Processing Equipment

2” Davis-Standard Extruder
- Improved melting
- Multiple pressure ports along the barrel
- Grooved feeding capabilities
- Screw cooling kit
- Rod Die with valved adapter
- Higher throughputs
  L/D:30/1

Leistritz Twin Screw Extruder
- Improved mixing
  - 10 zone modular system
- Screw design
- Multiple movable injection/feed ports
- Side stuffer, hopper and power feeder
- Inline liquid injection
  L/D:40/1
- Inline pelletizer

Haake Batch Mixer
- Small scale testing
- Blend formulation

Biaxial Rotational Molding Machine
- Biaxial rotation
- Capabilities of precise rotation
- Electrically heated oven
- Double ⅛” thick channel mold
- Air and water mist cooling

Spray Drying
- Power production form liquid solution/suspension

Laminator
- Multilayer film production
- Doctor Blading
- Hot roller for thin film production

Hot Press
- Mold testing
- Compression molding
- Rapid cooling module

Physical Property Testing

Fourier Transform Inferred Spectroscopy (FTIR)
- Non-destructive chemical analysis
- For powers, films, liquids and pellets

Sintering and Bubble Formation
- Digital frame capture and analysis

Differential Scanning Calorimetry (DSC)
- Solid, power, or liquid testing
- Crystallization, glass transition,
  Heat capacity

Contact Angle
- Sessile drop
- Hydrophobicity

Universal Mechanical Tester (Instron 3366)
- Tensile, flexural, compressive
  5kN and 500 kN load cells
- for variable sensitivity
- Environmental control
  for non-ambient tests

3-D Printing and Thermoforming
- Additive manufacturing
- Small scale testing and formulation

Rheology

Melt Flow Index
- Material comparison and validation

Advanced Rosand RH-720 Capillary Rheometer
- Shear rate range 10-10,000 1/s
- Variable shear rate
- Temperature range up to 300°C
- Beagly and Rabinowitsch correlation applied
  - Twin bore to provide two simultaneous experiments

Advanced Rheometric Expansion System (ARES)
- Controlled strain rheometer
  - Steady, Dynamic
  - Transient Test Modes
- Fluid bath and air convection
- Oven Environmental system
  - Capable to measure melts and solutions
  - Wide Frequency range at high sensitivity