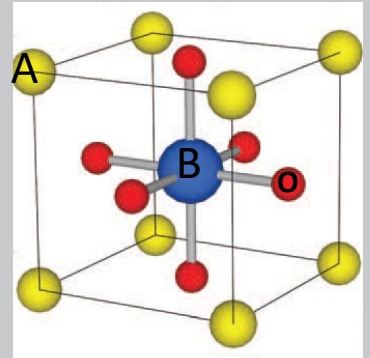


Custom Powder and Thermal Processing Development

HiFunda's turnkey custom powder development and thermal process development services can help develop unique materials and thermal atmosphere-controlled processes for your unique applications. We offer vertically-integrated turnkey ceramic materials development and characterization services:

- 1) Batching, Mixing, Milling
- 2) Calcining, Sintering, and Thermal Processing
- 3) Spray Drying
- 4) Powder Characterization
- 4) Dry Pressing
- 5) Screen Printing, Spray Coating, Ink Dispensing
- 6) Electrochemical, Performance, and Thermal Cycling Testing



A) Roller mill



B) Centrifugal mixer/mill



C) Union Process attrition mills and accessories



D) Sweco vibratory mill



E) Laboratory Spray Dryer



F) Retort-Lined Furnace for Inert, Oxidizing, or Reducing Atmosphere Control to 1100 °C



G) Over 10 Tube Furnaces for Process Development and Testing

Innovative Materials, Energy, and Sensor Solutions

The HiFunda Approach:

Develop and advance new and disruptive materials technologies through the valley-of-death that may prevent the commercialization of novel ideas and technologies.

PROVEN SUCCESS: Demonstrated track record of developing and commercializing, scaling up, and spinning out new companies that provide innovative materials solutions.

GREAT SCIENCE, GOOD BUSINESS: Excellent scientific and engineering experience with the business acumen to commercialize technologies.

PRODUCTIVE PARTNERSHIPS: Significant experience collaborating with industrial, government, and academic partners and taking excellent ideas from the bench to the marketplace.

HiFunda's Technologies:

HiFunda develops new technologies in materials science, ceramics, electrochemical devices, composites, coatings, clean technologies, sensors, and catalysis.

PLASMA CATALYTIC REACTOR FOR VALORIZATION OF METHANE and CO₂: Teamed with Princeton Plasma Physics Laboratory and the DOE to design, develop, and demonstrate novel plasma catalytic reactors and processes for converting stranded natural gas and waste carbon dioxide to methanol.

NOVEL CERAMIC-TO-METAL SEALS FOR ADVANCED POWER GENERATION: Teamed with Boise State University (BSU) and the DOE to develop reliable high-temperature seals of metal pipes to ceramic heat exchangers which will enable advanced high-temperature nuclear, concentrated solar, and advanced combustion power generation systems that utilize power cycles based on steam or supercritical CO₂.

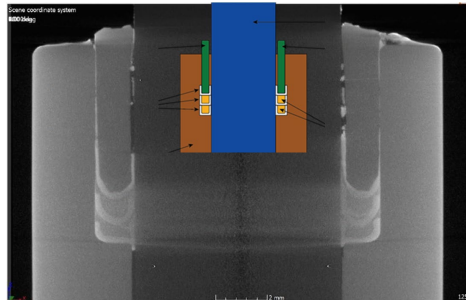
STRUCTURAL HEALTH MONITORING (SHM) OF ADVANCED COMPOSITES: Teamed with the University of Utah to further develop ultrasonic SHM sensing technology for advanced composite structures. HiFunda is currently seeking funding partners to demonstrate and mature this technology.

LOW-TEMPERATURE, CERAMIC-LIKE GEOPOLYMERS: Developing geopolymers for unique applications such as wear-resistant conductive coatings and composite structures as well as high surface area catalyst supports.

Current Projects:



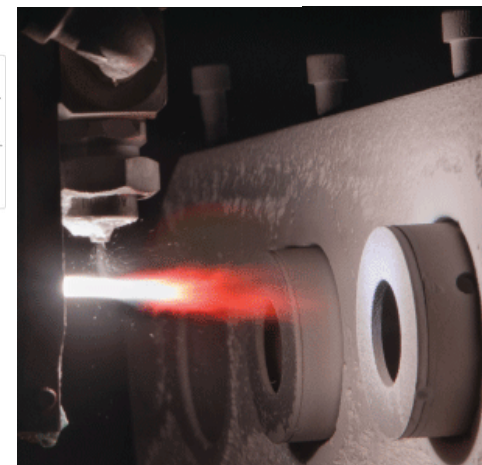
Plasma Catalyst Coupling for Improved Conversion of Methane to Liquids



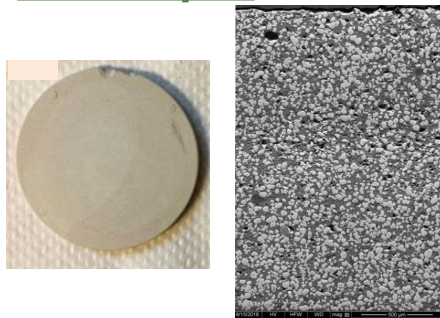
Novel Ceramic-to-Metal Seal for High-Temperature, High-Pressure Applications



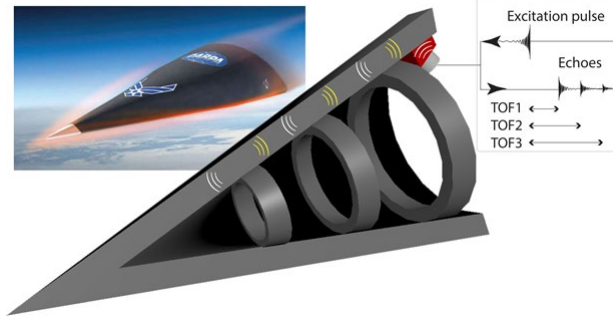
Spinout Companies:



Future Projects:



Low-Temp., Ceramic-Like Geopolymers for Advanced Coatings, Composites, & Catalysts



U/S-SHM in integrated and monolithic systems produced by additive manufacturing



HiFunda works with customers to solve their most demanding technical challenges to develop and commercialize new materials and technologies

CONTACT:
Jim Steppan, VP R&D
jsteppan@hifundallc.com