

Program

Single-Use Technologies V: Building The Future

March 20 - 23, 2022

Marseille, France

Conference Chairs

Magali Barbaroux, Sartorius, France

Martina Micheletti, University College London, UK



Engineering Conference International
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Previous conference in this series

Single-Use Technologies: Bridging Polymer Science to Biotechnology Applications

October 18-21, 2015

Leesburg, VA, USA

Conference Chairs:

Ekta Mahajan, Genentech, Inc., USA

Gary Lye, Department of Biochemical Engineering, University College London, UK

Single-Use Technologies: Bridging Polymer Science to Biotechnology Applications II

May 7-10, 2017

Tomar, Portugal

Conference Chairs:

Ekta Mahajan, Genentech, Inc., USA

Gary Lye, Department of Biochemical Engineering, University College London, UK

Regine Eibl, Zurich University of Applied Science, Switzerland

Single-Use Technologies: Bridging Polymer Science to Biotechnology Applications III

September 23 – 26, 2018

Snowbird, Utah, USA

Conference Chairs:

Weibing Ding, Amgen, USA

Martina Micheletti, University College London, United Kingdom

Robert Repetto, Pfizer, USA

Single-Use Technologies IV Webinar

May 20, May 25, June 1, 2021

Conference Chairs:

Magali Barbaroux, Sartorius, France

Weibing Ding, Amgen, USA

Martina Micheletti, University College London, United Kingdom

Conference Sponsors

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Conference Schedule

Single-Use Technologies V: Building The Future

March 20 - 23, 2022

Marseille, France



Engineering Conference International
32 Broadway, Suite 314 - New York, NY 10004, USA
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Locations and Notes

- *Please wear your mask except when giving a presentation or actively eating or drinking. Please maintain physical distancing as much as possible.*
- *Audio, still photo and video recording by any device (e.g., cameras, cell phones, laptops, PDAs, watches) is strictly prohibited during the technical sessions, unless the author and ECI have granted prior permission.*
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Sunday, March 20, 2022

13:00	Early conference check-in (Check in will be available until 18:00 in the ECI secretariat room)
14:00 – 17:30	Pre-conference Workshop Basics of environmental sustainability for bioprocess and plastics Dr Brenda Parker, Associate Professor, UCL Dr Magali Barbaroux, Corporate Research Fellow, Sartorius Dr Jürgen Betz R&D Director Functional Films & Compounds, Südpack
14:00 – 14:45	<ul style="list-style-type: none">• How to embed sustainability thinking into process design• Software for Life Cycle Assessment methods to decide on product sustainability
14:45 – 15:00	Break
15:00 – 15:30	<ul style="list-style-type: none">• Case studies• Training next generation scientists on sustainability challenges
15:30 – 15:45	Break
15:45 – 16:30	<ul style="list-style-type: none">• Plastic facts and challenges• The New Plastic Economy: background• Driving circularity around product and packaging life cycle (part I)
16:30 – 16:45	Break
16:45 – 17:30	<ul style="list-style-type: none">• Driving circularity around product and packaging life cycle (part II)• Final remarks and perspectives
17:45 – 18:30	Welcome drink
18:30 – 19:00	Chairs' opening remarks
19:00 – 20:00	Keynote Post-approval changes to disposables/SUS Patricia Hughes, CDER/FDA, USA (Virtual)
20:00 – 21:30	Dinner at the hotel

