**Day 1 April 23, 2024 Une image contenant texte, Police, Graphique, logo

Description générée automatiquement Une image contenant Réservoir de stockage, bâtiment, cylindre, silo

Description générée automatiquement *Chromatography Technology & Applications***

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| **Time** | **Topic** | **Lead** |
| 8:15am | Shuttle Pick up at the Holiday Inn |  |
| 8:20am | Shuttle Pick up at the i-Hotel |  |
| 8:30 – 9:00am | *Breakfast & Registration & Introductions* |  |
| 9:00 – 10:30am | Start of Part 1 of AM Session   * Introduction to Chromatography. * Deep journey into the theory: chemical & physical interactions, main equations & design implications. | Hector Osuna, R&D Manager |
| 10:30 – 10:45am | *Break* |  |
| 10:45 – 12:00pm | Start of Part 2 of AM Session   * Scale-Up: from lab to industrial scale (defining CAPEX and OPEX from trials). * Batch Chromatography to Continuous Chromatography. | Hector Osuna, R&D Manager |
| 12:00 – 1:00pm | *Lunch* |  |
| 1:00 – 3:00pm | Start of Part 1 of PM Session   * Industrial Design: Process design & industrial equipment. * System Operation: Separation zones, parameters setting, operation sequences, troubleshooting guidelines. * Case studies: Sugars & Sweeteners, Organic Acids. | Hector Osuna, R&D Manager  Antoine Charbonneau, Process Manager |
| 3:00 – 3:15pm | *Break* |  |
| 3:15 – 4:45pm | Start of Part 2 of PM Session   * Digital Tools: Run4.0 & Perform4.0, Link4.0. * Run4.0 & Perform4.0 digital platforms Demo. | Hector Osuna, R&D Manager  Antoine Charbonneau, Process Manager |
| 5:00pm | Shuttle from IBRL to Networking Reception at Triptych |  |
| 5:15 - 7:45pm | Networking Reception at Triptych | Triptych |
| 7:30pm | Shuttle from Triptych Networking Reception to Hotels |  |
| 7:45pm | Shuttle from Triptych Networking Reception to Hotels |  |

The AM session will focus on the basic theory behind the technology, including common terms and definitions, evolution of industrial chromatography, basic flow process, physico-chemical interactions, how separation occurs, modes of operation, resin selection, and how to size a system.

The PM session will focus on the implementation of this technology in industrial plants, including pilot testing, scaling-up, installation/commissioning/operation of a system, as well as typical maintenance and troubleshooting guidelines. It will also include new digital tools presentation for day-to-day operational optimization and digital platforms demonstration (dashboards, data management, etc.).

**Day 2, April 24, 2024 Une image contenant texte, Police, logo, Graphique

Description générée automatiquement ![Une image contenant industrie, tuyau, acier, intérieur

Description générée automatiquement]()**

***Ion Exchange Technology & Applications***

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| **Time** | **Topic** | **Lead** |
| 8:15am | Shuttle Pick up at Holiday Inn |  |
| 8:20am | Shuttle Pick up at the i-Hotel |  |
| 8:30 – 9:00am | *Breakfast* |  |
| 9:00 – 10:30am | Start of Part 1 of AM Session   * Introduction to Ion Exchange. * Deep journey into the theory: chemical & physical interactions, design implications. | Hector Osuna, R&D Manager |
| 10:30 – 10:45am | *Break* |  |
| 10:45 – 12:00pm | Start of Part 2 of AM Session   * Scale-Up: from lab to industrial scale (defining CAPEX and OPEX from trials). * Ion Exchange Resin Types & Applications. | Hector Osuna, R&D Manager |
| 12:00 – 1:00pm | *Lunch* |  |
| 1:00 – 2:30pm | Start of Part 1 of PM Session   * Industrial Design: Process design & industrial equipment. * System Operation: Pressure vessels improvements, recycling, troubleshooting guidelines. | Hector Osuna, R&D Manager  Antoine Charbonneau, Process Manager |
| 2:30 – 2:45pm | *Break* |  |
| 2:45 – 3:45pm | Start of Part 2 of PM Session   * Case studies: Sugars & Sweeteners, Amino Acids, Proteins. | Hector Osuna, R&D Manager  Antoine Charbonneau, Process Manager |
| 3:45 – 4:45pm | Tour of IBRL | IBRL Staff |
| 5:00pm | Shuttle from IBRL to Hotels |  |

The AM session will focus on the basic theory behind the technology, including common terms and definitions, evolution of industrial ion exchange, basic flow process, physico-chemical interactions, how purification occurs, modes of operation, resin selection, and how to size a system.

The PM session will focus on the implementation of this technology in industrial plants, including pilot testing, scaling-up, installation/commissioning/operation of a system, as well as typical maintenance and troubleshooting guidelines. It will also include typical case studies review.

**Day 3, April, 25, 2024 Une image contenant texte, Police, Graphique, logo

Description générée automatiquement Une image contenant industrie, cylindre, usine, tuyau

Description générée automatiquement**

***Membrane Filtration Technology & Applications***

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| **Time** | **Topic** | **Lead** |
| 8:15am | Shuttle Pick up at Holiday Inn |  |
| 8:20am | Shuttle Pick up at I-Hotel |  |
| 8:30 – 9:00am | *Breakfast* |  |
| 9:00 – 10:30am | Start of Part 1 of AM Session   * Membrane Terms and Definitions. * Ceramic Membranes: Manufacturing, properties, strengths & weaknesses, geometries, pore sizes & configurations. * Membrane Filtration Process & System: Terms & definitions (Recovery, VCF, diafiltration, etc.), assembly, configurations, batch, fed-batch, etc. | Hafedh Sadani, CPL Manager |
| 10:30 – 10:45am | *Break* |  |
| 10:45 – 12:00pm | Start of Part 2 of AM Session   * Ceramic Membrane Selection: Pore size & geometry. * Case Study: Scaling-Up from pilot testing to the industrial plant. | Hafedh Sadani, CPL Manager |
| 12:00pm – 1:00pm | *Lunch* |  |
| 1:00 – 2:15pm | Start of Part 1 of PM Session   * Equipment & Control: Process control, CIP, backpulse, utility recovery, etc. * Troubleshooting guidelines. | Hafedh Sadani, CPL Manager |
| 2:15 – 2:30pm | *Break* |  |
| 2:30 – 4:00pm | Start of Part 2 of PM Session   * Polymeric membrane (UF, NF). * Case Study: Industrial Membrane system and Complete Process Line. | Hafedh Sadani, CPL Manager |
| 4:00 – 4:45pm | Pilot Plant Demo: Kerasep K01 | Hafedh Sadani, CPL Manager |
| 4:45 – 5:00pm | Certificates & Group Photos | IBRL Staff |
| 5:00pm | Shuttle from IBRL to IHotels |  |

The AM session will focus on the basic theory behind the technology, including common terms and definitions, brief history of ceramic membranes, basic flow process, physico-chemical interactions, how separation occurs, modes of operation, pore size selection, how to size a system, as well as on pilot testing and scaling-up through case study.

The PM session will focus on the implementation of this technology in industrial plants, installation/commissioning/operation of system, equipment and controls, typical maintenance and troubleshooting guidelines, as well as on polymeric membrane and Complete Process Line case study. It will also include a ceramic membrane filtration pilot demonstration.