# ABOUT ARi

**ARi has been providing customers with adsorption, ion exchange and industrial chromatography technology on a large scale for more than 40 years.**

Based in Twin Falls, Idaho, ARi is a subsidiary of the Amalgamated Sugar Company and is a world leader in providing high-efficiency separation, fluid distribution and mixing technologies.

ARi installed its first commercial-scale simulated moving bed (SMB) chromatography system in 1981, and in 1992 started providing fractal-based fluid distribution technology for industrial use. Since that time, ARi has installed a large number of adsorption, ion exchange and industrial chromatography systems in a wide range of industries and in more than 20 countries worldwide.

ARi's technology heritage and flagship application is in beet molasses desugarization in the sugar industry, where ARi is undoubtedly the world's leading technology and equipment supplier. In collaboration with their engineering licensee in these markets, Escon GmbH, ARi has provided more than 25 systems in the beet sugar industry alone, employing resin columns with diameters greater than 22 ft and total installed resin volumes of the order of 35,000 $ft^3$ and more.

To learn more, visit www.arifractal.com


# REGISTRATION

**Registration Fee: $ 900**

**Early bird special: $800 if booked before June 14th, 2024**

*(A 20% discount will be provided to organizations sending two or more representatives)*

To register, please email the following information to Cristina Reynaga (creynaga@arifractal.com):

- Full name
- Job title
- Company
- Address
- Telephone number

**Venue**

The short course will be held at the Magic Valley Arts Council (Sligar Auditorium), at 195 River Vista Place, Twin Falls, Idaho. The auditorium is located within the Elevation 486 building.

**Accommodation**

Rooms have been block-booked at the Fairfield Inn & Suites, at 1788 Washington Street North, Twin Falls, Idaho. The rate is $129 per night, with a booking deadline of September 9th, 2024. Please use the following registration QR code:

**Cancellation Policy**

The meeting organizers reserve the right to restrict numbers as necessary or cancel a course if there is insufficient support. In this event, you will be notified immediately. The organizers are not responsible for the purchase of nonrefundable airline tickets or the associated cancellation or change fees.


2024 Practical Short Course on

# ADSORPTION, ION EXCHANGE & INDUSTRIAL CHROMATOGRAPHY

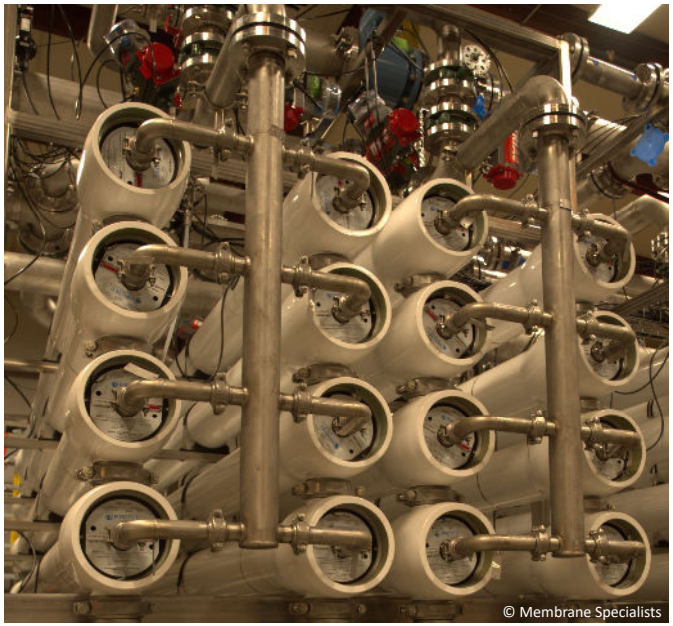
*With a Focus on Direct Lithium Extraction & the Lithium Industry*

September 10 – 11, 2024

Twin Falls, Idaho, USA

ARi

AMALGAMATED RESEARCH




## WHY ATTEND ?

The short course instructors will present the fundamentals of operation and design of adsorbent-based separation technologies using fine granulated media (adsorption, ion exchange and industrial chromatography). This includes instruction on the required pretreatment of feed material and the post-treatment of effluent streams – such as the concentration of lithium-rich process solutions using reverse osmosis membrane technology.

While most events targeting the lithium industry focus on sales and marketing opportunities, the ARi short course emphasizes education, while providing an opportunity to create your own network of experts and industry suppliers. Information will be provided on all stages of project development (ranging from bench-scale studies to industrial commercialization) and the focus is on the practical aspects of integrating adsorbent-based technologies into industrial processes.

A tour of ARi and the resin-based operations in the Twin Falls sugar factory will provide the opportunity to observe pilot-scale and large-scale industrial operations first-hand and have detailed discussions on process scale-up, operations and design. Sufficient time is allocated for interactions between the participants in an informal environment.

| TUESDAY | SEPTEMBER 10, 2024 |
|---|---|
| 8:00 AM | **Welcome and introduction**<br>Vadim Kochergin (ARi) |
| 8:30 AM | **Basic theory of adsorption and ion exchange**<br>Cade Haskell (ARi) |
| 9:30 AM | ***COFFEE BREAK*** |
| 10:00 AM | **The chemistry of ion exchange resins**<br>Rick Muschi (Itochu) |
| 10:30 AM | **The importance of fluid distribution and fractal based equipment**<br>Steve Peacock (ARi) |
| 11:00 AM | **Reverse osmosis and other membrane technologies in the lithium industry**<br>Zach Rust (Membrane Specialists) |
| 11:30 AM | **Pretreatment filtration for separations with granular media**<br>Carl Christian Radinger (Putsch GmbH, Germany) |
| 12:00 PM | ***LUNCH BREAK*** |
| 1:00 PM | **Filtration options for protecting resin- or membrane-based separation processes from suspended solids**<br>Stefan Strasser (Lenzing Technik GmbH, Austria) |
| 1:30 PM | **Ion exchange resins, adsorbents and membranes for the lithium industry**<br>Blake Tremper (Dupont) |
| 2:00 PM | ***COFFEE BREAK*** |
| 2:30 PM | **Optimization of process design for adsorption and ion exchange operations**<br>Peter Ferrero (ARi) |
| 3:30 PM | **Design of energy efficient evaporator stations**<br>Oliver Tzschätzsch (Escon GmbH, Germany) |

| WEDNESDAY | SEPTEMBER 11, 2024 |
|---|---|
| 8:00 AM | **Basic theory of SMB chromatography**<br>Olivia Gluth (ARi) |
| 9:00 AM | **Optimization of process design for SMB chromatography operations**<br>Peter Ferrero (ARi) |
| 10:00 AM | ***COFFEE BREAK*** |
| 10:30 AM | **Tour of ARi Pilot Facility** |
| 12:30 AM | ***LUNCH BREAK*** |
| 1:15 PM | Optional: **Tour of Twin Falls Sugar Factory** |

## TOPICS & OUTCOMES

- Learn the basic principles of adsorbent-based separation technologies, including system design, equipment configurations, process economics and practical applications.
- Understand the major challenges of process and equipment design and optimization for adsorption, ion exchange and industrial chromatography.
- Learn about the resins and adsorbent media used in lithium industry applications.
- Obtain an overview of pretreatment and post-treatment operations for adsorbent-based technologies, including filtration and the application of membrane technology in the lithium industry.
- Observe pilot and industrial equipment in operation.

Network with leading experts in the industry.