

Chemical Process Technologies

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Separations

Chemical processes are only successful if the products can be separated and purified to meet the required specifications. MATRIC personnel have an exceptionally deep background in separations technology, covering a wide range of applications. These activities have spanned the range from laboratory studies to large-scale chemical plant applications.



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
- Liquid-liquid extraction processes
- Controlled precipitation of fine particles during a process
- Design of crystallizers for batch and continuous operations
- Distillation technology, including reactive distillation
- Membrane separations and pervaporation
- Adsorption and absorption processes

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 on to 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.