Monday, March 21, 2022

- 07:00 – 08:30 Breakfast
- Session 1 (Part 1): Single-use in pandemic times – lessons learned and future outlook**
Chairs: Ekta Mahajan, Genentech, USA
Jeff Carter, Cytiva, USA
- 08:30 – 08:40 Introduction by Session Chairs
- 08:40 – 09:00 **Enablement by single-use technology of production of two billion vaccine doses of adenovirus-vectored vaccine in under a year**
Carina Citra Dewi Joe, The University of Oxford, United Kingdom
- 09:00 – 09:20 **Proactive and reactive supply chain strategies for risk mitigation**
Hana Sheikh, Genentech, USA (Virtual)
- 09:20 – 09:40 **Company and assembly redundancy – a case study**
Sheryl Kane, Takeda, USA
- Poster Flash**
- 09:40 – 09:45 **A high-throughput single-use platform for vaccine bioprocess development (Poster #2)**
Sarah Slack, University College London, United Kingdom
- 09:45 – 09:50 **Supply of customized Single-Use-Mixer's under tight circumstances became an issue under COVID (Poster #3)**
Per Stobbe, CerCell A/S, Denmark
- 09:50 – 09:55 **High-cell density cryopreservation strategy (Poster #1)**
Julien Muzard, Entegris, France
- 09:55 – 10:00 **Assessing alternate sparger configurations to mitigate supply chain risks in single-use bioreactors (Poster #32)**
Stephanie Ketcham, Bristol Myers Squibb, USA
- 10:00 – 10:30 Coffee Break
- Session 1 (Part 2): Single-use in pandemic times – lessons learned and future outlook**
Chairs: Ekta Mahajan, Genentech USA
Jeff Carter, Cytiva, USA
- 10:30 – 10:40 Introduction by Session Chairs
- 10:40 – 11:00 **Implementing X-ray for single use systems sterilization**
Samuel Dorey, Sartorius, France
- 11:00 – 11:20 **Qualifying X-ray irradiation of single-use systems to address new challenges associated with single-use growth**
James Hathcock, Pall Corporation, USA

Monday, March 21, 2022 (continued)

- 11:20 – 11:40 **UNICAN: Dual capability in single use bioreactors**
Ekta Mahajan, Genentech, USA (Virtual)
- 11:40 – 12:00 **Building the future with on demand 3D printing**
Lena Achleitner, BOKU University of Natural Resources and Life Sciences,
Austria
- 12:00 – 13:00 **Q&A Panel Discussion**
- 13:00 – 14:10 Lunch
- Poster Flash**
- 14:10 – 14:15 **Bioprocess characterization at the micro-scale: Optical sensor integration
in a novel capillary-wave micro-bioreactor (Poster #7)**
Kevin Viebrock, Technische Universität Braunschweig, Germany
- 14:15 – 14:20 **µRAMOS: Online monitoring of respiration activities in 96-Deepwell
Microtiter plates (Poster #9)**
Robert Dinger, AVT-.BioVT RWTH Aachen University, Germany
- 14:20 – 14:25 **In-line monitoring and control of glucose concentration with single-use
sensors in CHO and stem cell applications (Poster #11)**
Jan Müller, Zurich University of Applied Sciences, Switzerland
- 14:25 – 14:30 **Fluid dynamics in a novel single-use bioreactor for personalised T-cell
therapies (Poster #20)**
Gergana Georgieva Atanasova, University College London, United Kingdom
- Session 2: Sensors and their integration with single-use technology**
Chairs: Torsten Mayr, TU Graz, Austria
Jim Furey, PendoTECH, USA
- 14:30 – 14:40 Introduction by Session Chairs
- 14:40 – 15:00 **Improving bioreactor performance using mobile sensors**
Jonas Bisgaard, Freesense ApS, Denmark
- 15:00 – 15:20 **The impact of baffles and probes on flow and power consumption in single-
use bioreactors**
Artemis Danae Charalambidou, University College London, United Kingdom
- 15:20 – 15:40 **Single-Use optical and electrochemical pH sensors in upstream
bioprocessing**
Erica Berilla, FDA, USA (Virtual)
- 15:40 – 16:00 **Measuring the liquid volume in a flexible bioprocess container with Single
Use Pressure Sensors**
Nick Troise, PendoTECH, USA
- 16:00 – 16:30 **Q&A Panel Discussion**
- 16:30 – 17:00 Stretch Break

Monday, March 21, 2022 (continued)

17:00 – 19:00 **Poster Session 1** with drinks and snacks

20:00 – 21:30 Dinner at MxMarseille

Tuesday, March 22, 2022

07:00 – 09:30 Breakfast

09:30 – 12:30 Excursion – walking tour in the city of Marseille

12:30 – 13:40 Lunch

Poster Flash

13:40 – 13:45 **Driving innovation in sustainability through product Life Cycle Assessments** (Poster #28)
Nicole Hunter, Watson-Marlow Fluid Technology Group, United Kingdom

13:45 – 13:50 **Developing a flexible automated continuous downstream processing system for research to clinical supply** (Poster #13)
Ben Gay, CPI, United Kingdom

13:50 – 13:55 **Clarification of cell culture broth using single use disposable BioSettlers** (Poster #16)
Dhinakar Kompala, Sudhin Biopharma Company, USA

