous Unit Operations to Enable a Higher-Yielding Virus-Like-Particle (VLP) Purification Process**  
Adam Kristopeit, Merck & Co., Inc., USA
- 31 **Twin-column Continuous Chromatography for Improving Viral Vector Based Gene Therapies**

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- Thomas Villiger, FHNW, Switzerland
- 32 **High Agitation Adaptation as a Framework for Next Generation Manufacturing Clone Selection**  
Maxine Annoh, AstraZeneca, USA
- 33 **Enhancing AAV production: Impact of integrated and continuous strategies on process economics**  
Ruth de la Fuente Sanz, Cytiva, Germany
- 34 **ECOnti – Accelerated, low ecological footprint, manufacturing platform for continuous production of biotechnological products using microbial cells**  
Florian Simon, enGenes Biotech GmbH, Austria
- 35 **Reviewing the process intensification landscape through the introduction of a novel, multitiered classification for downstream processing**  
Paul Cashen, Sartorius, United Kingdom
- 36 **Cell retention investigations at different development scales to inform perfusion scale-up, operation and impact on downstream processing**  
Delphine Tavernier, UCL, United Kingdom
- 37 **Mechanistic Modeling to Quantify Starling Flow in Hollow Fiber Membranes Used for Tangential Flow Filtration (TFF) in Perfusion Processes**  
Ashna Dhingra, AstraZeneca, USA
- 38 **A 30 kg/day one-step process for continuous concentration, buffer exchange, and formulation of biologics**  
Ujwal Patil, AstraZeneca, USA
- 39 **Withdrawn**
- 40 **VMF: Disruptive Vibro\® technology for continuous biomanufacturing processes**  
Jarno Robin, SANI Membranes, Denmark
- 41 **Downstream Process Intensification Toolbox**  
Jérôme Chevalier, Sartorius Chromatography Equipment S.A.S, France

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Charles Heise, FUJIFILM Diosynth Biotechnologies, United Kingdom
- 43 **Application of upstream and downstream filtration technologies as solutions for continuous bioprocessing**  
Julie Kozaili, Asahi Kasei Bioprocess, USA
- 44 **Evaluation of integrated continuous downstream process of monoclonal antibody developed based on the process characterization**  
Shuichi Yamamoto, Yamaguchi University, Japan
- 45 **Fouling of hollow fiber filters in high cell density perfusion processes – A systematic study to identify causes and strategies to improve filter performance**  
Sri Madabhushi, Merck & Co., Inc., USA
- 46 **Evaluation of High Throughput Scale-Down Models and Scale-Up of an Intensified Dynamic Cell Culture Platform Process**  
Jennifer Nguyen, Pfizer, USA
- 47 **10x in Three Months, the Power of High-density Perfused Batch in Scale down Models.**  
Ethan Bossange, National Resilience, Inc., USA
- 48 **De-bottlenecking the UF/DF steps- Enhancing Recovery and Efficiency in a Continuous Downstream Process**  
Prateek Joshi, Sartorius Stedim Biotech GmbH, Germany
- 49 **Accelerated CMC Development of a Complex Therapeutic Protein in Early-Stage Perfusion Cell Culture Development**  
Amanda Ramsdell, Sanofi, USA
- 50 **Continuous Viral Inactivation using a 3D-Printed Gyroid Column**  
Kareem Fakhfakh, Astrazeneca, USA
- 51 **Solving the separation challenge in perfusion: Lab-scale verification and pilot scale implementation**  
Andreas Andersson, Cytiva, Sweden

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- 52 **3000-L Scale perfusion demonstration and its implication to end-to-end continuous downstream design**  
Nuno Pinto, Merck & Co., Inc., USA
- 53 **Scaling Up Continuous Bioprocessing: Insights from Small-Scale Production**  
Bea Portez, Sanofi, USA
- 54 **Overcoming scale-up challenges in perfusion culture**  
HIROKATSU MAKITSUBO, CHUGAI PHARMACEUTICAL CO., LTD., Japan
- 55 **Implementation challenges of an ultra-high density continuous biomanufacturing process**  
Xiaoxia Jin, Sanofi, USA
- 56 **Development and Implementation of a Generalized Framework for Integrated Process Design to Enable Flexible Biomanufacturing**  
Shashi Malladi, Sanofi, USA
- 57 **Enhanced mAb polishing: novel perspectives for continuous processes**  
Baptiste Balbuena, Merck, France
- 58 **Eco-Design: Alternatives to Process Mass Intensity in Assessing the Impact Of Bioprocessing**  
Andrew Sinclair, Biopharm Services Ltd, United Kingdom
- 59 **Defining an ideal future for reduction, recycling and circularity of single use plastics**  
Lisa Connell-Crowley, Just-Evotec Biologics, USA
- 60 **Development of a highly concentrated supplement to decrease volumetric media demand in perfusion**  
Mona Bausch, MilliporeSigma, Germany
- 61 **Practical process validation approach for continuous bio manufacturing**  
Moe Matsushita, Chugai Pharmaceutical Co., Ltd., Japan

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- 62 **Quantitative reproduction of virus filter filtration behavior, virus removability, and protein/virus retention distribution within the virus filter using an advanced multilayer membrane model**  
Hironobu Shirataki, Asahi Kasei Medical, Japan
- 63 **Column Design and Tracer Considerations for Continuous Packed Bed Viral Inactivation**  
Innara Basria, Food and Drug Administration, USA
- 64 **Machine Learning Driven (bio)process Exploration**  
Matteo Planchestainer, FHNW, Switzerland