CHEMICAL PROCESS TECHNOLOGIES

Crystallization and Solids Processing

Solids processing is a technology that heavily relies on empiricism and thus requires laboratory and pilot plant research, development, and demonstration. MATRIC offers a full range of laboratory services for solids processing, including various types of crystallization, solid/liquid separation such as centrifugation and filtration, and vacuum and convection drying. Services include the capability for conducting laboratory and/or pilot scale precipitation, crystallization, and product recovery studies suitable for scale-up to commercial operation.

MATRIC provides custom services to meet a client’s specific needs, including the ability to synthesize and produce reaction products in lieu of the client supplying representative material. With this range of capability, MATRIC can undertake projects that begin with the reaction steps and proceed through crystallization and onto downstream processing operations.

We can operate on a scale that provides product samples of sufficient size to facilitate product testing and evaluation. These services have been of high value to clients developing new products and processes.

Key personnel have worked on projects including:

- Separation of liquids and solids from mixtures obtained by processing of biomass
- Dewatering of sludges and suspended particulates
- Multiple techniques for filtration and centrifugation
- Crystallization of organic products from water and organic solvents
- Controlled precipitation of fine particles during a process
- Design of crystallizers for batch and continuous operations
- Melt crystallization using a falling film crystallizer
- Crystallization by pH adjustment
- Production of a specific crystal polymorph with desired properties