

Programme

Tuesday October 15, 2024

13:00 Registration & SPICA Hackathon kick-off session

Optional Workshops (subject to prior registration)

Session Workshop 1

14:00 Fundamentals of Chromatography

Prof. Giorgio CARTA
(UNIVERSITY OF VIRGINIA, Charlottesville, United States)

Session Workshop 2

14:00 Viral Vectors

Dr Michael SCHULTE (MERCK KGAA, Darmstadt, Germany)
Dr Mattia SPONCHIONI (POLITECNICO DI MILANO, Milano, Italy)

Session Workshop 3

14:00 Continuous Chromatography for Small Molecules

Dr Olivier DAPREMONT
(SK PHARMTECO, Rancho Cordova, United States)

15:30 Coffee Break

Session Workshop 4

16:00 Digitalization of Biopharmaceutical Processes

Prof. Massimo MORBIDELLI
(ARISTOTLE UNIVERSITY OF THESSALONIKI, Thessaloniki, Greece)

Session Workshop 5

16:00 mRNA, pDNA and Oligos

Dr Alessandro BUTTE
(DATAHOW, Zurich, Switzerland)

Session Workshop 6

16:00 Continuous Bio-Chromatography

Dr Mattia SPONCHIONI
(POLITECNICO DI MILANO, Milano, Italy)

17:30 End of Workshop Sessions

SPICA 2024 Opening Ceremony

17:45 Opening Address

Prof. Massimo MORBIDELLI (ARISTOTLE UNIVERSITY OF THESSALONIKI, Thessaloniki, Greece)
Dr Mattia SPONCHIONI (POLITECNICO DI MILANO, Milano, Italy)

17:55 Opening Keynote Lecture

Integration of Biology and Engineering to Enable Industrialization of Complex Biotherapeutics

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Dr Konstantin B. KONSTANTINOV
(RING THERAPEUTICS, Cambridge, United States)

- 18:35 Welcome Reception
- 19:35 End of the Day
- 20:15 Informal and optional gathering at Mercato Centrale

Wednesday October 16, 2024

07:30 **Registration**

Session 1 - Sustainability

08:15 **Introduction**

08:20 **Water Conservation and Recycling Strategies in Bioprocessing: The Role of Chromatography**

Prof. Alois JUNGBAUER
(UNIVERSITY OF NATURAL RESOURCES AND LIFE SCIENCES, Vienna, Austria)

08:50 **A Process Systems Engineering Perspective for the Design and Assessment of Integrated Monoclonal Antibody Production Processes**

Dr Sara BADR
(UNIVERSITY OF TOKYO, Tokyo, Japan)

09:10 **Oral Communication 1**

09:30 **Oral Communication 2**

09:50 **Coffee break & Exhibition**

Session 2 - Stationary Phases and Membranes

10:20 **Introduction**

10:25 **Innovative Axial Flow Membrane Module for Protein Chromatography**

Prof. Cristiana BOI
(ALMA MATER STUDIORUM-UNIVERSITÀ DI BOLOGNA, Bologna, Italy)

10:55 **Purification of Nucleic Acids by Ionic-liquids-based Ligands: Exploiting a Multimodal Behavior**

Dr Fani SOUSA
(UNIVERSITY OF BEIRA INTERIOR, Covilhã, Portugal)

11:15 **Oral Communication 3**

11:35 **Oral Communication 4**

11:55 **Lunch break & Exhibition**

13:00 **SPICA Hackathon Working Groups**

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13:00 **Optional Vendor Seminars**

Session 3 - Small Molecules

14:00 **Introduction**

14:05 **Is MultiColumn Continuous Chromatography still Used to Support New Drug R&D?**

Dr Antoni SEVERINO
(UCB, Braine-l'Alleud, Belgium)

14:35 **Pros and Cons on the Use of Dimethyl Carbonate as a Green Alternative to Acetonitrile in Reversed Phase Liquid Chromatography for Analytical and Preparative Purposes**

Prof. Martina CATANI
(UNIVERSITÀ DEGLI STUDI DI FERRARA, Ferrara, Italy)

