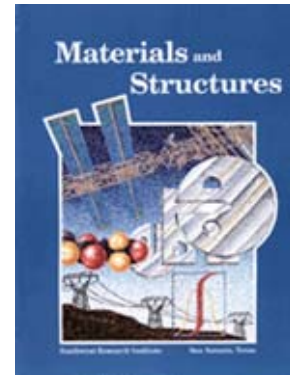


Materials and Structures

材料和结构



Southwest Research Institute (SwRI) offers research and development services in materials sciences, structural and mechanical systems, engineering mechanics, and ballistics through the Mechanical and Materials Engineering Division. The division also undertakes a variety of assignments for governmental agencies, including the U.S. Departments of Defense, Energy, Transportation, and Interior, NASA, NOAA, the Bureau of Mines, the Coast Guard, and the Nuclear Regulatory Commission.

美国西南研究院机械与材料工程分院在材料科学、结构和机械系统、工程机械、爆炸学等技术领域提供研究和开发服务，该分院也完成来自政府机构的各项研发任务，包括美国国防部、能源部、交通部、内政部、美国航天局、美国国家海洋和大气局、矿业局、海岸警备队、核能防护委员会等机构。

Areas of research include:

- [Materials Sciences](#)
 - Materials Processing
 - Mechanical Metallurgy
 - Failure Analysis and Prevention
 - Corrosion and Stress Corrosion Cracking
 - Polymers and Polymer Composites
 - Ion Implantation and Ion Beam-Assisted Deposition
 - Applied Biomaterials

技术研究及开发领域包括：

- [材料科学](#)
 - 材料处理
 - 机械金相学

- 失效分析和预防
- 腐蚀和应力腐蚀开裂
- 聚合物和聚合成分
- 离子沉降和离子束辅助沉积
- 应用生物材料
- [Engineering Mechanics](#)
 - Mechanical Properties
 - Analytical Fracture Mechanics
 - Experimental Fracture Mechanics
 - Ballistic Sciences
 - Computational Mechanics
 - Reliability and Risk Assessment
- [工程机械](#)
 - 机械特性
 - 裂纹机理分析
 - 实验检测裂纹机理
 - 爆炸学
 - 计算力学
 - 可靠性和风险评价
- [Structural Reliability](#)
 - Aerospace Structures
 - Highway and Roadside Structures
 - Transmission and Distribution Pipelines
 - Oil and Gas Production
 - Industrial Hazards
- [结构可靠性](#)

- 航天结构
- 高速公路和路边设施
- 长输管道和分支管道
- 油气生产
- 工业危害

- [Structural Design and Fabrication](#)
 - Marine Systems
 - Hyperbaric Chambers
 - Protective Structures
 - Welding and Fabrication Technology
 - Specialized Equipment

- [结构设计和制造](#)
 - 海洋系统
 - 氧气加压舱
 - 保护性结构
 - 焊接和制造技术
 - 专业设备

- [Supporting Technologies and Facilities](#)
 - Nondestructive Evaluation
 - Quality Assurance and Quality Control Program
 - Machine Shop
 - Library Facilities
 - Computer Facilities
 - Short Courses
 - Other Brochures

- [技术支持和设备](#)

- 无损检测技术
- 品质保证和品质控制流程
- 加工车间
- 图书馆设施
- 计算机设备
- 短期课程培训
- 其它宣传资料

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