

**EXPAND<sup>®</sup> - Seminars List & Abstracts**  
**Presentations & Training**

<b>Part Number</b>	<b>Seminar Title</b>	<b>Seminar Abstract</b>
862121	Test Methods for Integrity Testing	In-depth presentation of common integrity testing methods used on both hydrophilic and hydrophobic membrane filters. Theoretical and practical aspects of Diffusive flow, Pressure Decay/Hold, Bubble Point, Water Intrusion Test, and their correlation to bacterial retention are presented.
862122	The Water Intrusion Test	Presentation discusses the advantages of using the Water Intrusion Test (WIT), initially introduced by Sartorius in 1990. WIT was developed to overcome the disadvantages of using alcohol as the wetting agent. The use of high purity water to test the integrity of the hydrophobic filters improved efficiency and safety in performing these critical tests.
862123	Validation of Automatic Integrity Systems	Seminar offers step-by-step instructions and demonstrations on the validation of systems like automatic integrity testers as required by cGMP. The Validation Model with the main components IQ, OQ and PQ are discussed.
862231	Principles of Filtration Technology	A practical seminar on the why's and how's of membrane filter selection and use, integrity testing, operation and filter documentation. The seminar explains the most common filter terms and is useful for training production operators and new employees.
862232	Adsorption Characteristics of Membrane Filters	Seminar is focused on the selection of filter materials and membranes for pharmaceutical applications. Product / preservative adsorption to membranes can reduce yields and affect drug properties. Individuals in R&D process development and validation who are involved in the selection of filter materials should attend.
862233	Process Filtration in the Pharmaceutical Industry	Seminar provides an overview of membranes and prefilters. Different filter materials with their properties are presented as well as their benefits for typical pharmaceutical applications. Commonly used terms are defined, such as; throughput, non-specific adsorption, particle retention, and methods for scaling-up.
862234	Practical Aspects of Air Filtration	Overview of air filtration in general along with technical requirements for air filters, filter materials, construction of cartridges, sizing and more; sizing, hydrophobicity, blow-down, and WIT.
862235	Steam Sterilization of Membrane Filters	In-line steam sterilization and autoclaving exposes membrane filter cartridges to the high temperatures and pressure conditions. Assuring that filters are effectively steam sterilized without subsequent damage is the focus of the seminar. Discussion covers the thermodynamics of steam collapse, influence of viscosity, temperature and pressure.

862340	Rapid & Effective Separation Technology with Membrane Adsorbers	An overview and introduction of this innovative separation technology for purifying biomolecules using Membrane Adsorbers (MA). Different MA types and designs are discussed with regard to features, applications in development to production scale, efficiency, speed and handling. Results from wide spectrum of applications in the biotech industries and comparisons to other separation techniques are also topics of this seminar.
862341	Modular Design of Membrane Adsorbers for Large Scale Purification of Biomolecules	This presentation discusses the critical role Membrane Adsorbers (MA) contribute to separation and purification processing steps; e.g., capturing of dilute or large biomolecules and polishing steps for trace contaminant removal, (DNA, host cell protein), at high flow rates. Critical biotech applications for these uniquely designed MA devices include viral clearance, product concentration and purification for processing large volumes at high flux.
862351	Validation Services for Filters & Current Regulatory requirements	Program focuses on all aspects of filter validation including; bacterial challenge testing, analysis of extractables, integrity testing, particle testing, Biosafety testing and USP test specifications.
862352	Polymeric Extractables Testing and Analysis	Polymeric extractables that can affect quality and efficacy should be tested for in actual product. This seminar describes the analytical techniques and methodologies such as GC-MS, RP-HPLC and FTIR to quantify and identify filter extractables in terms of their chemical nature and quantity under 'worst case' conditions.
862354	FACTS® Service Program	FACTS Service Program represents the Sartorius pledge to fulfill customer needs for technical services and filtration support. Four key areas of FACTS will be discussed: Validation Services, Process Optimization, Technical Training & Seminars, Key Account Management
862355	Process Simulated Bacteria Challenge Tests	Seminar discusses regulatory viewpoints to fulfill the "worst case" conditions according to the ASTM F838-83 standard.
862455	INCREASE® The Process Optimization Program	Sartorius process optimization program for critical applications in the pharmaceutical industry. In order to optimize the customer's process in terms of product yield, process time and safety the following must be performed; On-site plant and process surveys, Filterability studies, Process related scale-up calculations and trials.
862456	Design Optimization of Liquid Filtration Systems	A practical review of the proper filterability test procedure for liquid system sizing and proper data handling is provided in a case study format.
862457	Design Optimization of Air Filtration Systems	Discussion covers all important aspects for system sizing such as, temperature, pressure, velocity, pipe diameter, etc.
862571	Crossflow System Capabilities	Seminar presents custom-tailored system designs that can be applied to general Crossflow biopharmaceutical applications. Capabilities with regard to SIP, CIP and process visualization are discussed
862572	Scale-up of Crossflow Systems	An in-depth look at the models associated with scale-up of crossflow micro and ultra filtration devices.
862573	Principles of Crossflow Filtration	A general review of the principles of crossflow filtration is presented during this seminar. Emphasis is placed on practical application considerations used in biotechnology processes.
862098	Seminar Materials & Supplies	Seminar materials and supplies.
862099	General Seminar Fee	General fee for seminar & workshop including accessories, other items necessary for proper presentation, travel and expenses.

1. Each Seminar Presentation is approximately 45 – 60 minutes.
2. Workshops and hands-on training typically require one day.
3. Costs and fees will vary depending on location and class sizes.