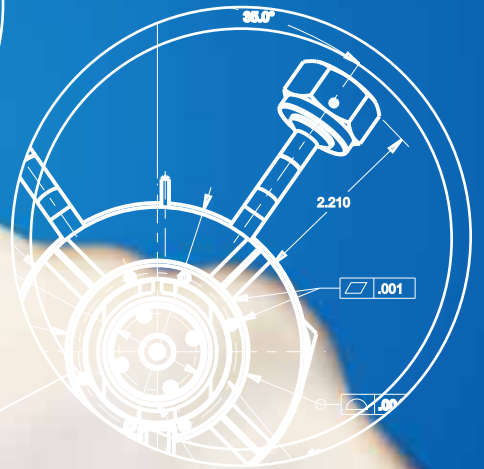
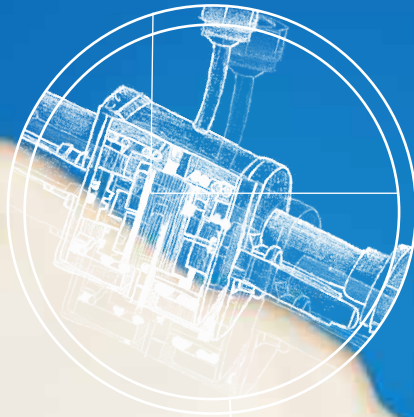




# Lynntech

*science | evolved*





## Our Focus

**“Lynntech solves scientific challenges, from concept through prototype, by integrating creative talent, business expertise, and purpose-built facilities.”**

### Energy and Power

Lynntech’s EP Unit develops high performance fuel cells, electrolyzers, hybrid power systems, and batteries for demanding applications.

### Cyber-Physical Systems

Lynntech’s CPS Unit creates advanced sensing, detection, and imaging systems through data fusion and processing for real-time assessment and response.

### Materials Science

Lynntech’s MS Unit produces unique chemicals and materials in the fields of reactive fabrics, biochemical sensing, oxidation control, and nanomaterials.

### Industrial Science

Lynntech’s IS Unit creates innovative solutions in advanced heat sources, fuel production, emission control, and air and water treatment.

### Life Sciences

Lynntech’s LS Unit assembles diagnostic assays and microbiological identification platforms in point-of-care technologies, microbe detection, and medicinal support.



# Our Capabilities

## Supporting Advantages

Lynntech equips its engineers and scientists with the support needed to deliver solutions and leverage its staff's creativity and ingenuity.

**Analytical Laboratories** perform dedicated testing activities for streamlined data collection:

- Multi-Spec Gas Chromatography
- Elemental Analysis
- UV-Vis and Infrared Spectroscopy
- X-Ray Diffraction
- Particulate and Porosity Analysis

**Computational Modeling** simulates complex physical systems for improved product design and development:

- COMSOL Multi Physics
- ANSYS / FLUENT
- MATLAB / Simulink
- Mathematica
- Quad Core Server Licenses

**CAD and Media Services** craft detailed visuals to aid in project engineering & product presentation:

- Parametric Solid Modeling
- Photorealistic Rendering
- 2D and 3D Animation
- Engineering Analysis

**Instrumentation** assembles electronics platforms with customized components and software modules:

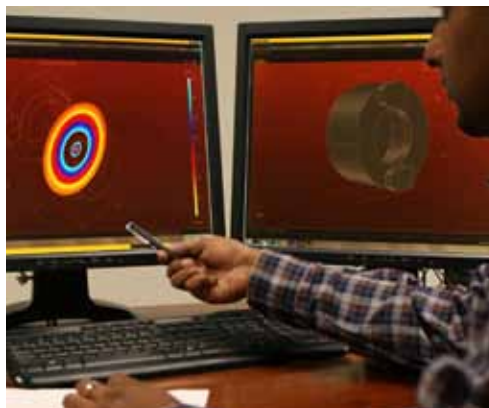
- Altium Designer
- ZEMAX Optics Design
- LabVIEW Control Systems
- Certified Surface Mount Technicians

