



PERDC

**PROCESS ENGINEERING RESEARCH
& DEVELOPMENT CENTER**

TEXAS A&M ENGINEERING EXPERIMENT STATION

Formerly "Food Protein Research & Development Center"

23rd Annual Practical Short Course

Organized by

Extrusion Technologies Program
Process Engineering Research and Development Center

and

Cereal Quality Laboratory
Texas A&M AgriLife Research

in cooperation with

SNAC International

and



Snack Foods Processing: Extruded Snacks and Tortilla Chips

March 24-29, 2019

SCHEDULE

Sunday, March 24, 2019

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

Monday, March 25, 2019

- 7:40 AM Bus leaves hotel to Rudder Tower, Texas A&M University
- 8:00 AM "Extruders in Snack Foods Preparation" - Mian N. Riaz
- 9:15 AM "The Status and Issues of the Snack Food Industry"
- David Walsh
- 10:00 AM Break
- 10:15 AM "Grinding of Masa for Tortilla Chips & Corn Chips"
- Frank Durazo
- 10:45 AM "Pulses and Legumes in Snack Food Production"
- Mehmet Caglar Tulbek
- 11:30 AM **Group Photo**
- 11:45 AM Lunch
- 1:00 PM "Commercial Equipment for Making Dry Extruded Baked
and Fried Snacks" - Steve Mires
- 1:45 PM "Thermal Processing Snack Products" - Tom Barber
- 2:30 PM Break
- 2:45 PM "An Overview of Dry Masa and Corn Tortilla Chips
Manufacturing" - Helbert Almeida
- 4:00 PM Bus leaves for PERDC for Multiple Demonstrations:
 - **Extrusion of Baked Snacks**
 - **Extrusion of Fried Snacks**
 - **Electrostatic Seasoning**
 - **Masa Milling**

Tuesday, March 26, 2019

- 7:40 AM Bus leaves hotel for Rudder Tower, Texas A&M University
- 8:00 AM "Dry Milling and Corn Products for Snack Foods"
- Brian Anderson
- 8:45 AM "Corn Quality for Alkaline Cooking" - Audrey L. Girard
- 9:45 AM Break
- 10:00 AM "Ancient Grain to Snack Foods" - Brian Anderson &
Helbert Almeida
- 10:45 AM "Production of Masa using Extrusion Technology"
- Brian Plattner
- 11:15 AM "NIR Analyzer on Ingredients and Snack Food"
- Josh Hudson
- 11:45 AM Lunch
- 1:00 PM "Nutritious Snacks Incorporating Bean and Pea
Ingredients" - Janice M.W. Rueda
- 1:30 PM "Food Safety, Hygiene and Microbiology for Snack Food
Industries" - Tom Barber
- 2:00 PM Bus leaves for Heep Hall for Multiple Demonstrations:

Corn Quality & Tortilla Chip Processing Demonstrations

*Participants will be divided into 2 groups and rotated between
the following demonstrations (at Heep Hall):*

Nixtamalization and Preparation of Corn Tortilla Chips

- a) Fresh Masa
- b) Dry Masa
- c) Tortilla and tortilla chip processing
- d) Quality evaluation of masa tortilla and tortilla chips

Corn Quality Evaluation Procedures and Equipment

- a) Corn Grades and Standards
- b) Corn Quality testing
- c) Factors affecting corn meal quality and variation
- d) Dry masa quality
- e) Other snack food ingredients: rice, sorghum, etc.
- f) NIR analyzer on ingredients and snack food

Wednesday, March 27, 2019

- 7:40 AM Bus leaves hotel for Rudder Tower, Texas A&M University
- 8:00 AM "Raw Material Specifications for Expanded Snacks"
- Brad Strahm
- 9:15 AM "Single and Twin Screw Extruders for Snack Food
Production" - Topher Dohl
- 10:30 AM Break
- 10:45 AM "Extrusion Applications for Food Products"
- Brian Plattner
- 11:45 AM Lunch
- 1:00 PM "Principles of Die Design" - Topher Dohl
- 1:45 PM "Popcorn and Its Requirements" - John Concannon
- 2:45 PM Break
- 3:00 PM "Extrusion Processing Technologies" - Brian Plattner
- 4:00 PM Bus leaves for PERDC for Multiple Demonstrations:
 - **Snack Production by Single Screw Extruder**
 - **Pop Corn Production**

