

Finding Market-Ready Solutions at the Interface of Biology, Chemistry, and Materials Science

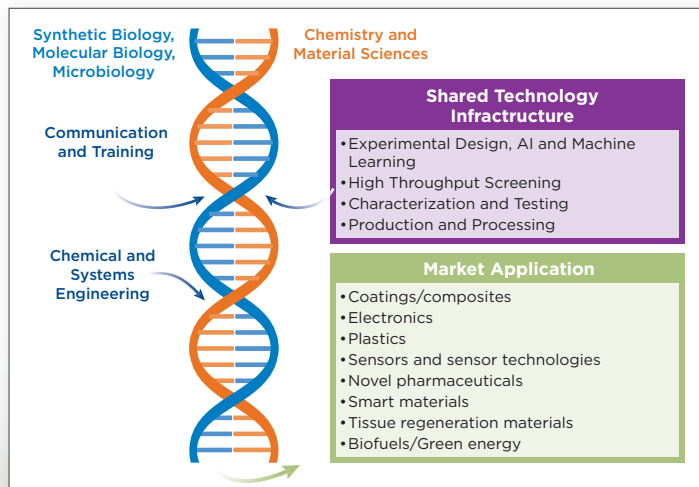
Bringing new, innovative technologies to the marketplace involves a broad range of stakeholders across different product ecosystems. Biological systems hold promise for solving many national challenges in both commercial and military sectors, but many hurdles remain to move these technologies from bench scale to commercial scale. Battelle has built a multidisciplinary team of scientists and engineers to address this issue using an agile biosystems approach. We've developed foundational capabilities in synthetic biology and integrated chemistry and materials science competencies to harness biological systems for broad range of applications, including commodity and specialty chemical production, plastics degradation and upcycling, new coatings and composites, electronics, sensors, and pharmaceuticals. With our approach, we can produce novel molecules and materials with defined structural, biophysical and functional properties targeting important markets across disciplines.

ACCOMPLISHMENTS

This integration process has the ability to produce materials with extended shelf-life, activity and reconfiguration. It enables mold and corrosion prevention, bio-cementation formulation and encapsulation and green munitions and energetics that can be used in many market applications from coatings and composites to microelectronics. It also allows for the recycling of high-value materials for warfighter applications such as metals, lubricants and fuels.

LABORATORY CAPABILITIES AND FACILITIES

Battelle's owned and operated labs and equipment enable this process. Our multidisciplinary technical expertise consists of systems engineers and biochemistry, molecular biology, data and materials scientists.





COMPUTATIONAL LAB

High level software tools for DBTL of biological circuits and interpretation of these designs into experimental tools.

SYNBIO WET LAB

Equipped with a DNA clean room, bioreactors, cloning and molecular biology focused equipment, automated liquid dispensers and more.



ANALYTICAL CHEMISTRY LAB

Full suite of mass spectrometry capabilities including triple quad instrumentation, high resolution LC-TOF -MS/MS and UPLC.

MATERIALS LAB

Full suite of advance material laboratory equipment including Raman spectroscopy, FTIR, and XPS.

Specialty Equipment Operated at Battelle Laboratories

- Applied Biosystems STEPONEPLUS Real-time PCR
- BIO-RAD ProteOn XPR36
- Advia Clinical Chemistry Analyzer
- Advia Hematology Analyzer
- AMAX Destiny Coagulation Analyzer
- ABI PRISM 7900 Thermal Cycler
- Guava EasyCyte and PCA
- MesoScale Discovery Sector PR100
- BIO-RAD Bio-Plex 200
- Cellular Technologies Immunospot Series 3B Analyzer
- GE IN Cell 2000 High Content Imager
- Affymetrix GeneChip System
- Agilent Bioanalyzer
- NanoDrop ND 1000, 8000, and NanoDrop Lite Spectrophotometers
- Electrophoresis equipment
- Environmentally controlled persistence and decontamination chambers
- BioFlow fermentors (5 and 10 L)

Every day, the people of Battelle apply science and technology to solving what matters most. At major technology centers and national laboratories around the world, Battelle conducts research and development, designs and manufactures products, and delivers critical services for government and commercial customers. Headquartered in Columbus, Ohio since its founding in 1929, Battelle serves the national security, health and life sciences, and energy and environmental industries. For more information, visit www.battelle.org.

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