13:55 – 14:00 **Standardization of visible particles measurement in single-use systems, an advantage for the emerging applications** (Poster #22)
Fanny Gaston & Melanie Gauthier, Sartorius Stedim FMT SAS, France

Session 3: Single-Use advantages in continuous and connected processing

Sponsored by Cytiva

Chairs: Catherine Piton, Pall Biotech, United Kingdom
Mark Brower, Merck, USA

14:00 – 14:10 Introduction by Session Chairs

14:10 – 14:30 **Intensified bioprocessing enabling single-use technologies**
Martin Glenz, Pall Biotech, Germany

14:30 – 14:50 **From N-1 to purified product in a closed and connected single use technology process industry**
Andreas Castan, Cytiva, Sweden

14:50 – 15:10 **Process intensification: Impact on cost, facility footprint and sustainability matrix**
Miriam Monge, Sartorius, France

15:10 – 15:30 **cGMP friendly single-use TFF filter for continuous biologics manufacturing**
Francisco Pelaez, Merck & Co., Inc., USA

15:30 – 16:00 **Q&A Panel Discussion**

16:00 – 16:30 Stretch Break

16:30 – 18:30 **Poster session 2** with drinks and snacks

Tuesday, March 22, 2022 (continued)

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|---------------|---|
| 18:30 – 19:30 | Keynote
Pathways to evaluate and improve the sustainability of plastics – an overview
Hans-Josef Endres, Leibniz University Hannover, Germany |
| 19:30 – 21:30 | Banquet Dinner and Awards at the hotel |

Wednesday, March 23, 2022

- 07:00 – 08:30 Breakfast
- Session 4: Single-use adoption in emerging applications**
Chairs: Qasim Rafiq, University College London, United Kingdom
Sandrine Morgenstern-Egli, Lonza AG, Switzerland
- 08:30 – 08:40 Introduction by Session Chairs
- 08:40 – 09:00 **Process development for improved Car-t production utilizing an automated single use perfusion stirred-tank bioreactor**
Tiffany Hood, University College London, United Kingdom
- 09:00 – 09:20 **Integrated upstream and midstream processing with scalable pre-configured single-use assemblies for accelerated commercial reach**
Thomas Robert, Univercells Technologies, Belgium
- 09:20 – 09:40 **Scale-down of an orbital shaken bioreactor: High cell density cultivation in perfusion mode and virus production**
Sven Göbel, Max-Planck Institute, Germany
- 09:40 – 10:00 **Microbiome product manufacture out of a SU facility set up**
Christopher McChalicher, Seres Therapeutics, USA
- 10:00 – 10:30 **Q&A Panel Discussion**
- 10:30 – 11:00 Coffee Break
- Session 5: Single use and sustainability**
Sponsored by Südpack Medica AG
Chairs: Kristi Budzinski, Roche Genentech, USA
Nelly Montenay, Sartorius, France
- 11:00 – 11:10 Introduction by Session Chairs
- 11:10 – 11:30 **Sustainable resins for single-use technologies**
Hans de Brouwer, SABIC, Netherlands
- 11:30 – 11:50 **Growth through sustainable business model innovation using ICIS Framework**
Chor Sing Tan, Cytiva, USA
- 11:50 – 12:10 **Reduction of water and water-related energy consumption by in-situ media and buffer preparation on demand in continuous integrated**
Daniel Komuczki, BOKU University of Natural Resources and Life Sciences, Austria
- 12:10 – 12:30 **Learning from flexpack industry: Closing the loop**
Juergen Betz, Südpack, Germany
- 12:30 – 13:00 **Q&A Panel Discussion**
- 13:00 – 13:30 Chairs' closing remark
- 13:30 Lunch & Departure

