Adhesives and Polymer Materials

Synthesis and Formulation

- Adhesive formulation and synthesis
  - Batch reactor for complex formulations
  - Continuous extrusion for hot melt adhesives
  - Film, pellet and powder processing
  - Tape development with slot die coating
- Polymer compounding and extrusion
  - Reactive extrusion for modification of polymers
  - Grafting of polymers for innovative functionalization and modification
  - Thermoplastic polymer blending
  - Film production with chill roll
- Online reaction control with IR spectroscopy
- Functionalization of nano particles

Characterization

- Adhesive performance tests
- Curing behavior studies
- Thermal and mechanical analysis
- Flow properties determination with rheological methods
- Morphological and surface analysis

Applications

- Adhesive development
  - Formulation and process optimization of hot-melt and pressure sensitive adhesives
  - Latent reactive adhesives based on PU
  - Shrinkage of epoxy adhesives
- Polymer development
  - Grafting of polymers for improved adhesion and compatibility studies
  - Reactive extrusion for efficient processes
  - New polymeric materials through blending
  - Emulsion polymerization
  - Polymer degradation studies
  - 1K and 2K injection molding for specimen preparation