



PERDC

PROCESS ENGINEERING RESEARCH
& DEVELOPMENT CENTER
TEXAS A&M ENGINEERING EXPERIMENT STATION

Formerly "Food Protein Research & Development Center"

21st Annual Practical Short Course

Organized by the
Extrusion Technologies Program
Process Engineering Research & Development Center
The Texas A&M Engineering Experiment Station
College Station, Texas 77843-2476 U.S.A.

In cooperation with
AACC International



Food Extrusion: Cereals, Pulses, Proteins, & Other Ingredients

September 29 - October 4, 2019

SCHEDULE

Sunday, September 29, 2019

- 6:00 PM Registration, hotel
- 6:30 PM Welcome, Introduction, & Announcements - Mian N. Riaz
- 7:00 PM Dinner, hotel (optional)

Monday, September 30, 2019

Food Ingredients

- 7:40 AM Bus leaves hotel to Rudder Tower, Texas A&M University
- 8:00 AM "Introduction and Principles of Extrusion" - Mian N. Riaz
- 9:15 AM "Characteristics of Cereal Grains" - Joseph Awika
- 10:30 AM Break
- 10:45 AM "Characteristics of Legumes and Their Incorporation in Food Products" - Janice Rueda
- 11:30 AM **Group Photo** and Lunch
- 1:00 PM "Dry Milling of Cereal Grain Products" - Helbert Almeida
- 1:45 PM "Production of Ingredients using Extrusion Technologies" - Dave Albin
- 2:45 PM Break
- 3:00 PM "Fine Grinding for Food Ingredients" - Phil Erickson
- 3:30 PM "Ancient Grain to Snack Foods" - Manjot Singh
- 4:15 PM Bus leaves for PERDC for Multiple Demonstrations:

- **Making Low-Fat Soy Flour from Extrusion and Expelling Processes**
- **Cracking, Dehulling, and Grinding Soybeans**
- **Making Low-Fat Soy Flour using Pulverizer**
- **Making TVP and Other Products using Dry Extruder**

Tuesday, October 1, 2019

Textured Protein Applications

- 7:40 AM Bus leaves hotel for Rudder Tower, Texas A&M University
- 8:00 AM "Selecting Soybeans and Grains for Food Products" - Ken Dallmier
- 8:45 AM "Texturized Vegetable Protein in Meat and Vegetarian Applications" & "Functional Soy Protein: Meat Product Applications" - Ross Wyatt
- 9:15 AM Break
- 9:30 AM "Quality Control and Testing of the Finished Textured Soy Protein" - Janice Rueda
- 10:00 AM "Raw Material Selection for Extrusion Processing of Texturized Vegetable Protein" - Brian Plattner
- 11:15 AM "The Use and Applications of Textured Vegetable Proteins" - Topher Dohl
- 12:00 PM Lunch
- 1:15 PM "Extrusion Processing of TVP" - Brian Plattner
- 1:45 PM "Texturization of Pulses, Legumes & High Moisture Meat Analogs (HMMA)" - Mian Riaz
- 2:45 PM Bus leaves for PERDC for Multiple Demonstrations:
- **Texturized Pea Protein on Twin Screw Extruder and its Incorporation into a Product**
- **How to Incorporate Texturized Soy Protein in Foods**
- **How to Incorporate Texturized Wheat Gluten in Foods**
- **How to Incorporate Soy Isolates in Meat Products**

Wednesday, October 2, 2019

Extrusion Processing

- 7:40 AM Bus leaves hotel for Rudder Tower, Texas A&M University
- 8:00 AM "Preconditioning of Food Products" - Natasa Taseski
- 8:45 AM "Raw Material Selection and Additive Effects on Extruded Products" - Bradley S. Strahm
- 10:15 AM Break
- 10:30 AM "Fundamentals of Drying and Toasting" - Keith Erdley
- 11:30 AM Lunch
- 12:45 PM "Flavoring of Food Products" - Amy Yap
- 1:45 PM "Extrusion Hardware and Die Design for the Production of Food Products" - Topher Dohl
- 3:15 PM Break
- 3:30 PM "Dryer Design in Food Applications" - Keith Erdley
- 4:30 PM Bus leaves for PERDC for Multiple Demonstrations:
- **Whole Grain Based Expanded Snack on Single Screw Extruder**
- **Sorghum-based Whole Grain Cereal on Twin Screw Extruder**
- **Masking Beany Flavor**

