ADVANCED LIFE SUPPORT

Research and technology development for sustainable human exploration life support and habitation.

- Closed-cycle operability
- Water recovery systems for maintaining potable water in space
- Synthetic biology
- Microbial characterization of solid waste
- Plant growth chambers for food production
- Atmospheric trace contaminant removal

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APPLIED PHYSICS

Development of instrumentation and tools to answer vehicle processing and ground support equipment questions.

- Nondestructive evaluation of flight hardware and ground support equipment
- Leak detection and visualization
- Sensor development
- Electromagnetic radiation
- Ultrasonics

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National Aeronautics and Space Administration

SWAMP WORKS

A HANDS-ON, LEAN DEVELOPMENT ENVIRONMENT FOR INNOVATION

ADVANCED MATERIALS & SYSTEMS

Polymer science, materials chemistry, & novel composite systems for space applications.

- Aerogel composites & smart thermal materials
- Chemochromic gas sensing materials & systems
- Damage detection, self-healing, & repair
- Carbon nanotube & conductive polymers
- Nanocomposites & polymer processing
- Materials for flight technology demonstrations

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APPLIED CHEMISTRY

Research and development for a range of chemistry applications to solve NASA's unique needs.

- Green propellant compatibility & leak detection
- Solvent-free precision cleaning
- Oxygen recovery from spacecraft CO_2
- Analytical chemistry for process development
- Catalyst and other chemical synthesis
- Environmental remediation technology development
- In situ resource utilization technology development

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CRYOGENICS

Unique expertise providing energy-efficient solutions for storage, transfer, and use of cryogens and cryogenic propellants on Earth and in space.

- Thermal insulation systems
- Integrated refrigeration systems
- Design of propellant servicing systems
- Novel materials and components
- Low-temperature applications
- Energy-efficient technologies for the energy-intensive endeavors of exploration

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GRANULAR MECHANICS & REGOLITH OPERATIONS

Development of technologies for working with regolith (surface materials) on other bodies in space, and the study of its basic physics and geology.

- Excavation technologies
- Pneumatic transport of regolith
- Magnetic handling of regolith
- Dust-tolerant mechanisms

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"The Earth is the cradle of humanity, but mankind cannot stay in the cradle forever." - Konstantin Tsiolkovsky

Our vision is to be the premiere government research and technology laboratory for development of spaceport systems on Earth or at any space destination.

Our mission is to provide government and commercial space ventures with pioneering technologies that enable working and living on the surfaces of the moon, planets, and other bodies in our solar system.

ELECTROSTATICS & SURFACE PHYSICS

Investigation of electrostatics and surface physics problems with applications for spaceflight and planetary exploration.

- Electrostatic analyses
- Detection, mitigation, and prevention of electrostatic charge generation on spaceflight hardware and ground support equipment
- Dust mitigation for solar panels, in situ fluid and power connections, and spacesuit materials

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CORROSION TECHNOLOGY

Technical innovations and engineering services in all areas of corrosion for NASA and external customers.

- Investigation of materials performance and degradation in different environments
- Mechanical, physical, and environmental testing
- Applied research
- Development of new corrosion detection and control technologies
- Consulting and testing services

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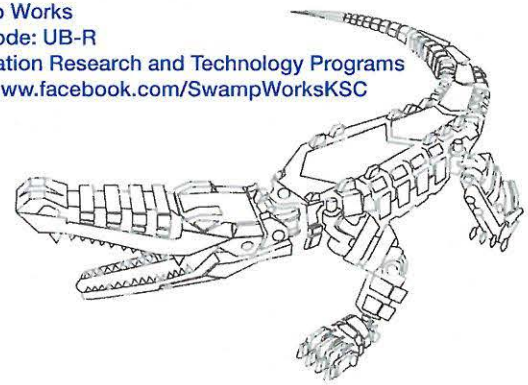

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