

Organized by the

Separation Science Program

Food Protein Research & Development Center

The Texas A&M University System

College Station, Texas 77843-2476 U.S.A.

In Cooperation with

National Center for Therapeutics Manufacturing

Texas A&M Engineering Experiment Station

The Texas A&M University System

College Station, Texas 77843-4482 U.S.A.

Fermentation and Separation for the Food & Drug Industries: Principle, Process, Recovery, and Product

February 8-12, 2015

REGISTRATION

Registration fee for the short course and pilot plant demonstration is \$1,495 if paid in full by January 18, 2015. After this date, registration fee is \$1,595. The registration fee for the short course includes daily lunch, graduation lunch, refreshments at breaks, local transportation, a short course e-manual, and certificate of completion. A black & white paper manual/binder is available for an additional \$150 fee.

There is a 10% discount if three or more individuals from the same organization register for the short course. Academic discounts may be applicable if space is available.

Make checks payable to **TEES (Texas A&M Engineering Experiment Station)** and mail to **TEES Fiscal Office, 3124 TAMU, College Station, TX 77843-3124**. Or you may pay the fee by credit card (American Express, Visa, or Master Card) online.

Registration fees are not refundable, but substitute personnel may be sent by the same firm.

Mail the registration form and a copy of your check to **Marcy Bundick**, Short Course Coordinator (See address on registration application form). Space is limited; therefore, applications will be accepted on a first-come, first-serve basis.

For more information contact:

Marcy Bundick
 Short Course Coordinator
 Food Protein R&D Center
 Phone: (979) 845-2741
 Fax: (979) 845-2744
 Email: shortcourse@tamu.edu

Dr. Yongjae Lee
 Head, Separation Sciences Program
 Food Protein R&D Center
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OBJECTIVES OF SHORT COURSE

- Provide practical training in the field of cell culture, bioreactor operation, bioprocess paradigm, and separation technology
- Increase understanding of the industrial food & drug fermentation biotechnology through simulation, sterilization technologies and clinical implications as well as related research being done across different countries, universities, and industries
- Review new technologies in the fermentation and separation biotechnology industries and scale-up bioreactor
- Establish network of academia and industry experts

LOCATION AND FACILITIES

All lectures will be held at TIPS (Texas A&M Institute for Preclinical Studies) and NCTM (National Center for Therapeutics Manufacturing) on the Texas A&M University Campus.

ACCOMMODATIONS AND TRANSPORTATION

Reservations for lodging should be made directly by the attendee. A block of rooms has been reserved at the College Station Hilton and Conference Center for the short course participants at the special rate of \$115/night plus tax for single or double occupancy. Ask for the rate specifically and mention the **group code “FERMI5”**. Hotel reservations must be received before **January 18, 2015** in order to get the special rates. You can make your reservations by telephone, fax, or internet. Check in time is 4:00 pm. Shuttle service is provided from Easterwood Airport to and from the Hilton Hotel. Shuttle service can be arranged by calling the Hilton (979) 693-7500.

Hilton College Station & Conference Center

801 University Dr. East, College Station, Texas 77840, USA
 Tel: 979-693-7500
 Fax: 979-260-1931
<http://hiltoncs.com>

Instructors:

Ted Appel, Regional Manager, GEA Mechanical Equipment US, INC

Daniel H. Bar, Vice President/General Manager, Amerida, Division of Eurodia Industrie

Elizabeth Brunyak, Technical Sales Specialist, Pall Life Sciences

Donald F. Day, Professor, Audubon Sugar Institute, Louisiana State University

Arum Han, Associate Professor, Director of NanoBio Systems Lab, Texas A&M University

Joan R. Hernandez, Technical Lab Coordinator, NCTM, Texas A&M University

Loe Hubbard, Global Applications Manager, Pall Life Sciences

Osama O. Ibrahim, Consultant Biotechnology, Bio Innovation

Matthew Johnson, Technical Laboratory Coordinator, NCTM, Texas A&M University

Jiyoung Lee, Marketing Manager, BioProcess, GE Healthcare

Yongjae Lee, Head of Separation Sciences Program, Food Protein R&D Center, Texas A&M University

Ken Mabery, Manager - Western US, Pall Life Sciences

Kevin Marino, Manager - Eastern US, Pall Life Sciences

Dharti Pancholi, Senior Process Engineer, P&F Engineering NNE Pharmaplan

Michael V. Pishko, Professor, Biomedical Engineering, Texas A&M University; Director of the NCTM (National Center for Therapeutics Manufacturing)

J. Stefan Rokem, Associate Professor, Department of Microbiology and Molecular Genetics, Hebrew University—Hadassah Medical School

Byron Sample, Field Application Scientist, BioProcess, GE Healthcare

Christiane Waldron, Senior Engineering Manager, Kaneka North America LLC

Sunday, February 8, 2015

5:00 PM Registration, CS Hilton Hotel

5:30 PM Welcome and Announcements –Yongjae Lee

6:00 PM Social / Mixer / Dinner (optional)

Monday, February 9, 2015

8:00 AM Bus leaves hotel for TIPS, Texas A&M University Campus

8:30 AM Introduction – Welcome and Announcements– YongJae Lee

9:00 AM “The Growth and Metabolism of Microorganisms Used for Production of Metabolites” - J. Stefan Rokem