Thursday, October 3, 2019

Cereal-Grain Applications & Downstream Handling

- 7:40 AM Bus leaves hotel for Rudder Tower, Texas A&M University
- 8:00 AM "Thermal and Mechanical Processing of Cereal Products" - Brian Plattner
- 9:00 AM "Extrusion and Drying Applications of Cereal Grain-Based Food Products" - Natasa Taseski
- 9:45 AM Break
- 10:00 AM "High Protein, Whole Grain, & Specialty Snacks" - Bradley S. Strahm
- 10:45 AM "Development of Product Functional Properties" - Brian Plattner
- 11:45 AM **Graduation Lunch**
- 1:15 PM "Coating and Flavoring of Cereal Products" - Doug Hanify
- 2:00 PM "Extruder Troubleshooting" - Topher Dohl
- 2:45 PM Break
- 3:00 PM "Pulses and Legumes in Snack Food Production" - Mehmet Caglar Tulbek
- 3:45 PM Bus leaves for PERDC for Multiple Demonstrations:
- **Chunk-Style TSP/TVP on Single Screw Extruder**
- **High Moisture Meat Analog with Twin Screw Extruder**
- **Coating of Cereal and Snack Products**
- **Size Reduction of Texturized Vegetable Protein**

Friday, October 4, 2019

- 7:40 AM Bus leaves hotel for Rudder Tower, Texas A&M University
- 8:00 AM "Frying Oils: An Overview of Quality, Fundamentals, and Applications" - Mohammad S. Alam
- 9:00 AM "How to Develop New Food Products" - Chris Mack
- 9:45 AM Break
- 10:00 AM "Industrial Frying System and Criteria for Selecting Industrial Fryers" - Caleb Reyes
- 11:00 AM "Pilot Plant Processing Equipment: Inspection, Preventative Maintenance, and Repair" - Stephen Prince
- 11:45 AM Wrap-Up - Mian N. Riaz and Chris Mack

You can register online at <https://perdc.tamu.edu/extrusion/>

LOCATION AND FACILITIES

All lectures will be held at Rudder Tower, Texas A&M University Campus. College Station temperatures in September are from 69-91°F (21-33°C). Participants will be taken by bus to the Process Engineering R&D Center (Texas A&M RELLIS Campus) for afternoon demonstrations. Manuals and lectures will be in English. Translation equipment is available by prior arrangement for organized groups willing to provide their own translators.

ACCOMMODATIONS

Reservations for lodging should be made directly by attendee. A block of rooms has been reserved at the Embassy Suites for short course participants at the special rate of **\$125/night** plus tax for single or double occupancy. This rate includes a free full breakfast as well as free shuttle to and from the College Station airport. Ask for the rate specifically and mention the **Group Code “FEX.” Hotel reservations must be received before August 27, 2019** in order to get special rate; the special rate DOES NOT APPLY before September 28 or after October 5. You can make your reservation by telephone, fax, or internet.

Embassy Suites

201 University Drive East
College Station, Texas 77840, USA
Tel: 979.260.6000; Fax: 979.260.6001

<http://www.embassysuitescollegestation.com>

When faxing or emailing hotel reservations, please include a credit card number to confirm your reservation, and also include your departure and arrival dates.

TRANSPORTATION

Easterwood Airport at College Station is easily reached by about eight flights daily. From Dallas/Ft. Worth International Airport connect via American Airlines. From Houston Intercontinental Airport connect via United Airlines. **The airport code for Easterwood Airport is CLL.** To get to the hotel in College Station, participants can call the **Embassy Suites (979.260.6000)** upon arrival at Easterwood Airport for courtesy van service or participants can schedule a pickup with GroundShuttle.com (855.303.4415) from George Bush Intercontinental airport (IAH) or Houston Hobby airport (HOB) or Austin Bergstrom airport (AUS).

REGISTRATION

The registration fee for the short course and pilot plant demonstrations includes daily lunch, refreshments at breaks, local transportation, a short course eBook manual, and certificates of completion.

Registration fee is \$1650 if paid in full by August 27, 2019. After this date, registration fee is \$1750. Continuing Education Units (CEUs) are available. An **OPTIONAL** black & white paper manual is available for an additional \$200 fee. There is a 10% registration discount if three or more individuals from the same organization register for the short course. Additionally, there is a 10% registration discount if you are a member **AACC International**. Academic discounts may be applicable if space is available.

