

Technical Solutions, Process Analytics, Materials Characterization

❖ Focus Areas

- ◆ Identify technology breakthroughs
- ◆ Process and product quality solutions (QA/QC)
- ◆ Environmental Footprints (C, H₂O) & Hazards Analysis
- ◆ Technical–analytical services & support for multiple programs

❖ Program Support

- ◆ Develop specifications for contracted services
- ◆ Manage internal and external/contracted teams
- ◆ Technical– Quantitative analytics (DOE– Factor-level, SPC)
- ◆ Develop process capability metrics & achieve data quality objectives

❖ Analytical– Chemistry Skills

- ◆ Process– robust materials sampling
- ◆ Chemometrics, Multivariate Analytics
- ◆ Unknown Materials – Characterization and composition
- ◆ Methods– SOP development & validation (organic, inorganic)

❖ Characterization Techniques

- ◆ Chromatography: IC, HPLC, GC
- ◆ Microscopy– Specimen Analysis
- ◆ Thermodynamics: calorimetry, DSC, TGA
- ◆ Rapid screening- High throughput methods
- ◆ Ultrafiltration techniques for sample evaluation
- ◆ Viscometry & Modulus analysis (physical properties of samples)
- ◆ Electrochemical– amperometry, conductivity, Ion selective Electrodes (ISE)
- ◆ Optical– Spectroscopy: Absorption & Emission techniques (UV-Vis –IR), MS, Raman