9:50 AM “Microbial Physiology: Growth of Cells, Population and Nutrition” - Osama Ibrahim

10:30 AM Refreshments and Group Photo

10:50 AM “Organic Acids by Fermentation” - J. Stefan Rokem

11:20 AM “Preventing Contamination in Large-Scale Bio-Fermentation Processes” - Christiane Waldron

12:00 PM Lunch

1:30 PM “Medium Formulation for Industrial Fermentations” - J. Stefan Rokem

2:20 PM “Microbial Fermentation: Enzymology, Metabolic Pathways and Fermentation Aspects” - Osama Ibrahim

3:00 PM Refreshments

3:20 PM “Immobilized Cell Reactor: Advantages and Disadvantages – Donald F. Day

4:20 PM Round-Table—Yongjae Lee

Tuesday, February 10, 2015

8:00 AM Bus leaves hotel for TIPS, Texas A&M University Campus

8:30 AM “Considerations for Bioreactor Process Development in Single Use Systems”- Loe Hubbard

9:20 AM “Protein Quantification & Characterization—BLI Applications in Bioprocessing”- Elizabeth Brunyak

10:00 AM Refreshments



10:20 AM “Introduction to Tangential Flow Filtration” - Kevin Marino

11:10 AM “Fundamentals of Concentration & Diafiltration” - Kevin Marino

12:00 PM Lunch

1:30 PM “Introduction to Depth Filtration—Focus on Cell Clarification” - Ken Mabery

2:30 PM Refreshments

2:50 PM Demonstrations: Process Development for Bioprocessing—From Upstream to Downstream—Loe Hubbard, Elizabeth Brunyak, Kevin Marino, Ken Mabery

4:30 PM Round-Table—Yongjae Lee

Wednesday, February 11, 2015

8:00 AM Bus leaves hotel for TIPS, Texas A&M University Campus

8:30 AM “Upstream Industry for Microbial Fermentation”— Jiyoung Lee

9:20 AM “Bioreactor Design Based on Applications for Microbial Fermentation”— Jiyoung Lee

10:00 AM Refreshments

10:20 AM Demonstrations: WAVE Bioreactor—Byron Sample & Jiyoung Lee

12:00 PM Lunch

1:30 PM Demonstrations: XDR-10 Bioreactor—Byron Sample & Jiyoung Lee

2:30 PM Refreshments

2:50 PM Demonstrations: Normal Flow Filtration for Harvest—Byron Sample & Jiyoung Lee

3:40 AM “Single-Use (Disposable) Technologies in Biomanufacturing”— Jiyoung Lee

4:30 PM Round-Table—Yongjae Lee

Thursday, February 12, 2015

8:00 AM Bus leaves hotel for TIPS, Texas A&M University Campus

8:30 AM “Cell Disruption and Nanoparticle Emulsions Through the Use of a High Pressure Homogenizer” - Ted Appel



Register on the Web: <http://foodprotein.tamu.edu/separations>

9:00 AM “Points to Consider During Scale-Up and Scale-Down for Industrial Fermentation Technologies” - Dharti Pancholi

10:00 AM Refreshments

10:20 AM “Effective Processes for Downstream Purification” - Daniel H. Bar

11:00 AM “Microfluidic Bioreactor Array for High-Throughput Screening” - Arum Han

11:40 PM Round-Table—Yongjae Lee

12:00 PM Graduation Lunch @ Texas A&M Rudder Tower - University Club

1:30 PM Bus leaves for NCTM

1:40 PM “Single-Use Technologies for Aseptic Fermentation” - Michael V. Pishko

2:40 PM Refreshments

3:00 PM “Design of Experiments for Fermentation Operations” - Michael V. Pishko

3:30 PM Demonstrations: Aseptic Fermentation for the Production of Biologics—Matthew Johnson & Joan R. Hernandez

4:30 PM Wrap up and bus leaves for the hotel

You Will Receive the Following:

- Group Photo
- Course e-Manual
- List of Speakers, and Attendees
- Certificates of Completion

Upcoming Short Courses

For details, visit <http://foodprotein.tamu.edu/separations>

25th Membrane & Other Separation Technologies
May 3-7, 2015

6th Annual Functional Beverages
August 23-25, 2015

11th Annual WATER Technologies
October 4-6, 2015

2nd Short Course on Fermentation and Separation for the Food & Drug Industries

February 8-12, 2015
Texas A&M University
(Please Type or Print Neatly)

Name	
Job Title	
Company	
Mailing Address	
Phone	Fax
Email	
Name for Nametag	
Contact in case of emergency	
Special diet requirements	
Method of Payment (mark one)	
<input type="checkbox"/> Check Payable to TEES	
<input type="checkbox"/> If paying with credit card please include type of card	
<input type="checkbox"/> Visa	
<input type="checkbox"/> American Express	
<input type="checkbox"/> Master Card	
Credit Card #	Exp. date
Name on Credit Card	Total Amount
Verification Code on back of Card	
Billing Address	
Signature	

Texas A&M University
Food Protein R&D
Center

Return this application to:

Marcy Bundick
Short Course Coordinator

The Texas A&M University– Riverside Campus
2476 TAMU
College Station, TX 77843

Phone: 979-845-2741
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