**Short course on**

Continuous Chromatography for mAbs / Oligonucleotides and Peptides

10th -12th September 2024

Aim

The aim of this course is to provide an introduction to continuous chromatography with hands-on practice with capture and polishing processes for biomolecules. These processes lead to improvements in productivity and manufacturing costs while reducing environmental footprint. Attendees will acquire the basic tools to design, run and evaluate multicolumn processes and to quantify these improvements, serving as basis for an economic evaluation. As the least complex of all multicolumn processes, the workshop is focused on twin-column chromatography.

Who should attend

This course is aimed at industry and academic separation scientists and process development engineers who already have some familiarity with single column chromatography and who want to broaden their understanding of chromatographic processes and look at new, more efficient and sustainable ways to separate and polish biomolecules.

Scope

- Introduction to continuous chromatography for biomolecules
- Theory of multi-column chromatography
- Design of multi-column chromatography processes
- Hands-on training on twin column equipment for capture and polishing applications
- Process performance evaluation and scale-up
- Introduction to process modelling

This workshop does not cover 4-zone SMB, chiral and small molecule separations.

“The continuous chromatography course had an excellent balance of theoretical content and laboratory based exercises. It was great to explore the significant gains observed in productivity, buffer consumption and resin utilization over batch chromatography.”

PhD. Theresa Ahern, Eli Lilly (IE)

Format

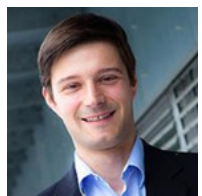
The course comprises presentations and interactive workshops using laboratory-scale Contichrom® CUBE twin-column separation & purification systems. Subject matter experts will support the participants during the interactive workshops and data analysis sessions. The course covers both capture and polishing applications.

Course leaders



Massimo Morbidelli, Ph.D., Professor (emerit.) Institute for Chemical and Bioengineering, ETH Zurich

A pioneer in preparative continuous chromatography and in particular in the application of multicolumn technologies for protein purification in the pharma industry, Prof. Morbidelli has co-authored over 500 research articles and four books. He serves as associate editor for the Industrial & Engineering Chemical Research journal of the ACS and is the recipient of the 2005 RH Wilhelm award from the AIChE and of the 2014 Gerhard Damkoehler medal of DECHEMA. He is a co-founder of ChromaCon AG in Zurich.



Thomas Müller-Späth, Ph.D., CEO at ChromaCon AG in Zurich.

After an assignment at Bayer Healthcare, Thomas completed his doctoral work on continuous chromatography of biomolecules in the group of Prof. Morbidelli, and co-founded ChromaCon AG to bring the technology to the market. He has been working on research projects with industrial partners, development of chromatography processes and equipment, and IP management. He has presented on numerous workshops and conferences on continuous chromatography and has co-authored over 20 publications and patents.

Supervisors and tutors

Sebastian Vogg, Richard Weldon, Nicole Ulmer, Lars Aumann

Venue

The course will be held at the University of Applied Sciences and Arts Northwestern Switzerland (FHNW) at the new campus in Muttenz (Basel). The FHNW Muttenz Campus is well served by public transport (see <https://www.fhnw.ch/en/about-fhnw/locations/muttentz>). International flight connections are available from Basel and Zurich International Airports.

Note: As the workshops will take place in a laboratory environment we ask that participants dress appropriately. Open shoes are not permitted. Safety glasses and lab coats will be provided.

Course program

The course takes place 10.09.-12.09. (3 days).

Day 1

Lecture 1: Production of Bio-Therapeutics

Lecture 2: Fundamentals of Large-Molecule Chromatography

Lab Workshop 1: Contichrom CUBE and Batch Capture

Lecture 3: Continuous Countercurrent Chromatography

Lecture 4: Affinity (Capture) Chromatography

Lab Workshop 2: CaptureSMB

Lecture 5: Performance Evaluation of Continuous Chromatography

Day 2

Lecture 6: Bind and Elute (Polishing) Chromatography

Lab Workshop 3: Linear Gradient Chromatography

Lab Workshop 4: Evaluation Center

Lab Workshop 5: Evaluation of Batch and CaptureSMB

Presentation of Capture Results by Groups

Lab Workshop 6: MCSGP

Day 3

Lecture 7: Integrated Continuous Manufacturing and Process Digitalization

Lecture 8: Modeling and Simulations

Lab Workshop 7: Evaluation of MCSGP

Presentation of Polishing Results by Groups

Lecture 9: Scale-up of continuous chromatography

Lecture 10: N-Rich Process for Isolation of Impurities

Course Wrap-up

Guided lab tour (optional)

This program might be subject to minor changes

Course fees

The course fee is CHF 3'000. This includes lecture summaries in paper and electronic formats, materials used during the workshop, internet access (Wifi), lunch and coffee breaks as well as participation in the evening program/dinner. It does not include accommodation, travel costs or catering other than indicated above.

Terms and conditions

Confirmation: A confirmation of participation will be provided to each participant after completing the course.

Number of participants: A minimum of 8 and a maximum of 12 participants will be accepted in the course.

Cancellation policy: Cancellation of registration must be made in writing or by email. A cancellation fee of CHF 250 will be charged, and a cancellation after August 15, 2024 will incur a fee of 50% of the total course cost. A colleague or associate may be substituted without penalty. Full refunds will be made in the case that the course is cancelled due to insufficient enrolment.

Accommodation

Travel and accommodation are not included in the course fee. Hotel recommendations include:

Hotel Baslertor*** (www.hotel-baslertor-muttENZ.ch)

Hotel b_motel*** (www.b-smarts.net/basel)

Movenpick Basel**** (www.movenpick.com/basel)

Disclaiming statements

FHNW and the course organisers will not assume responsibility for medical expenses of participants or damage caused by participants.

All participants are urged to ensure that they are covered by their own travel, health and liability insurance policies while traveling to and from and while attending the course.

FHNW and the course organisers are not responsible for private possessions lost or stolen at a course.

Registration

Please use the following link for registration:

www.fhnw.ch/ccb

Registration is only complete after payment.

Registration is binding unless the minimum of participants cannot be reached.

Only participants with industry and academic affiliation can be accepted, no vendors.

Registration deadline is July 31st, 2024.

To register past the deadline, please write to the course officer at info.lifesciences@fhnw.ch to check if places are still available.

Registration Website



Event sponsor



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Institute for Pharma Technology
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www.fhnw.ch/bpt