



# Research and Development

## SMALL BUSINESS INNOVATION PROGRAMS (SBIP) STRATEGIC MATERIALS (SM)



Program Manager: Vaibhav Jain PhD

Support: Baxter Moody PhD

✉ Vaibhav.Jain@dla.mil

✉ Baxter.Moody\_ctr@dla.mil

### DLA'S TRANSFORMATION IMPERATIVES



Build Organization Agility Through Our People and Culture

Calibrate Resilient And Responsive Logistics Solutions On Support Of Military Readiness

Enhance Support To Integration Deterrence Across The Continuum Of Conflict In Contested Logistics Environments

Lead Logistics Interoperability Across The Department, Allies, Whole Of Government, And Industrial Base

### OBJECTIVE

To resolve warfighter requirements with the scientific excellence and technological innovation offered by the U.S. small business industrial base. To transition innovative technologies and modernize legacy solutions in support of DoD Programs of Record.

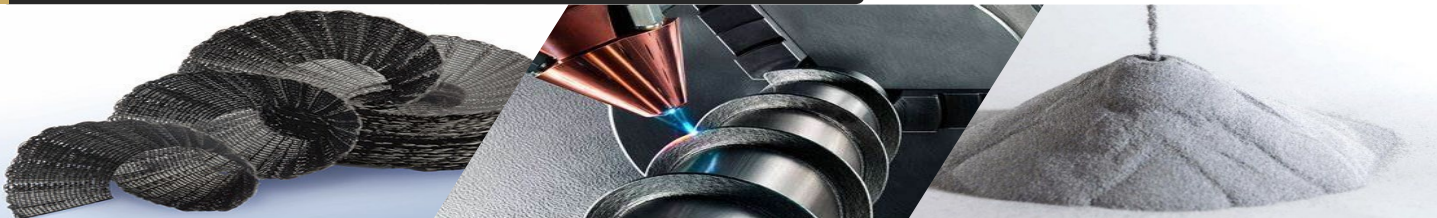
#### SMALL BUSINESS INNOVATION RESEARCH (SBIR)

Established by Congress in 1982 to fund R&D by U.S.-based small businesses of 500 or fewer employees. Eleven federal agencies participate in the program.

#### SMALL BUSINESS TECHNOLOGY TRANSFER (STTR)

Established in 1992 to fund cooperative R&D projects by U.S.-based small businesses partnered with non-profit U.S. research institutions. Five federal agencies participate.

### CURRENT FOCUS AREAS IN STRATEGIC MATERIALS



#### RECYCLING OF RARE EARTH AND CRITICAL MATERIALS

- › **Create** domestic supply chains of critical raw materials
- › **Develop** high-yield methods for elemental separations and purifications
- › **Reduce** the energy consumption required to manufacture high-performance materials

#### ADVANCED MATERIALS FOR HYPERSONICS

- › **Improve** product performance
- › **Modernize** manufacturing capability
- › **Reduce** Warfighter costs
- › **Broaden** defense manufacturing industrial base

#### DOMESTIC SOURCING OF CRITICAL MATERIALS

- › **Reduce** reliance on imported minerals and rare earths
- › **Bolster** domestic supply chain against volatility of global critical material markets
- › **Develop** value-added opportunities for secondary materials

#### NEXT GENERATION MATERIALS MANUFACTURING

- › **Generate** high quality, domestically sourced raw materials for additive manufacturing
- › **Advance** rare earth alternatives that meet high performance requirements
- › **Expand** AM methods to handle wider ranges of sizes and materials



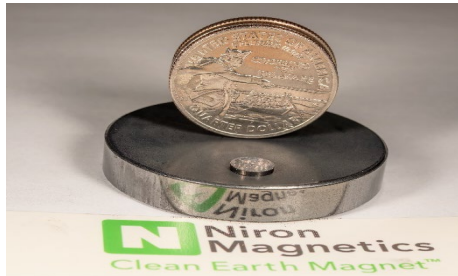
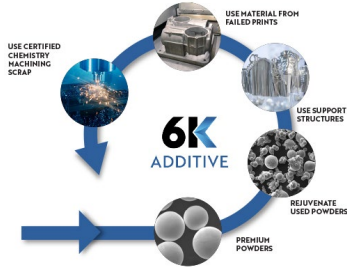
# Research & Development SBIP - SM



## Project Development

DLA SBIP issues competitive awards (Phase I thru Phase III) based on topics aligned with executive guidance, the National Defense Strategy, Top OUSD R&E Technology Priorities and the DLA Strategic Plan.

View topics for proposal: <https://www.dodsbirsttr.mil/submissions/login>



### 6K Inc.

Upcycling end-of-life metal components into high quality AM feedstock

### Niron Magnetics

Commercializing rare-earth free permanent magnets for direct drive motors

### Alkemix

Recycling scrap ESAPI plates into qualified body armor for a reliable domestic supply to the warfighter

## WARFIGHTER READINESS

### BENEFITS FOR SMALL BUSINESSES & NATIONAL SECURITY

- Addressing critical supply chain gaps and security threats through innovative research projects
- Mitigating single points-of-failure within our weapon systems supply chains
- Qualifying as new entrants to the industrial base for parts, materials and innovative manufacturing solutions



<https://www.dla.mil/Information-Operations/Research-And-Development/>

## INDUSTRY AND WHOLE OF GOVERNMENT PARTNERSHIPS

U.S. Navy • U.S. Air Force • U.S. Army • U.S. Marine Corps • DLA Land & Maritime • DLA Aviation • DLA Troop Support • DLA Disposition Services • OEMs • Private Industry • National Labs

## ONGOING EFFORTS

- Industrial Base Partnership • Additive Manufacturing • Supply Chain Risk Reduction • High-Temperature Materials for Hypersonic Flight • Domestic Manufacturing • Supply Chain & Recycling for Li-Ion Batteries • ESAPI Body Armor • Scandium Alloys • Rare Earth Elements • Energetic Materials • Advanced Low-Friction Protective Coatings • Amorphous Alloys