14:55 **Oral Communication 5**

15:15 **Oral Communication 6**

15:35 **Coffee break & Exhibition**

SPICA Slam Session

16:05 **10 Slam Presentations by young scientists**

Poster Session 1

17:50 **Presentation of posters with odd numbers & networking**

19:00 **End of the Day**

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Thursday October 17, 2024

Session 5 - Proteins and Peptides

08:15 **Introduction**

08:20 **A Roadmap to Fast and in-silico DSP Process Development: Applied Modelling Concept Utilization**

Dr Dejan ARZENSEK
(NOVARTIS, Ljubljana, Slovenia)

08:50 **How to Design an Automated Low-cost Pilot Scale Magnetic Bioseparation Process for Protein Separation from Complex Mixtures**

Prof. Sonja BERENSMEIER
(TECHNICAL UNIVERSITY OF MUNICH, Munich, Germany)

09:10 **Oral Communication 7**

09:30 **Oral Communication 8**

09:50 **Coffee break & Exhibition**

Session 6 - New Modalities

10:20 **Introduction**

10:25 **(R)Evolution in Downstream Processing of New Modalities: What Will be the Role of Chromatography?**

Dr Cristina PEIXOTO
(IBET, Oeiras, Portugal)

10:55 **Digital Twin and Process Analytical Technologies Application to Vaccine Purification Process Development**

Dr Antonio CARDILLO
(GLAXOSMITHKLINE, Siena, Italy)

11:15 **Oral Communication 9**

11:35 **Oral Communication 10**

11:55 **Lunch break & Exhibition**

13:00 **SPICA Hackathon Working Groups**

13:00 **Optional Vendor Seminars**

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Session 7 - Continuous Chromatography

- 14:00** **Introduction**
- 14:05** **Large-scale TIDES purification with MCSGP under GMP**
Dr Ralf EISENHUTH
(BACHEM AG, Bubendorf, Switzerland)
- 14:35** **Extending the Range of Twin-Column Chromatography (MCSGP): Dynamic Control and Process Concepts**
Dr Thomas MÜLLER-SPÄTH
(CHROMACON AG, Zurich, Switzerland)
- 14:55** **Oral Communication 11**
- 15:15** **Oral Communication 12**
- 15:35** **Coffee break & Exhibition**

Session 8 - Digitalization

- 16:05** **Introduction**
- 16:10** **Digitalization of DSP Operations and the Role of Hybrid Models**
Dr Alessandro BUTTE
(DATAHOW, Zurich, Switzerland)
- 16:40** **Harnessing Explainable Machine Learning in Image Analysis and Large Pre-trained Neural Networks to Predict and Analyse Process Performance in Biomanufacturing**
Dr Lukas GERSTWEILER
(THE UNIVERSITY OF ADELAIDE, Adelaide, Australia)
- 17:00** **Oral Communication 13**
- 17:20** **Oral Communication 14**
- 17:40** **Poster Session 2**
- 17:40** **Presentation of posters with even numbers & networking**
- 18:55** **End of the Day**
- 20:30** **SPICA Conference Dinner at i Chiostri di San Barnaba**

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Friday October 18, 2024

Session 9 - Modeling and Control

09:00 **Introduction**

09:05 **Digital Tools for Informed Design of Chromatographic Separation Processes**

Dr Maria PAPATHANASIOU
(IMPERIAL COLLEGE LONDON, London, United Kingdom)

09:35 **Biopharma 4.0 for Biologics Manufacturing Under Pandemic Constraints - Digital Twins in Quality-by-Design Based Process Design and Control for Autonomous Operation**

Prof. Jochen STRUBE
(CLAUSTHAL UNIVERSITY OF TECHNOLOGY, Clausthal-Zellerfeld, Germany)

09:55 **Oral Communication 15**

10:15 **Oral Communication 16**

10:35 **Coffee break & Exhibition**

SPICA Award Session

11:05 **Introduction**

11:10 **SPICA Tube - best video presentations**

11:30 **SPICA Slam winner presentation**

11:45 **SPICA Hackathon group presentation**

12:15 **Poster Prizes**

12:30 **SPICA 2024 Closing Remarks**