

CAPABILITIES & EQUIPMENT

MSU BI offers collaborative, custom-tailored solutions to accelerate biobased technologies to commercial scale. Our experienced team takes a disciplined, stage-gated approach to remove flawed paths and delivers a vetted, scalable technology. Upon project completion, we provide thorough data packages to aid commercial scale production.



BIOPROCESS DEVELOPMENT, OPTIMIZATION, AND RECOVERY

Our experts have a long history of developing robust, scalable bioprocesses and a wide range of recovery and purification methods.

Throughout our history, we have successfully scaled up scores of processes from lab to pilot-scale.

PROCESS DEVELOPMENT AND FERMENTATION

- Media optimization
- Bacteria/yeast/fungi/heterotrophic algae
- Aerobic/anaerobic/microaerobic
- Batch/fed-batch/continuous fermentations
- Product recovery and purification

PILOT PLANT SCALE-UP

- Fermentation
- Purification & recovery
- Biomass processing
- Customizable control systems
- Extensive data capture capabilities to further scale your technology
- In-line mass spectrometer off-gas analysis
- Pressurized, pilot scale reactors up to 3,000L

PROCESS DEVELOPMENT

MSU BI supports pre-commercial process development, process validation, and routine pilot-scale production.

SCALE-UP BEYOND MSU BI: TECH TRANSFER

With a focus on customer satisfaction and our comprehensive data package, you can count on us to facilitate the transfer of your process directly to your manufacturing team or production partner.



EQUIPMENT OVERVIEW (WORKING VOLUMES)

FERMENTATION

- Customizable fermentation control systems
- Bench-scale 1L, 2L, 5L, 10L fermenters
- Pilot-scale 100L, 150L, and 3,000L fermenters

ANALYTICAL FACILITIES

- HPLC, UPLC, GC, GC/MS
- UV-Vis Spectroscopy
- YSI analysis
- Protein analysis
- Full access to MSU analytical equipment including HPLC/MS, NMR, and LC-MS/MS

PURIFICATION AND RECOVERY CAPABILITIES

- High-Speed Disk Stack Centrifugation
- Solid-Liquid, Liquid-Liquid Separation
- Microfiltration, Ultrafiltration, and Nanofiltration
- Chromatographic Processes
- Ion Exchange
- Cell Disruption
- Vacuum Evaporation
- Crystallization
- Solvent Extraction
- Forced Air Tray Dryers
- Additional space and full utilities set-up for client or rental DSP equipment

Please contact us to discuss your project needs and requirements.

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