**Machining and Fabrication** performs milling for rapid prototyping and advanced material processing:

- Five Axis CNC Machining Centers
- Multi Position Lathes
- Orbital, TIG, and MIG Welding
- Mastercam X5 Five Axis

## Multidisciplinary Collaboration

People are our most valuable asset. Our diverse team of scientists, engineers, and technical staff is dedicated to the pursuit of excellence in innovation, knowledgeable in the state of the art, and experienced in developing real-world solutions. Finding those solutions requires a multidisciplinary approach to a greater extent today than ever before, and we recognize that close collaboration, both within our organization and with external experts, is essential to achieve effective results. Our leadership combines advanced degrees in business administration, accounting and finance, and project management with decades of public, private, and entrepreneurial experience to guide all projects with detailed business planning and in-process evaluation.



**“People are our most valuable asset...dedicated to the pursuit of excellence in innovation, knowledgeable in the state of the art, and experienced in developing real-world solutions.”**



# Energy and Power

## Focus Technologies

- Fuel Cell Stacks and Components
- Fuel Cell Systems
- Electrolyzers
- Regenerative Power Systems
- Batteries
- Ultracapacitors
- Dielectric Capacitors
- Micropumps
- System Components

## Experience

### Component Development

Catalysts and Electrodes  
Membranes and Electrolytes  
Membrane Electrode Assemblies  
Gas Diffusion Layers  
Bipolar Plates  
Electrode Sheets

### Fuel Cell and Electrolyzer Stacks

Proton Exchange Membrane Cells  
Alkaline Cells  
Solid Oxide Cells  
Power Levels from 5W to 25kW+  
Fuel and Oxidant Variants

### Fuel Cell and Electrolyzer Systems

Unmanned Undersea Vehicles  
Unmanned Aerial Vehicles  
Portable Power  
Stationary Power  
Custom Applications

## Infrastructure

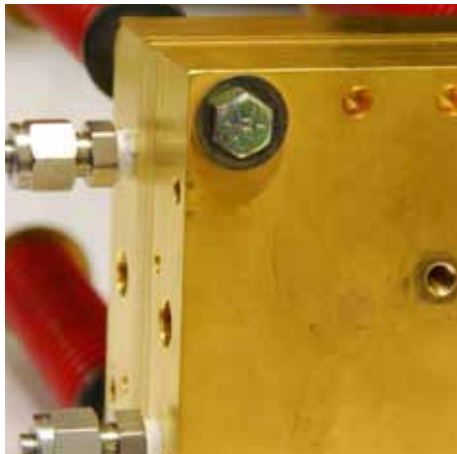
Extended Endurance Testing  
Fuel Cell Testing Equipment  
Small to Medium Scale Production  
Spray Coating Equipment  
Clean Room for Manufacturing

## Overview

Lynntech's Energy and Power Unit (EP) develops high performance energy and power systems and components for a range of demanding devices and applications. Using its core experience in fuel cells, electrolyzers, hybrid power systems, and batteries, EP develops energy solutions to meet unique customer requirements. EP's experience ranges from materials research and development to prototype design, development and testing. EP components and systems have applications in aerial, undersea, and land vehicles and stationary and portable power systems.

## Certified Component Production

Lynntech operates an ISO 9001:2008-certified component manufacturing division, offering high performing products ranging from components to complete fuel cell systems.



**“Lynntech’s Energy and Power Unit (EP) translates cutting-edge research and development into power solutions for demanding applications.”**



# Cyber-Physical Systems

## Focus Technologies

- Intelligent Platforms
- Sensor Fusion
- Real-time Computation
- Algorithm Development
- System Analysis
- Signal Processing
- Embedded Systems
- Human-based Computation

## Advantages

### The Cyber-Physical Systems Unit:

- Enhances the capability of existing sensor infrastructure with minimal added cost.
- Reduces large, complex data streams to concise, actionable information.
- Utilizes available data to extract information that would otherwise be buried in noise.
- Capitalizes on the complementary strengths of machine and human processing.
- Uses expertise in both computational and sensing hardware and an understanding of how to balance workload between the two resources to optimize performance.
- Combines technology and business foci to deliver solutions to the marketplace.