Registration fees are not refundable, but substitute personnel may be sent by the same firm. Space is limited; therefore, applications will be accepted on a first-come, first-served basis.

You can register online at
<https://perdc.tamu.edu/extrusion/>

You can pay online by credit card (American Express, Visa, or Master Card). If paying by check, make payable to **TEES (Texas A&M Engineering Experiment Station) and mail to TEES Fiscal Office c/o TEES EDGE Program, 7607 Eastmark Dr. Suite 250D, College Station, TX 77840.**

For registration inquiries, contact:

Cyndi Casanova

Short Course Coordinator
Process Engineering R&D Center
2476 TAMU
College Station, Texas 77843-2476 U.S.A.
Tel: 979.845.2741
Email: shortcourse@tamu.edu

OBJECTIVES OF SHORT COURSE

- Examine the processing of different food ingredients.
- Identify current practices for processing TVP.
- Explore extrusion processing and its hardware.
- Learn and understand whole grain cereals and legumes processing.
- Demonstrate different food related equipment in operation.

SHORT COURSE CONDUCT

All short course sessions will be informal. Insurance policies do not allow non-university personnel, other than original manufacturers, to operate equipment. Questions are encouraged during the lectures, breaks, and social periods. Laptops are allowed in the classroom to follow the presentations in the short course eBook manual. If you require WiFi access during the conference, please inform the Short Course Coordinator when you register (the hotel has its own WiFi access and is separate from the conference). Rights to cancel this course with refund, to deny service, to substitute speakers, and to change schedules, as necessary to expedite the course, are reserved. Texas A&M University System policy does not allow inclusion of alcoholic beverages in registration fees.

INSTRUCTORS

- Dr. Mohammad S. Alam**, Head, Fats & Oils Program, Process Engineering R&D Center, Texas A&M University
Dr. Dave Albin, Vice President, Nutrition & Extrusion Technologies, Insta-Pro International
Dr. Helbert Almeida, Milling Innovation - BNA, Bunge - Creative Solutions Center
Dr. Joseph Awika, Associate Professor, Cereal Quality Laboratory, Soil & Crop Sciences Dept., Texas A&M University
Dr. Ken Dallmier, President & Chief Operating Officer, Clarkson Grain Company, Inc.
Tophier Dohl, Technical Center Director, Wenger Manufacturing Co.
Keith Erdley, Technical Manager, Drying Technology, Wenger Manufacturing Company
Phil Erickson, International Application Engineer, Reynolds Engineering & Equipment, Inc.
Connor Girlinghouse, Technical Assistant, Extrusion Technology Program, Process Engineering R&D Center, Texas A&M University
Doug E. Hanify, PE, Manager, Process & Product Innovation, Spray Dynamics, a Heat and Control company
Chris Mack, Senior Research Associate, Extrusion Technology Program, Process Engineering R&D Center, Texas A&M University
Brian Plattner, PE, Process Technology Director, Food and Industrial Products, Wenger Manufacturing Company
Stephen D. Prince, Research Associate, Extrusion Technology Program, Process Engineering R&D Center, Texas A&M University
Caleb Reyes, Account Manager, Snack Food Systems, Heat and Control Inc.
Dr. Mian N. Riaz, Head, Extrusion Technology Program, Process Engineering R&D Center, Texas A&M University
Dr. Janice M.W. Rueda, Vice President, Nutrition Science Business Development, Archer Daniels Midland Company
Manjot Singh, Product Development Technologist, Bunge Creative Solutions Center
Dr. Bradley S. Strahm, Consultant, The XIM Group, LLC
Natasa Taseski, Process Technologist, Wenger Manufacturing Co.
Dr. Mehmet Tulbek, A.Ag., Director of Research & Development, AGT Foods R&D Centre
Ross Wyatt, Meat Applications Scientist, Archer Daniels Midland Co.
Amy Yap, Associate Flavorist, Givaudan Flavors Corp.

UPCOMING PRACTICAL SHORT COURSES

For details, visit <https://perdc.tamu.edu/short-courses/>

Extruded Pet Foods and Treats, July 8-11, 2019

Aquaculture Feed Extrusion, Nutrition, & Feed Management, August 25-30, 2019

Feeds and Pet Food Extrusion, February 2-7, 2020

Snack Food Processing: Extruded Snacks & Tortilla Chips, March 15-20, 2020

For additional technical information, contact:

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