



# SUSTAINMENT



## ADDITIVE MANUFACTURING and COLD SPRAY

*Utilizing the deposition of material through a variety of computer-driven processes to create simple and complex objects, or repairs on existing parts, from the bottom up*

UDRI'S additive manufacturing (AM) researchers develop and transition advanced manufacturing techniques and processes to production. Using standardized tools, processes, and equipment, we address the challenges of AM including reverse engineering, design and qualification for AM, process validation and facility deployment, materials, and cybersecurity.



## AREAS of EXPERTISE

- MATERIALS OPTIMIZATION
- PRODUCT DEVELOPMENT
- SCANNING AND MODELING
- DESIGN FOR ADDITIVE MANUFACTURING
- METALS AND POLYMER ADDITIVE MANUFACTURING
- POST PROCESSING
- QUALITY INSPECTION
- TESTING AND VALIDATION
- COLD SPRAY REPAIR
- TRAINING



## ADVANCED CORROSION TECHNOLOGIES

UDRI engineers and technicians engage across the full spectrum of corrosion related research. We provide subject matter expertise in cradle-to-grave corrosion prevention and control of legacy and emerging systems. We conduct corrosion surveys of facilities and aircraft, design experiments to study the effect of corrosion on various alloys and coating systems, and qualify coating systems. We investigate the effect of laser surface prep and coating ablation on substrate fatigue and residual stress to define safe operating parameters.

## ROBOTICS and LASERS

UDRI is responsible for the technology transition for automation (robotics) and lasers. In September, 2017, we successfully completed the transition of a robotics laser coating removal system at Hill AFB, UT, to remove coatings from the F-16 Falcon airframe.

## AREAS of EXPERTISE

- ACCELERATED ENVIRONMENTAL WEATHERING
- LASER ABLATION
- AEROSPACE COATINGS  
Chrome and non-chrome primer and top coating
- ADVANCED COATINGS  
Powder coat, electrocoat
- AEROSPACE CORROSION
- CORROSION PREVENTION
- SPECIMEN DESIGN AND PREPARATION
- TEST PLANNING AND EXECUTION

