

Engineering

*Leading the Way in Process
Engineering and Product
Development*

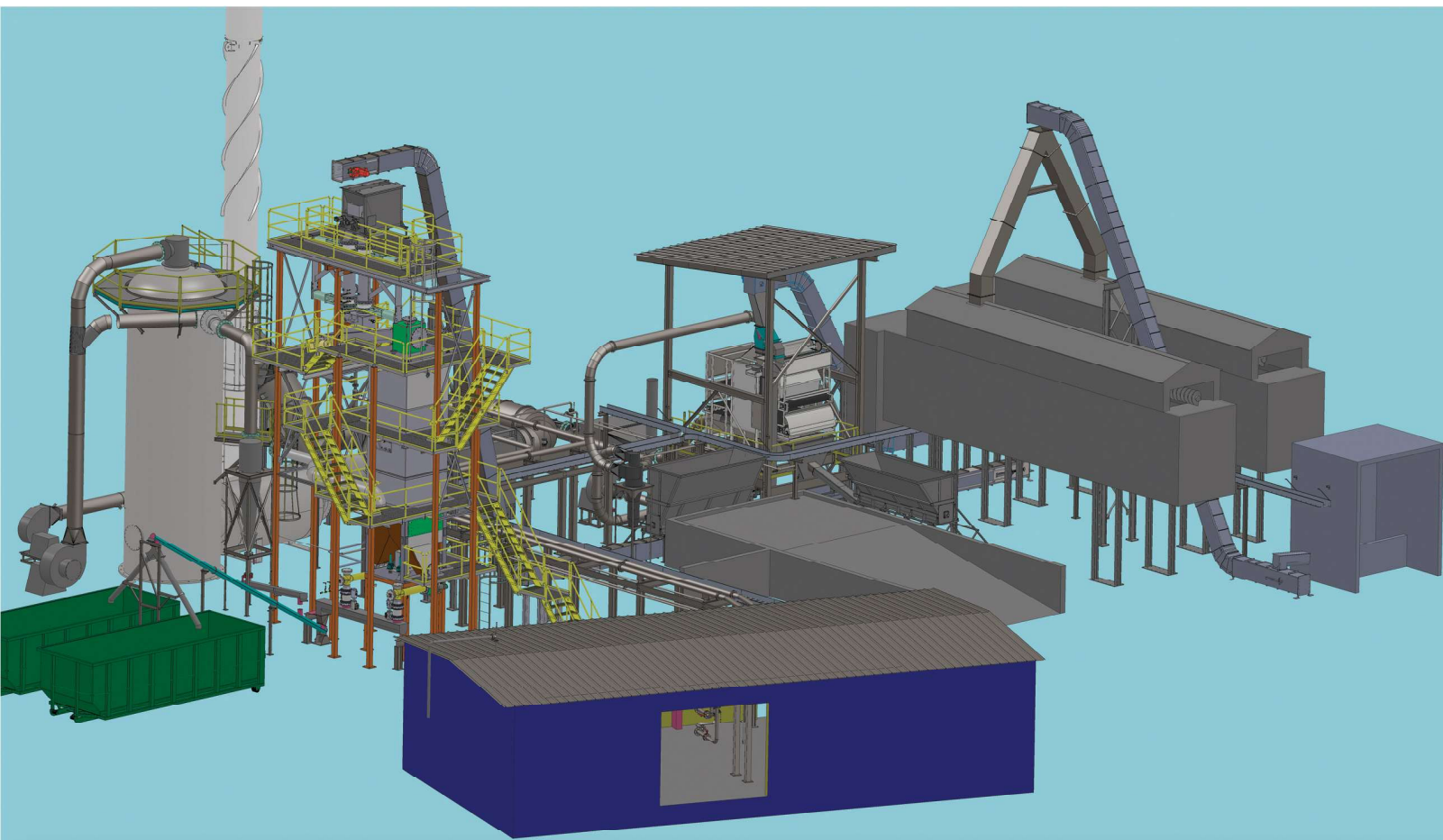




Total Project Engineering and Management Concept to Commercialization or Anywhere In-between