## Infrastructure

Optics Laboratory  
Instrumentation Laboratory  
Stable Temperature Laboratory  
CNC Optical Calibration Gantry  
Cessna 182 for Testing & Evaluation  
Avionics Interface & Simulation Hardware  
Altium Designer  
Xilinx ISE Design Suite  
ZEMAX  
MATLAB  
Mathematica

## Overview

The Cyber-Physical Systems Unit (CPS) develops advanced sensory instrumentation to provide operationally-useful answers in challenging environments. The sensor data production rate continues to accelerate, pushing the limit of human capacity to process the information in a relevant timeframe. CPS platforms extract actionable information from a sea of raw data, helping the user meet mission objectives in the field. CPS uses electro-optical/infrared, embedded navigation, hyperspectral imaging, database, human interface, and other resources to solve real-world problems such as high-speed film defect detection, real-time aerostat structural integrity monitoring, perimeter threat detection, and maritime search and rescue.



Courtesy of United States Coast Guard

**“CPS platforms extract actionable information from a sea of raw data, helping the user meet mission objectives in the field.”**

# Materials Science

## Focus Technologies

- Nanostructured Materials
- Coatings
- Biocompatible Ceramics
- Reactive Fabrics
- Surface-Modified Materials
- Photocatalysts
- Chemical Sensors
- Dielectrics

## Experience

### Coatings

Conversion Coatings  
Chromate-Free Coatings  
Conductive Coatings  
Superhydrophobic Coatings

### Specialty Chemicals

IR-Amorphous Transparent Materials  
Potassium Ferrate ( $K_2FeO_4$ )  
Ion Exchange Materials  
Alternative Chemical Disinfectants

### Material Processes

Electrolytic Passivation  
Nanomaterial Synthesis  
Surface Functionalized Materials  
Layer-by-Layer Assembly  
Chemical Deposition

### Reactive Fabrics

Chem-Bio Protecting and Flame-Resistant Textiles  
Colorimetric & Reagentless Chemicals-Sensing Fibers

## Infrastructure

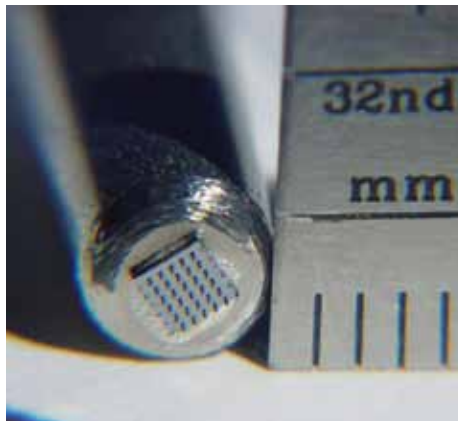
X-Ray Diffraction  
Surface Area and Porosity Analyzer  
ICP / AES, AA  
Atomic Force Microscopy (AFM)  
IC (Ion Chromatography)  
GC-MS  
Total Organic Carbon (TOC) Analyzer  
UV-Vis Absorption Spectroscopy

## Overview

The Materials Science Unit (MS) develops advanced materials with properties tailored for defensive and protective applications. MS collaborates with experts in materials sciences and engineering to develop enhanced material solutions for wide-spread applications. Among our successes are extended life conversion coatings, biocompatible structures, functionalized substrates, biochemical sensing, colorimetric fabrics for chemical detection, and the development of dielectric nanomaterials for capacitors. MS serves several sectors, with extensive interaction within the aerospace, medical and chemical processing industries.