Poster Presentation

1. **High-cell density cryopreservation strategy**
Julien Muzard, Entegris, France
2. **A high-throughput single-use platform for vaccine bioprocess development**
Sarah Slack, University College London, United Kingdom
3. **Supply of customized Single-Use-Mixer's under tight circumstances became an issue under COVID**
Per Stobbe, CerCell A/S, Denmark
4. **Tight controlled scalable Perfusion-SUBs from 250 ml and up**
Per Stobbe, PerfuseCell A/S, Denmark
5. **Automated microscale tools for speeding up both single use and reusable process development during pandemic scenarios**
Jasmin Samaras, University College London, United Kingdom
6. **SARS-COV-2 production in a single-use scalable high cell density bioreactor**
Anna Offersgaard, Copenhagen University Hospital-Hvidovre, Denmark
7. **Bioprocess characterization at the micro-scale: Optical sensor integration in a novel capillary-wave micro-bioreactor**
Kevin Viebrock, Technische Universität Braunschweig, Germany
8. **A fluorescent optical ammonia sensor - Suitable for online bioprocess monitoring**
Torsten Mayr, Graz University of Technology, Institute of Analytical Chemistry, Austria
9. **µRAMOS: Online monitoring of respiration activities in 96-Deepwell Microtiter plates**
Robert Dinger, AVT-BioVT RWTH Aachen University, Germany
10. **Challenges of the workflow for integration of sensors into single-use systems**
Henry Weichert, Sartorius Stedim Biotech GmbH, Germany
11. **In-line monitoring and control of glucose concentration with single-use sensors in CHO and stem cell applications**
Jan Müller, Zurich University of Applied Sciences, Switzerland
12. **Enhancements for a more reliable single-use pH sensor**
Stefan Bardeck, Mettler Toledo, Switzerland
13. **Developing a flexible automated continuous downstream processing system for research to clinical supply**
Ben Gay, CPI, United Kingdom
14. **Advances in hollow fiber membrane technology for high density perfusion cell culture**
Jessica McRoskey, Meissner Filtration Products, USA
15. **Advantage of high turndown SUB for intensified process**
Edward Chan, Genentech, Inc., USA
16. **Clarification of cell culture broth using single use disposable BioSettlers**
Dhinakar Kompala, Sudhin Biopharma Company, USA

17. **Integrated upstream and midstream processing with scalable pre-configured single-use assemblies for accelerated commercial reach**
Thomas Robert, Univercells Technologies, Belgium
18. **The science behind the integrity of single-use system: Investigating liquid leak and microbial ingress mechanisms to determine the maximum allowable leakage limit**
Nathalie Pathier, Sartorius Stedim Biotech GmbH, Germany
19. **Isolation of acellular derivatives of human amniotic fluid in single-use implementation**
Mikhail Skliar, University of Utah, USA
20. **Fluid dynamics in a novel single-use bioreactor for personalised T-cell therapies**
Gergana Georgieva Atanasova, University College London, United Kingdom
21. **Manual visual inspection for particulates in single-use systems: Method development and validation**
Klaus Wormuth, Sartorius Stedim Biotech, Germany
22. **Standardization of visible particles measurement in single-use systems, an advantage for the emerging applications**
Fanny Gaston & Melanie Gauthier, Sartorius Stedim FMT SAS, France
23. **Process development of a serum-free and scalable lentiviral vector production in a single-use bioreactor**
Carme Ripoll Fiol, University College London, United Kingdom
24. **A new single-use disk stack separator for pilot scale CHO cell-based antibody productions**
Vivian Ott, Zurich University of Applied Sciences, Switzerland
25. **Addressing the pain-points of single-use intensified multi-product downstream and liquid processing in a dancefloor production room layout**
Stuart Tindal, Sartorius Stedim Stedim Biotech GmbH, Germany
26. **WITHDRAWN**
27. **Cell growth performance with a new single-use film**
Diana Perez, Merck BioProcessing, USA
28. **Driving innovation in sustainability through product Life Cycle Assessments**
Nicole Hunter, Watson-Marlow Fluid Technology Group, United Kingdom
29. **Preliminary evaluation of PendoTECH® single use sensors post X-ray irradiation**
Nick Troise, PendoTECH, USA
30. **Engineering characterisation of a cubic single-use bioreactor geometry**
Jordan Delbridge, University College London, United Kingdom
31. **Design verification testing methodology for new Rosemount pH sensor**
Jacalyn Saint Rudolph, Emerson, USA
32. **Assessing alternate sparger configurations to mitigate supply chain risks in single-use bioreactors**
Stephanie Ketcham, Bristol Myers Squibb, USA

33. **Study of mechanical behavior on single use bags welding under gamma irradiation**
Nina Perier, Sartorius Stedim Biotech, France
34. **The challenges of performing high density perfusion processes in single use bioreactors**
Anita Dabek, Lonza Biologics, United Kingdom
35. **Risk-based qualification of X-ray sterilization for single-use systems**
Timo Neumann, Merck KGaA, Germany