



# MATERIALS & STRUCTURES



## MATERIALS

*UDRI is ranked #1 in materials engineering R&D by the National Science Foundation.*

Our scientists and engineers perform basic and applied materials research for government, industry, and academia customers. This includes a broad range of structural and non-structural materials in the aerospace, automotive, and the defense and commercial sectors.

UDRI has ISO 17025 accredited labs for evaluating coatings, elastomers, and sealants.



## AREAS of EXPERTISE

- **MATERIALS**  
Metals, ceramics, polymers, composites, adhesives, fluids, greases, coatings, sealants, elastomers, lubricants, and specialty materials
- **NONDESTRUCTIVE INSPECTION**
- **TESTING AND INSTRUMENTATION**
- **TEST TECHNIQUE DEVELOPMENT**
- **FAILURE ANALYSIS**
- **SOFTWARE TOOLS**  
for fatigue, probabilistics, and failure prediction
- **CORROSION AND EROSION**
- **SPECIFICATION TESTING**  
for coatings, gas turbine engine oils and lubricants, elastomers, and sealants



## STRUCTURES and SYSTEMS

*UDRI's interdisciplinary teams of scientists, engineers, and technicians develop technology and solve problems for the full gamut of structures and systems.*

We design, analyze, build, test, transition, and sustain innovative and reliable components and structures for systems ranging from air, space, ground, and sea platforms as well as industrial and test equipment. We blend a deep understanding of the engineering sciences with practical know-how to develop brand new capabilities and to solve aging system structural safety, durability, and reliability problems. UDRI solutions are deployed on over 20 different DoD platforms and systems.



## AREAS of EXPERTISE

- SYSTEMS ENGINEERING
- SYSTEM AND COMPONENT DESIGN
- MODELING AND SIMULATION
- COMPUTATIONAL MECHANICS
- AIR VEHICLE OPTIMIZATION
- PROTOTYPING AND FABRICATION
- TESTING AND INSTRUMENTATION
- NONDESTRUCTIVE INSPECTION
- FAILURE ANALYSIS
- ENGINEERING PROBLEM SOLVING AND SUSTAINMENT
- REVERSE ENGINEERING
- HYPERSONIC MATERIALS AND STRUCTURES