

REX®

# Twin Screw Workshop

Reactive Extrusion Twin Screw Workshop, May 13-14, 2026, Charlotte, NC USA

1/5/26

PRELIMINARY AGENDA – subject to change

DAY 1- WED., MAY 13, 2026

CLASSROOM SESSIONS – POLYMERS CENTER

## **Twin screw extruders operating theory, design, tips and test results**

- Co-rotating intermeshing twin screw
- Counter-rotating intermeshing twin screw
- Intermeshing and non-intermeshing
- Single screw extruders
- Process section design: screws and barrels
- PLC/HMI, controls architecture and system integration
- Explosion proof (XP) configurations

## **Reactive Extrusion**

- Monomers+ into the twin screw extruder and polymers out
- Graft reactions
- Polycondensation REX
- Degradation REX
- Biopolymers Science

## **Devolatilization systems**

- Coarse DV, fine DV, stripping agents
- Vacuum pump types and system design
- Maintenance of vacuum pumps/systems

## **Upstream equipment**

- Metering systems
- Solids and liquid feed streams
- Pre-reactors
- Thin film or falling strand evaporators
- Injection systems for stripping

## **Downstream equipment**

- Die design/modeling
- Gear pumps
- Screw pumps
- Filtration equipment
- Pelletizing: strand, die face underwater and air quench
- Direct extrusion: Film/sheet/tube/profile

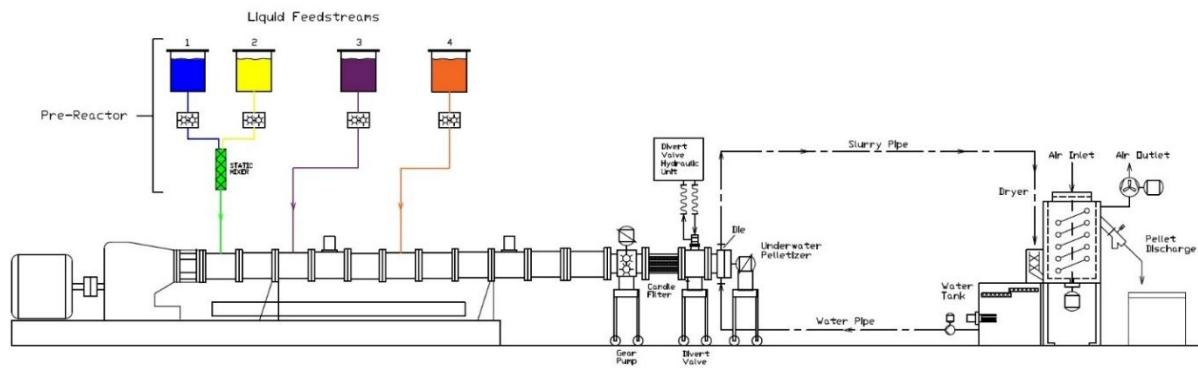
## Other topics

- Bioplastics REX systems
- Commonly encountered REX problems
- R&D techniques
- Scale-up of REX process
- Review of patent literature
- Unique/atypical REX installations
- Maintenance of REX equipment

## LUNCH AND DINNER RECEPTION

## DAY 2- THURS., MAY 14, 2026

An example of case studies that will be presented, for example:



TPU REX twin screw extrusion system

Thermoplastics Urethane REX system: Liquid feed streams are metered into the TSE by precision injection pumps equipped with mass-flow meters to monitor/control the rate and formulation %. The TSE process section (L/D, screw design, vent configuration) and feed rate are designed according to the intended molecular weight and molecular weight distribution of the TPU.

## Partial list of additional Day 2 topics:

- Twin Screw Extrusion REX Demonstrations
- Screw nomenclature
- Twin screw extruder tips and maintenance
- Explosion proof (XP) process environments
- Screw assembly and disassembly procedures
- Devolatilization via twin screw extruders
- Liquid Injection

## INTERACTIVE REX TWIN SCREW EXTRUSION DEMONSTRATION DEMONSTRATION OF ANALYTICAL TESTING EQUIPMENT TOUR OF THE PCE FACILITY

- Panel discussion
- Individual meetings

3PM Adjourn

In addition to Leistritz Extrusion USA staff, there will be presentations from industry experts and academia, including:

*Rob Jerman, Extrusion Technology and Innovations*

*Matt Upton, Mahr Pumps*

*Ali Ayoub, College of Natural Resources, North Carolina State University*

*Others to be added*

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<https://extruders.leistritz.com/en/start>



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