SwRI®
SOUTHWEST RESEARCH INSTITUTE®

# Introduction to Microencapsulation

## Southwest Research Institute
## 6220 Culebra Rd. • San Antonio, TX
## June 11-12, 2018

### Course Overview

This course 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. Participants will tour the encapsulation facilities at SwRI to observe examples of encapsulation equipment to supplement discussions. The course is intended for scientists, engineers, or business professionals interested in learning about common and emerging encapsulation technologies.

### Cost

The course cost is $950 USD per registrant. Visit microencapsulation.swri.org to register. Registration includes two days of course instruction, training material provided to download, facility tour, lunch, and process demonstrations. Space is limited to 30 participants.

### Course Topics

- Atomization: spray drying, spray chilling, spray congealing
- 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:**

**James Oxley**
(210) 522-2913
*james.oxley@swri.org*

| Day I | | | |
|---|---|---|---|
| **Speaker:** | **Topic:** | **Start** | **End** |
| | ***REGISTRATION*** | 8:00 AM | 8:30 AM |
| | Greeting/Introduction | 8:30 AM | 9:00 AM |
| | Overview of Microencapsulation | 9:00 AM | 9:45 AM |
| | Atomization: Spray Drying, Chilling, and Prilling | 9:45 AM | 10:30 AM |
| MORNING BREAK | *****BREAK***** | 10:30 AM | 10:50 AM |
| | Spinning Disc | 10:50 AM | 11:20 AM |
| | Fluid Bed Coating | 11:20 AM | 12:00 PM |
| LUNCH | *****LUNCH***** | 12:00 PM | 12:45 PM |
| | Coextrusion | 12:45 PM | 1:30 PM |
| | Solvent Evaporation/Extraction | 1:30 PM | 2:15 PM |
| AFTERNOON BREAK | *****BREAK***** | 2:15 PM | 2:30 PM |
| | Coacervation | 2:30 PM | 3:10 PM |
| | Interfacial Polymerization | 3:10 PM | 3:50 PM |
| AFTERNOON BREAK | *****BREAK***** | 3:50 PM | 4:05 PM |
| | In Situ Polymerization | 4:05 PM | 4:25 PM |
| | Nanoencapsulation | 4:25 PM | 4:55 PM |
| | Applications | 4:55 PM | 5:25 PM |
| Reception | *****BREAK***** | 5:25 PM | 6:10 PM |
| **Day II** | | | |
| **Speaker:** | **Topic:** | **Start** | **End** |
| | Greetings/Review | 8:30 AM | 9:00 AM |
| | Core Materials | 9:00 AM | 9:20 AM |
| | Shell Materials | 9:20 AM | 9:55 AM |
| MORNING BREAK | *****BREAK***** | 9:55 AM | 10:15 AM |
| | Process demonstrations & Tour - Small Group Rotations | 10:15 AM | 10:35 AM |
| | Spray drying | 10:35 AM | 10:55 AM |
| | Fluid bed coating | 10:55 AM | 11:15 AM |
| | Vibrating nozzle coextrusion | 11:15 AM | 11:35 AM |
| | Complex coacervation | 11:35 AM | 11:55 AM |
| LUNCH | *****LUNCH***** | 11:55 AM | 12:55 PM |
| | Characterization | 12:55 PM | 1:25 PM |
| | Bioencapsulation | 1:25 PM | 2:10 PM |
| AFTERNOON BREAK | *****BREAK***** | 2:10 PM | 2:25 PM |
| | Scale-up | 2:25 PM | 3:15 PM |
| | Economics | 3:15 PM | 3:50 PM |
| AFTERNOON BREAK | *****BREAK***** | 3:50 PM | 4:05 PM |
| | Stability & Shelf-Life | 4:05 PM | 4:25 PM |
| | Novel Encapsulation Processes | 4:25 PM | 4:55 PM |
| | Additional Resources & Conclusion | 4:55 PM | 5:15 PM |
| | Wrap-up | 5:15 PM | 5:30 PM |