## Defense Applications

MS develops corrosion-resistant coatings to enhance the longevity of maritime vessels and reactive fabrics to indicate the presence of chemical warfare agents.



**“MS collaborates with experts in materials sciences and engineering to develop enhanced material solutions for wide-spread applications.”**





# Industrial Science

## Focus Technologies

- Advanced Combustion Science
- Thermal and Non-Thermal Plasma
- Plasma-Assisted Catalysis
- Industrial Waste Reformation
- Zeolite Modified Adsorbents
- Advanced CO<sub>2</sub> Separation
- Air and Water Treatment
- Nanomaterials Synthesis

## Experience

### Plasma Employed Processes

Energy Efficient Combustion  
Catalytic Cracking  
Alternative Fuel/Chemical Synthesis  
Heavy Hydrocarbon Upgrading  
H<sub>2</sub> and Syngas Production  
Flow Separation Control  
Nano-Particle Synthesis

### Nanomaterials Synthesis

Polymer Nano-Composites  
IR-Amorphous Transparent Materials  
Ion Exchange Materials

### Gas Separation

Surface Engineering and Modification  
Material Functionalization  
Flue Gas Clean-Up  
Closed-Loop Rebreather Systems

## Infrastructure

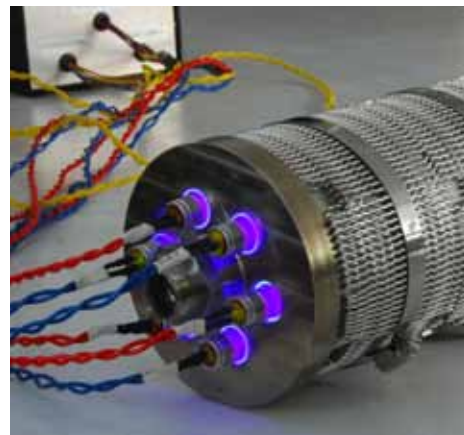
10W-10kW Plasma Power Sources  
RF and Microwave Generators  
Dielectric Discharge Sources  
Hollow Cathode Discharge Sources  
Gas Chromatographs: MS, FID, and TCD  
X-Ray Diffraction  
BET Surface Area Analyzer

## Overview

Lynntech's Industrial Sciences (IS) Unit creates composite materials, improves industrial processes, and engineers solutions for targeted industry challenges. IS refines chemical applications to improve resource management, allowing for the reuse of discarded byproducts and increased process efficiency. IS has proven expertise in critical research areas, such as improved energy efficiency and reduced emissions in combustion processes, fuel reformation, industrial pollution reduction, nanomaterials synthesis, and gas and water purification. Lynntech's IS Unit supports an array of public agencies and private companies by designing and delivering significant research successes in combustion applications, fuel processing, energy production, food service, and emission control.

## Non Thermal Plasma

IS focuses on integrating plasma with surface catalysts to enable energy-efficient technologies for fuel reformation, gas to liquid conversion and emission control.



**“IS refines chemical applications to improve resource management, allowing for the reuse of discarded byproducts and increased process efficiency.”**

# Life Sciences

## Focus Technologies

- Diagnostic Probes
- Biothreat Detection
- Micro-Fluidic Systems
- Protein Discovery
- Nano-Brushes
- Biofilm Attenuation
- Genome Sequencing

## Experience

### Cellular and Molecular Biology

Pathogen Detection & Defense  
Human Fluid & Blood Sampling  
Environmental Sampling  
Photodynamic Therapy  
Biofilm Attenuation  
Accelerated Tissue Repair

### Biochemistry

Point-Of-Care Diagnostics  
Ligand Discovery  
Label-Free Detection  
Biochemical Testing Systems  
Enhanced Medicinal Support

### Bioinformatics and Proteomics

Composite Bioinformatic Analysis  
Microorganism and Toxin Detection  
Proteomic Array Analysis  
Cancer Cell Detection  
Advanced Sensor Technology  
Advanced Gene Sequencing

