Electrolyte Modeling Basics (EMB)

Description: 2-day training in electrolyte simulation techniques using OLI Studio: Stream Analyzer.

Time: EMB, Full Course: two 8-hour days; EMB, Short Course: two 3.5 hour (web) sessions

Summary   The **Electrolyte Modeling Basics** course is designed to train attendees on how to use OLI software and its underlying chemistry principles. At the end of the course, participants will be able to formulate and build their own applications and interpret the data presented in reports and plots. Participants will leave with a qualitative image of how ions and molecules behave in water and a better understanding of properties like alkalinity and pH.

Who should attend: Beginning and prospective OLI clients
                 Class is designed for participants with little or no knowledge of OLI simulation techniques. Intermediate level clients wanting to refresh their skills may also join this class; there are extra problems in each section that allow for independent inquiry.

Instructor: AJ Gerbino, PhD, an electrolyte simulation expert and author of the workshop

Cost: **In-person Regional Training (EMB, Full Course)**
                $900 USD per person

                Web based on-demand (EMB, Short Course)
                Contact us for the on-demand

                EMB at OLI hosted by OLI Systems, Inc. at OLI's Office in NJ, USA

                Complimentary **ONLY** for current OLI clients

Register: Online: https://www.olisystems.com/oli-training
                Email: dira.silvera@olisystems.com
                Phone: USA   1-973-998-0240 x114

Accommodations: For in-person courses, please bring a laptop. You may also want to bring a tablet to view the manual (not required). For web courses, please ensure that your computer has two monitors, and that you can log into Cisco's Webex.

OLI Software: For EMB-Full Courses, we will be use Studio and OLI Flowsheet: ESP
 For EMB-Short Courses, we will be using mostly OLI Studio: Stream Analyzer.

All participants receive 30-day evaluation copies of OLI software

Electrolyte Modeling Basics Class Content

This workshop will teach electrolyte chemistry concepts and electrolyte simulation techniques, including:

Simulation Techniques & Program Manipulations

- Single point calculation using variety of equilibrium methods: Isothermal flash, bubble / dew points, solubilities, set pH, etc.
- Trend analysis using independent variables of T, P, composition, and pH
- Simple mixing and separations
- Output interpretation, including customization of plots and reports
- Analysis entry – water, oils, other measured data
- Electrochemical stability diagrams

Electrolyte Chemistry Theory

- Electrolyte speciation, acid-base chemistry, and other common chemical reactions
- Basic electrolyte thermodynamics for equilibrium constants and activity coefficients
- Precipitation/Dissolution and vapor/liquid reactions
- Oxidation-Reduction redox potential.

Chemistry Model Manipulation

- Adding/removing solid phases and which phases to select
- Building Azeotropes
- Modifying Critical properties of pseudocomponents
- Selectively manipulating oxidation-reduction reactions

Applications

A portion of the second day in the full course will focus field applications that users bring to the class or that users select from the following lists:

Studio Analyzer Applications	OLI Flowsheet: ESP Applications
Mineral scaling during production	Multi-unit Process Simulation Application
Product yield – solids precipitation	Distillation towers
Crude tower overhead desublimation	Gas scrubbing/treating
Warm lime softening	Process/Waste-water treatment
Evaporative crystallization	Air stripping
Dehydration	Membrane processing
Ion exchange and adsorption	
Corrosion simulation studies	