Thursday, March 28, 2019

- 7:40 AM Bus leaves hotel for Rudder Tower, Texas A&M University
- 8:00 AM "Starch and Protein Functionality During Processing"
- Audrey L. Girard
- 9:00 AM "High Protein, Whole Grain, & Specialty Snack Extrusion"
- Brad Strahm
- 10:00 AM Break
- 10:15 AM "Uses of Dehydrated Potato for Snack Food Products"
- Pete Savage
- 11:00 AM "Flavors & Seasonings for Snack Foods" - Cinde Merkt
- 12:00 PM **Graduation Lunch**
- 1:15 PM "Coating and Flavoring of Extruded Snacks and Tortilla
Chips" - Douglas Hanify
- 2:00 PM "Troubleshooting of Expanded Snacks" - Brian Plattner
- 3:00 PM Break
- 3:15 PM "Conveying, Scaling, and Packaging for High Speed VFFS
Snack Foods" - Toby Steward
- 4:15 PM Bus leaves for PERDC for Multiple Demonstrations:
 - **Multi Grain Chips by Twin Screw Extruder**
 - **Coating of Snacks**

Friday, March 29, 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 "High Oleic Oils in Frying & Snack Food Production"
- Frank Flider
- 9:45 AM Break
- 10:00 AM "Industrial Frying System and Criteria for Selecting
Industrial Fryers" - Caleb Reyes
- 11:00 AM "Wrap-Up" - Mian N. Riaz and Chris Mack

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

OBJECTIVES OF SHORT COURSE

- Train production personnel in principles and characteristics of extruders and support systems for effective selection and operation.
- Review current practices for preparation of fried corn chips, corn tortilla chips, half products, and other extruded snacks.
- Demonstrate equipment in operation and familiarize attendees with practical aspects of snack foods processing technology.

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 “SF9.” Hotel reservations must be received before February 21, 2019** in order to get special rate; the special rate DOES NOT APPLY before March 23 or after March 30. 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 Sunday evening mixer/dinner, 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 February 21, 2019. After this date, registration fee is \$1750.** Continuing Education Units (CEUs) are available upon request. An **OPTIONAL** black&white paper manual/binder is available for an additional \$200 fee. There is a 10% registration discount if you are a member of the SNAC International, or if three or more individuals from the same organization register for the short course. Academic discounts may be applicable if space is available. (Only one discount per individual may apply). **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.** Mail the registration form and a photocopy of your check to Cyndi Casanova, Short Course Coordinator (see address below).

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

LOCATION AND FACILITIES

All lectures will be held at Rudder Tower, Texas A&M University Campus. College Station temperatures in March are from 51-72°F (11-22°C). Participants will be taken by bus to the Process Engineering R&D Center (Texas A&M RELIS 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.

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. Helbert Almeida, Milling Innovation - BNA, Bunge – Creative Solutions Center

Dr. Brian J. Anderson, Vice President, BNA Innovation & RD Marketing, Bunge North America

Tom Barber, Vice President - Process Engineering, Buhler Aeroglide

John Concannon, Vice President, C. Cretors and Company

Topher Dohl, Technical Center Director, Wenger Manufacturing

Frank Durazo, Worldwide Sales & Service, Maddox Metal Works

Frank Flider, Edible Oils Consultant for QUALISOY and USB

Dr. Audrey L. Girard, Associate Research Scientist, Cereal Quality Laboratory, Soil & Crop Sciences Dept., Texas A&M University

Doug E. Hanify, PE, Manager, Process & Product Innovation, Spray Dynamics Ltd.

Dr. Josh Hudson, Southwest Regional Manager, Perten Instruments

Chris Mack, Senior Research Associate, Extrusion Technology

Program, Process Engineering R&D Center, Texas A&M University

Steve McAfee, Snack Food Division Manager, Maddox Metal Works

Cinde Merkt, Senior Seasoning Creator, Givaudan Flavors

Steve Mires, Sales and Service, Maddox Metal Works, Inc.

Brian Plattner, PE, Process Technology Director, Food and Industrial Products, Wenger Manufacturing

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, Director of Research & Business Development, Archer Daniels Midland Company

Pete Savage, Sr. Project Manager, Innovation, Basic American Foods

Toby Steward, PE, Regional Sales Manager, TNA North America

Dr. Bradley S. Strahm, Consultant, The XIM Group, LLC

Dr. Mehmet Tulbek, A.Ag., Director of Research & Development, AGT Foods R&D Centre

David Walsh, Director, Government Affairs, SNAC International

UPCOMING PRACTICAL SHORT COURSES

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

Extruded Pet Foods and Treats, July 08-11, 2019

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

Food Extrusion: Cereals, Protein & Other Ingredients, September 29 - October 04, 2019

For additional technical information, contact:

Dr. Mian N. Riaz

Process Engineering R&D Center

Texas A&M University System

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Email: mnriaz@tamu.edu