## Infrastructure

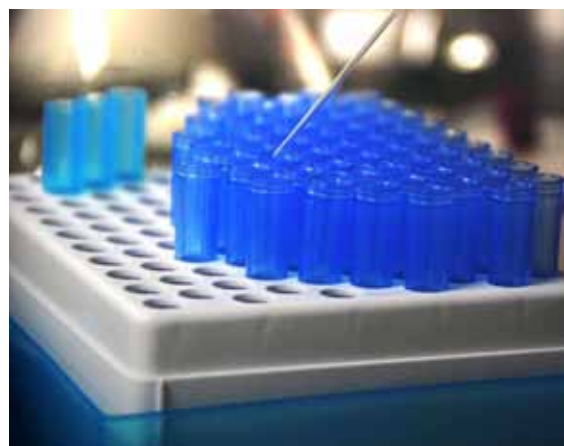
BSL 2 Microbiology Laboratory  
Computational Genome Libraries  
Exclusive Ligand Expertise  
Class II Biosafety Cabinets  
Class 100 PCR Enclosures

## Overview

Lynntech's Life Sciences Unit (LS) provides research expertise in molecular biology, cellular biology, biochemistry, and bioinformatics. Through the collaboration of these disciplines, LS assembles diverse teams to execute biology-dominant research. LS excels in the field of biological agent detection and identification, as well as sensor-based data processing for human pathogen and genome recognition. Utilizing proprietary software and advanced sensing units, LS delivers diagnostic integrity for point-of-care interactions. With partners in major research sectors, Lynntech plays a fundamental role in the creation, execution and promotion of innovative medical technologies.

## Collaborative Partnerships

Lynntech has a 20+ year history of ongoing partnerships with over 200 research-focused universities, medical centers and federal research agencies.



**“LS excels in the field of biological agent detection and identification, as well as sensor-based data processing for human pathogen and genome recognition.”**



## Customers and Partners

Lynntech is a research and development resource for both public and private industries. Past and present industries have realized the value of Lynntech's research and development capabilities.

- Aerospace
- Defense & Security
- Agriculture
- Environmental Remediation
- Healthcare
- Consumer Electronics

## Quality



Lynntech holds a certificate for ISO 9001:2008 in the scope of Provision of Technology, Research and Development for Science and Engineering and the Manufacture of Fuel Cell Components.

Lynntech is in compliance with AQAP-2110 requirements for product design and development, ensuring our inclusion as a defense material supplier for NATO or NATO-partnered ventures.

“The company maintains **75,000 sq. ft.** of combined administrative, research and production space, with up to 100,000 sq. ft. available for **additional expansion.**”



## Our Company

### History

Lynntech began operations in 1987, providing early stage scientific research and technology development for government-sponsored initiatives. Building on early successes, Lynntech expanded into prototype development and explorative research for energy, water and health applications. Lynntech's capabilities have progressively expanded, recruiting key talent in aerospace, cybernetics, industrial processing and biochemical sciences. This research has resulted in patents and licenses that support the formation of independent businesses rooted in Lynntech's research innovations.

In 2007, Lynntech was acquired by a new owner who has focused on bringing research breakthroughs to commercial markets. This has resulted in greater technology partnerships, allowing Lynntech-developed research to be a key element in emerging technologies that are sold as commercial applications. Lynntech has grown to incorporate all stages of the research and development cycle, offering conceptual design, experimental analysis, prototype creation, market positioning, and commercial production. In this way, Lynntech provides efficient, reliable, and innovative solutions to the global community.

### Facilities

Lynntech is located at The Science Park at Research Valley, in College Station, Texas. The company maintains 75,000 sq. ft. of combined administrative, research and production space, with up to 100,000 sq. ft. available for additional expansion.

The Science Park is centrally-located between four major metropolitan cities with immediate proximity to dozens of leading medical and research universities, providing access for collaboration and fostering a community of innovation.

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**Lynntech**