- Integrated approach with engineers, automation/control, designers, and fabricators working together
- Engineering for process and product development, commercial scale plants, custom equipment, and process improvement
- Have served companies worldwide including private, public, universities, and government agencies





What We Do

Since 1981, Applied Chemical Technology has worked worldwide to provide **complete engineering services** from concept to commercialization. We offer **innovative solutions** for all engineering needs. Whether you require troubleshooting, a new process or product, automation, or project management; ACT has the **expertise** and ability to handle all of your engineering demands.

Engineering

- Chemical
- Process
- Mechanical
- Electrical
- Automation
- Structural

ACT's engineers provide you with

- Conceptual engineering
- Front-end engineering
- Detail engineering
- Cost control and tracking
- Safety, training, operation and equipment manuals

ACT also maintains a complete team of designers using CAD with 3D modeling to complement our engineering services. These skilled designers work closely with our engineers to develop the detailed drawings, diagrams and documentation required for your project.





Expertise and Experience

Established in 1981, Applied Chemical Technology's engineers offer an unmatched background of **technological expertise**. Our staff of **certified professionals** has the knowledge and experience to handle a broad range of process applications and chemical products.

Typical Process Applications

- Agglomeration
- Coating
- Concentrating
- Cooling
- Drying
- Granulation
- Heating
- Material handling
- Pelletizing
- Prilling
- Reacting
- Separating
- Sizing
- Tableting

Products and Materials

- Algae
- Animal feeds
- BioChemicals
- BioFuels
- BioSolids
- Catalysts
- Chemicals
- Clean energy
- Coated seed
- Concrete
- Cosmetics
- Fertilizers- solid & liquid
- Foods
- Pharmaceuticals
- Paper
- Polymers
- Proppants
- Solvent-based products
- Specialty chemicals
- Waste streams
- Waxes



Confidentiality and Patents

At Applied Chemical Technology, we offer every client the security of signed non-disclosure agreements. With ACT, your project is kept completely confidential, both during the project and afterwards. Assurance that confidential information will be kept private is key to confidently sharing information and ideas relative to the project. Since ACT's founding in 1981, there has never been a breach of confidentiality, proving our track record.

