THIN FILM COATINGS

www.acreetech.com
Objective
We seek customers who need advanced coatings and surface modification processes. We seek partners to develop and commercialize thin-film technology to improve their products. We seek partners who want to create the best possible products in the market.

Mission Statement
Acree Technologies mission is to be a world-class thin film coating company. Acree creates and commercializes leading-edge coating technologies. We work with clients to develop proprietary coating solutions for their unique needs. We provide cost effective production coating services and strive for 100% customer satisfaction.

Profile
Acree Technologies Inc. was founded in 2004 by a group of scientists formerly employed by large semiconductor manufacturers and national laboratories. Acree works with private industry, government agencies and universities in aerospace, medical and other high-tech industries. Acree specializes in thin film coatings applied using Physical Vapor Deposition (PVD). Acree develops coatings and deposition processes to improve the performance of a wide variety of products. We provide production coating services, research and development, materials characterization services, and coating equipment sales. Acree is a registered AS9100/ISO9001 company.
Products & Services

Products
» **Biomedical Coatings**: Joint implants, Heart pumps, Catheters, Pacemaker electrodes
» **Corrosion Resistant Coatings**: Marine components, Food processing
» ** Electro-Optical Coatings**: Anti-Reflective, Transparent Conductive Oxides, Electro-Magnetic Interference
» **Erosion Resistant Coatings**: Impellers, Turbine blades, Pumps
» **Erosion Resistant Coatings**: Multilayer coatings effective against most types of erosion
» **Surface Modification**: Plasma nitride, Plasma carbonizing
» **Temperature Resistant Coatings**: Thermal Barrier Coatings for turbine engines, aerospace parts, and sensors
» **Wear Resistant Coatings**: Gears, Rotary components, Bearings, Tools
» **Equipment Sales**: Complete coating systems, Deposition heads, Power supplies

Application Areas
» **Aerospace**: Impellers, Turbine blades, High speed shafts, Bearing surfaces
» **Aircraft**: Landing gear tubes, Mounting structures, Electrical connectors
» **Automotive**: Fuel injectors, Valves, Cam components, Rocker arms
» **Biomedical**: Joint implants, Heart pumps, Catheters, Pacemaker electrodes
» **Tool Industry**: Drills, Punches, End mills, Cutting tools, Forming tools
» **Oil Industry**: Oil pipelines, Valves, Drills

Services
» **Custom Coating Development**: Coatings developed to solve unique problems and meet specifications required by clients in aerospace, biomedical, tool, and other industries
» **Analytical Services**: Materials testing and characterization for a wide variety of properties such as: adhesion, hardness, corrosion, wear, erosion, fatigue, morphology, electrical, and optical
» **Production Coating Services**: Acrete solves your coating needs by coating your products in our facility. We work on the scale that is right for your business, from one piece up to a full scale production line
Core Competencies

Technology
» World leader in energetic deposition processes that create better adhesion, coating density and hardness

Acree has developed coatings for:
» Advanced Canopy and Window Materials for Improved Helicopter and Aircrew Survivability
» Infrared-Transparent, Millimeter-Wave Bandpass, Missile Dome Design
» Refractory Coatings on Mechanically Resilient Insulators
» Resistant Coatings for Aircraft Components
» Durable, Transparent Conductive Coatings
» Diamond-like Carbon Coatings on Polymers
» High Temperature Sensor Materials Optimization and Fabrication Methods
» Miniaturization of Sensors on Flexible Substrates
» Passive, Wireless Sensors for Extreme Turbine Conditions

R & D
» Development of coatings and surface treatments to improve performance of materials
» Computer modeling of materials properties
» Coatings that we have developed include:
  › Biomedical coatings for implants that are both wear resistant and lubricious
  › Corrosion resistant coating for pacemaker electrodes for heart implants
  › Erosion resistant coatings for high speed turbine blades and impellers
  › Electro-optical coatings for aviation windscreens, canopies, and windows
  › Multilayer optical coatings for high intensity discharge lamps

Production Coating Services
» The best coating solution to satisfy both technical and budgetary requirements
» The benefit of experience- our hard-earned knowledge ensures that we can meet your most demanding application requirements
» Value through fair pricing and consistent yields
» Quality control using appropriate testing and documentation
» Quick turnaround and on-time delivery
» Customer confidentiality and protection of intellectual property
» Scalable production capability
» Large capacity and throughput
» Work pieces up to 140 cm x 140 cm x 140 cm (55” x 55” x 55”)
Markets & Customers

Government
» Naval Air Systems Command - NAVAIR
» Naval Air Warfare Center – PAX
» Naval Air Warfare Center – Cherry Point
» Office of Naval Research – ONR
» Air Force Research Laboratories – Kirtland AFB
» Air Force Research Laboratories – Wright Patterson AFB
» Air Force Office of Scientific Research – AFOSR
» Defense Advanced Research Projects Agency - DARPA
» US Army Research Office – RDECOM
» Department of Energy – DOE
» National Science Foundation – NSF

Private
» BAE Systems
» Boeing
» Boston Scientific
» BP Oil
» Hamilton Sundstrand
» Heartware
» Honeywell Defense Division
» Lockheed Martin
» PPG Sierracin
» Pratt & Whitney
» Proteus Biomedical
» Varian Medical Systems
**Core Advantage**
» Research scientists with over 50 years combined R&D experience. Expertise in material science, coating technologies and plasma physics. Specialization in the deposition of thin films
» Research and development facilities including 9 vacuum deposition systems
» Analytical Testing Laboratory: Sophisticated testing lab including SEM, EDX, Profilometry, Ellipsometry, and Tribology equipment. Capable of materials analysis and characterization for a wide variety of properties such as: adhesion, hardness, corrosion, wear, erosion, fatigue, morphology, electrical, and optical
» AS9100 and ISO9001 Certifications
» Certified for FDA Class III medical device production

**Sustainable Competitive Advantage**
» Patented coating technologies and equipment
» Working partnerships with key companies in the coating industry
» Highly developed relationships with significant users of coatings in numerous industries
» Copyrighted software for precise process control
» Experts in MEMS and NEMS technologies and applications
» State of the art facilities and equipment

**Projects**
**Erosion resistant coatings for high speed impellers**
Funding agency: Naval Air Warfare Center

**High Temperature MEMS/NEMS thermal barrier coatings for turbine engines**
Funding agency: DARPA

**Advanced electrically conductive transparent coatings for aircraft windscreens**
Funding agency: Air Force Research Laboratories

**Advanced electrically conductive transparent coatings for aircraft windscreens**
Funding agency: Air Force Research Laboratories

**Nanostructured exchange coupled magnetic materials**
Funding agency: National Science Foundation

**Development of biocompatible corrosion resistant coatings for human implants**
Funding agency: Private Corporate Funding

**Partners**
Lawrence Berkeley National Labs – A world leader in the development of nanotechnologies, coating processes and surface modification & characterization techniques

University of Nebraska – Leading university in the development & characterization of nanostructured materials

University of Cincinnati – Developed ASTM specs for erosion and wear testing of surfaces. Dedicated erosion testing laboratory.

Ohio State University – Advanced corrosion testing laboratory and corrosion resistant materials development program

University of California Los Angeles UCLA – Micro and nano fabrication programs and laboratories