



SOUTHWEST RESEARCH INSTITUTE



Introduction to Microencapsulation

Southwest Research Institute

6220 Culebra Rd. • San Antonio, TX

April 7 – 9, 2025

Course Overview

SwRI is hosting an Introduction to Microencapsulation 2.5 day workshop. This workshop will introduce participants to microencapsulation and nanoencapsulation. Major common encapsulation techniques and formulations will be presented, along with examples, equipment, strengths, weaknesses, and state of the art. Additional aspects of encapsulation to be discussed include materials, process scale, and application examples.

Cost

The course cost is \$995 USD per registrant. Visit microencapsulation.swri.org to register. Registration includes course instruction, training material provided to download, facility tour, lunch, and process demonstrations.

Course Topics

- Atomization: spray drying, spray chilling, spray congealing, electrostatic
- Spray coating: fluid bed coating, granulation
- Coextrusion: annular jet atomization, vibrating nozzle, microfluidics
- Emulsion-based processes: coacervation, interfacial polymerization, in situ polymerization, liposomes, solvent evaporation
- Nanoencapsulation
- Encapsulation materials
- Bioencapsulation
- Economics of encapsulation
- Scale-up considerations
- Applications

For more information,
please contact:

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Sign up
for
e-mail
updates



| Day 1 - Physical Techniques | | |
|--|--------------|------------|
| Topic: | Start | End |
| REGISTRATION & BREAKFAST OPENS | 8:00 AM | 8:30 AM |
| Greeting/Introduction | 8:30 AM | 9:00 AM |
| Overview of Microencapsulation | 9:00 AM | 10:00 AM |
| BREAK | 10:00 AM | 10:15 AM |
| Atomization: Spray Drying, Chilling, and Prilling | 10:15 AM | 11:05 AM |
| Spinning Disc | 11:05 AM | 11:45 AM |
| DEMO spray drying, TOUR spinning disc | 11:45 AM | 12:25 PM |
| LUNCH | 12:25 PM | 1:25 PM |
| Fluid Bed Coating | 1:25 PM | 2:10 PM |
| DEMO Fluid bed, TOUR cGMP/Scale-up | 2:10 PM | 2:50 PM |
| BREAK | 2:50 PM | 3:05 PM |
| Coextrusion | 3:05 PM | 3:50 PM |
| DEMO Brace/Dolomite, TOUR Encapsulation Operations | 3:50 PM | 4:30 PM |
| BREAK | 4:30 PM | 4:45 PM |
| Applications | 4:45 PM | 5:15 PM |
| Q&A, LIGHT RECEPTION | 5:15 PM | 6:00 PM |
| Day 2 - Emulsions and Materials | | |
| Greetings/Review | 8:30 AM | 8:50 AM |
| Interfacial Polymerization | 8:50 AM | 9:20 AM |
| In Situ Polymerization | 9:20 AM | 9:40 AM |
| Coacervation | 9:40 AM | 10:25 AM |
| BREAK | 10:25 AM | 10:45 AM |
| DEMO Emulsions, TOUR Extrusion Suite | 10:45 AM | 11:15 AM |
| Solvent Evaporation/Extraction | 11:15 AM | 12:00 PM |
| Nanoencapsulation | 12:00 PM | 12:30 PM |
| LUNCH | 12:30 PM | 1:30 PM |
| Characterization | 1:30 PM | 2:15 PM |
| TOUR Analytical labs and pilot-scale spray dryer | 2:15 PM | 2:45 PM |
| BREAK | 2:45 PM | 3:05 PM |
| Core Materials | 3:05 PM | 3:30 PM |
| Shell Materials | 3:30 PM | 4:00 PM |
| BREAK | 4:00 PM | 4:20 PM |
| Economics | 4:20 PM | 4:50 PM |
| Wrap-up, Questions | 5:00 PM | 5:15 PM |
| Day 3 - Special Topics | | |
| BREAKFAST TACOS | 8:00 AM | 8:15 AM |
| Safety & Scale-up | 8:15 AM | 9:15 AM |
| BREAK | 9:15 AM | 9:30 AM |
| Encapsulation of Biologicals | 9:30 AM | 10:15 AM |
| Challenges and Future | 10:15 AM | 10:45 AM |
| Final Q&A, CONCLUDE | 10:45 AM | 11:00 AM |