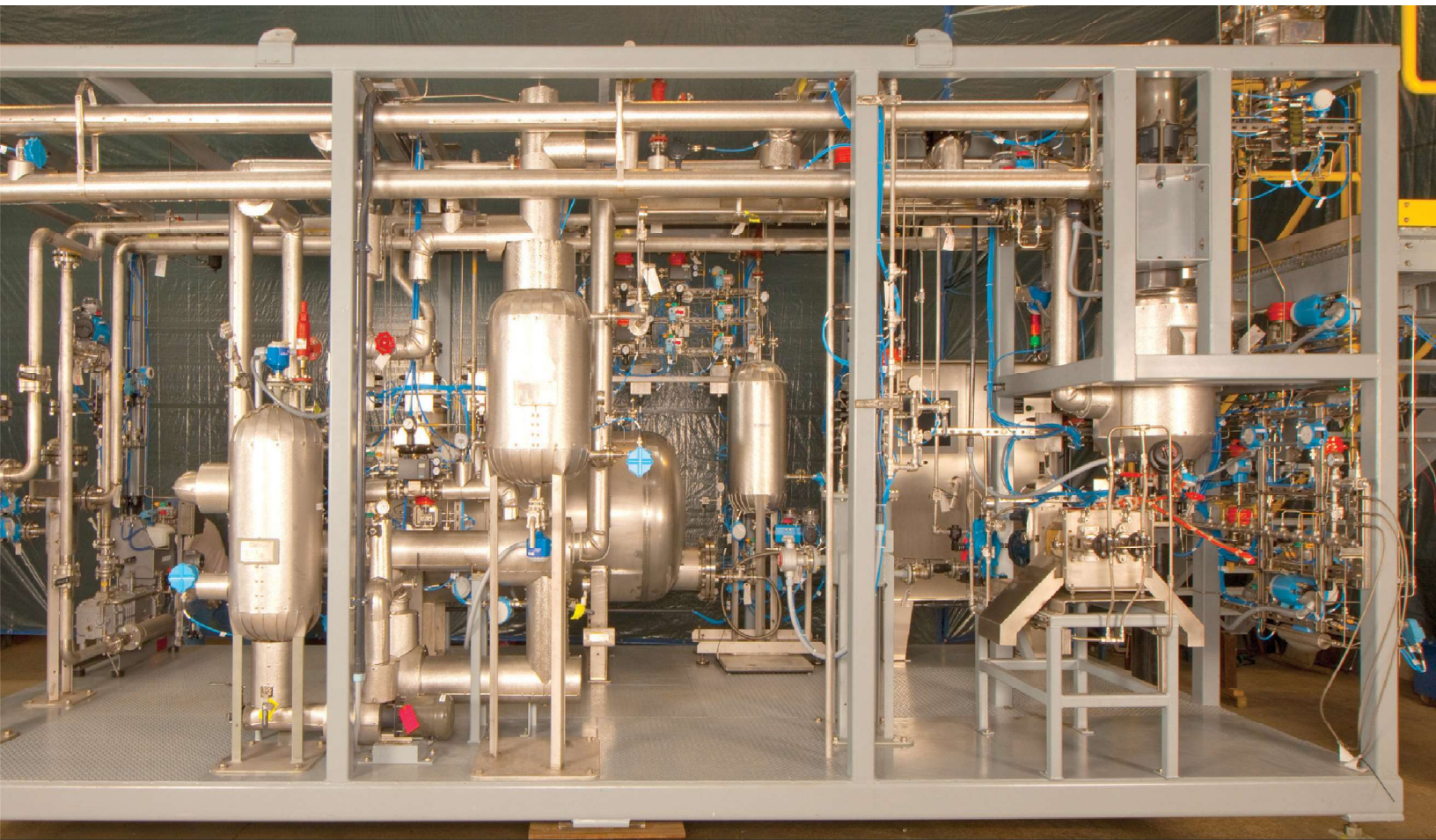
In addition to keeping our client's information confidential, ACT assigns any patentable developments based on your information to you and assists in applying for patents, both in the U.S. and abroad.

"Applied Chemical Technology's solid reputation on confidentiality and the protection of client owned intellectual property is one reason when I worked for a previous employer, we selected ACT. I found the ACT team to be highly professional with a strong commitment to policies and procedures that safeguarded our confidential information and IP." **Don Lauweryssen, Vice President Business Development, Yargus Manufacturing, Inc.**

"My company has had a long relationship with ACT. From time to time, ACT has declined additional development opportunities to ensure they do not risk IP of any of the other clients. Any company can have the proper legal agreements in the file. The actions of the personnel at ACT demonstrate a commitment to integrity that keeps us coming back." **Senior Manager, Premium Products.**

"H.J. Baker has worked with ACT on R&D projects for many years. We appreciate their confidentiality, professionalism, forward thinking, and ability to 'think outside the box' on our projects. We look forward to continuing our relationship with ACT."

Don Cherry,
President, Crop
Performance Division,
H.J. Baker



Skid Mounted Systems

Applied Chemical Technology's design capabilities and automation/control expertise have enabled ACT to provide custom skid mounted systems in a timely manner and at an economical cost. ACT can design, fabricate, and supply turnkey skid mounted systems to meet your project's needs.

