PCL Separation Science Lab

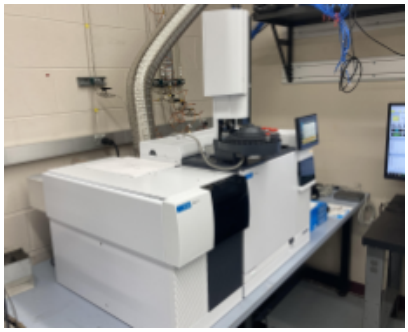
Principle

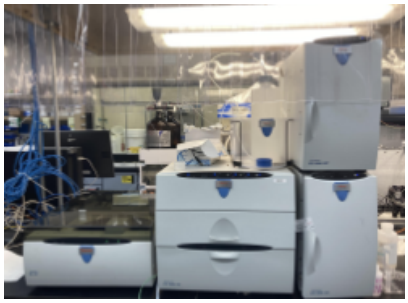
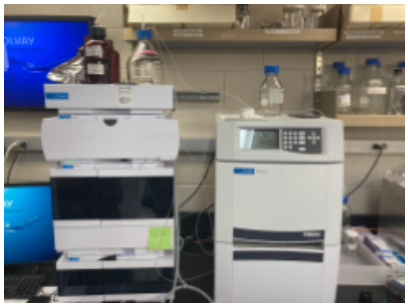
Separation Science

Capabilities

- GC, GC-MS
- HPLC
- IC
- GPC (SEC)
- UPLC-MS TOF with ASAP
- TDGC-MS
- Preparative Chromatography

Equipment

	Equipment Type	Information
	GC-MS/MS	Purity Analysis and Trace Contamination GC • 9 dual channel GCs • Flame Ionization Detector (FID) • Thermal Conductivity Detector (TCD) • Electron Capture detector (ECD) HPLC/UHPLC • 3 LC systems • UV/Vis • Charged Aerosol Detector (CAD) GC-MS/MS (QQQ) • ppb level detection
	Headspace GC/GCMS	**Unknown Volatiles & Decomposition** GC-MS • 3 GC-MS systems • 2 multidetector systems (FID/MSD): simultaneous collection of FID signal and MSD signal for both qualitative and quantitative analysis TD/Py GC-MS • Product deformulation • Evolved Gas Analysis (EGA): 50°C - 1000°C • Identification of unknown base resins • Complimentary to TGA • Thermal Desorption/Pyrolysis (TD/Py): 50°C - 1000°C • Identification of off-gassing at various temperatures Headspace GC/GCMS • Analysis of volatiles in solid and liquid samples: Ambient - 300° • FID and MSD detection for qualitative and quantitative measurements

	Ion Chromatography	**Ion Quantification** IC • Quantification of residual ionic species that are extractable into aqueous medium • Chloride, fluoride, sulfide, acetate, methane sulfonate, etc. Combustion IC (CIC) • Quantification of total ionic species that are generated upon combustion of polymeric material • Typically chloride and fluoride
Multi-Detector GPC HTGPC	HTGPC	**Molecular Weight Distribution** GPC • 6 instruments each dedicated to a polymer type (mostly RI detection, but some UV/Vis) High Temp GPC (HTGPC) • For chemically resistant materials • Capable of temps from ambient up to 220°C
	Multi-Detector GPC	Multi-Detector GPC • Used for non-routine analyses • Dual angel LS, RI, and Viscometry • Can be used for traditional GPC and also for measurement of absolute molecular weight and intrinsic viscosity to gain insight into conformational characteristics and other properties of polymers

Mission	Separation Science mission
Techniques	**Separation Science** •

Team

Separation Science Lab

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