Typical ACT Skid Systems

- Pilot plant
- Demonstration skids
- Specialty chemical
- Pharmaceutical
- Biofuels
- Pumping
- Mixing
- Distillation and solvent recovery
- Fertilizer production
- Custom designed systems

Benefits of ACT Skid Systems

- Cost savings
- Decreased start-up time
- Reduced installation cost
- Shipped fully assembled
- FAT (Factory Acceptance Testing) performed prior to shipping
- Ideal choice for construction in remote locations
- Efficient & quality fabrication
- Allows for relocation as needed
- Designed to fit shipping containers
- Fully automated & integrated turnkey systems



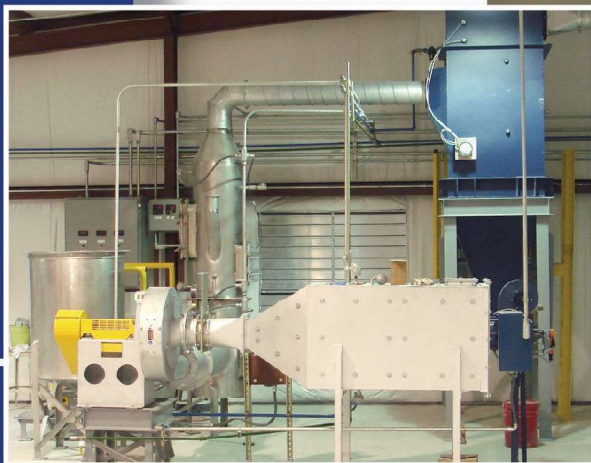
Process Engineering Services

- Process and product evaluation
- Process and product development
 - Bench-Scale development
- Scale-up
- Process modification
 - Increased production capacity
 - Debottlenecking
 - Improved product quality
 - Improved efficiency
 - Optimization
- Material handling
- Cost reduction
 - Process
 - Equipment
 - Operations
 - Materials
 - Automation
- Emission control
- Safety enhancement
- Raw material evaluation
- Plant expansion
- Commissioning and start-up services
- Operator training

Plant Engineering Services

- Complete plant design
- Chemical, mechanical, electrical, automation, civil, and structural engineering
- Plant modification
- Plant evaluation
 - Feasibility
 - Economic viability
 - Troubleshooting
 - Value engineering
 - Efficiency and optimization
- Site evaluation and development
 - Traffic flow
 - Utilities
- Drainage and waste control requirements
- Soil conditions and site preparation requirements
- Space requirements
- Equipment design and fabrication
- Instrumentation control design
- Automation design
 - Programming
- On-site engineering supervision
 - Assembly and erection
 - Plant management and operation

ACT's integrated approach reduces project costs





Other Services and Client Benefits

Applied Chemical Technology's full engineering design, development, and fabrication services allow us to handle any project at any level. Our headquarters in Florence, Alabama occupy over 24,500 square feet of office, design and laboratory space as well as 65,000 square feet of fabrication and pilot plant facilities.

In addition to our engineering services, Applied Chemical Technology offers the following to ensure your project runs as smoothly as possible:

Chemical Laboratory

- Analysis for support of bench-scale & pilot scale processes
- Private lab areas for sensitive projects

Bench Scale/Pilot Plant

- Process and product development
- Equipment testing and development
- Scale-up development
- Short-term production runs
- Secure areas for sensitive projects

Fabrication

- ASME Div 1 pressure vessel shop
- Custom pressure systems and reactors
- Explosion proof design & fabrication
- Wide range of materials including metals from steel to exotic alloys and aluminum, wood, plastic, fiberglass

Additional Benefits & Services

- Installation, commissioning, and start-up
- Fast track operations – your project follows your schedule
- Complete in-house workforce of engineers, automation, designers, chemists, scientists, technicians, and craftsmen to ensure control of confidential information
- Client involvement welcomed and encouraged
- Engineers work with your team at your site or at ACT
- Administrative assistance and office space provided



The stability of ACT's workforce provides continuity across longterm projects.

To find out more about our services or to discuss your project with an ACT engineer, you may contact Applied Chemical Technology by phone, mail, email, or web form. All initial consultations are strictly confidential and free of charge.

Why ACT?



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