

We revolutionize the design, testing and manufacturing of materials and systems for extreme environments

Ultra-high temperatures

Acidic conditions

Radiation

Ultra-low temperatures

Extreme deformations

Extreme pressures

Innovating across disciplines and industries

We develop advanced technologies for aerospace, energy, biomedical, nuclear, environmental, defense and advanced manufacturing applications through:

MATERIALS DESIGN
AND COMPUTATION

CHARACTERIZATION
AND DIAGNOSIS

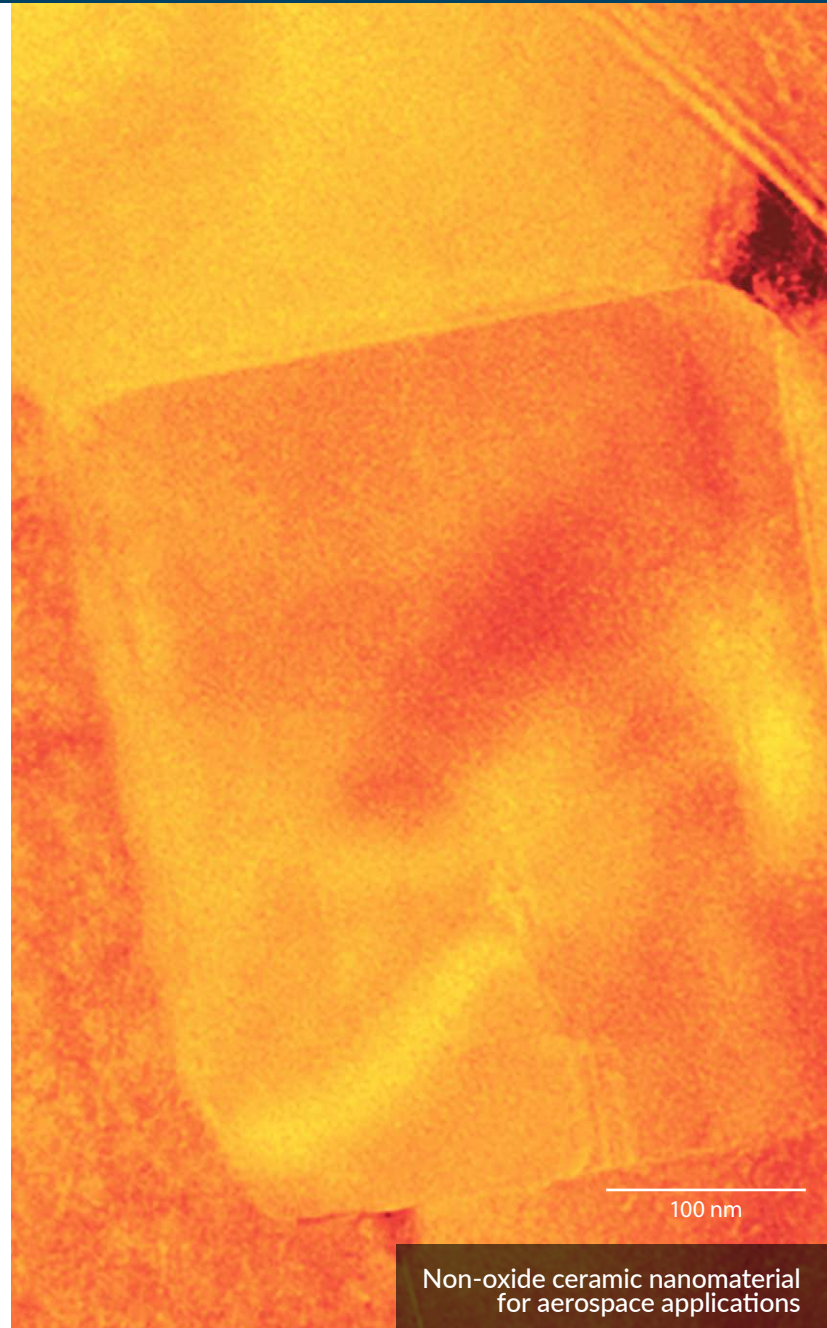
MANUFACTURING
AND INTEGRATION

TALENT
DEVELOPMENT

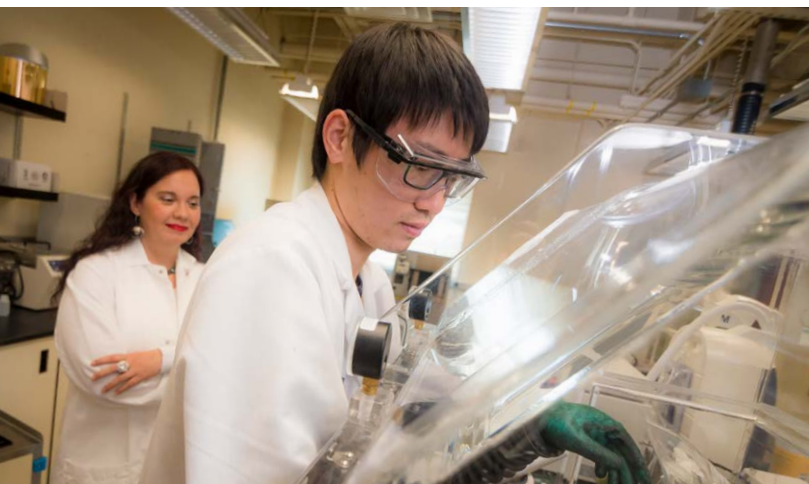
SYNTHESIS AND
FABRICATION

ECONOMIC
EVALUATION

Collaborate with us.



Non-oxide ceramic nanomaterial
for aerospace applications



Creating 21st Century Technologists

UC San Diego is collaborating with the Baja California Center for Nanoscience and Nanotechnology (CNyN-UNAM) to develop 21st century technologists with the talent and cultural fluency needed to forge global collaborations that leverage the CaliBaja border region's industrial strengths.



“At UC San Diego, we have unique expertise to **design, control and characterize materials and systems for extreme environment applications like never before.** We create entirely new classes of materials and devices with extraordinary tolerances to many real-world environments. Our work benefits industries focused on defense, pharmaceuticals, aerospace, energy, advanced manufacturing and others.”

— **Olivia A. Graeve, PhD**, Director, CaliBaja Center for Resilient Materials & Systems

Membership Opportunities

- Access multidisciplinary materials and systems innovations through our semi-annual member meetings, workshops, short courses, visiting scholar opportunities and one-on-one collaborations.
- Access the most promising and innovative globally aware students. Connect with emerging technical talent.
- Cross-border collaborations to develop new materials and systems for extreme environments.
- Join our Advisory Board and access fast-track collaborative agreements.

Expertise

Materials and devices for extreme environments

We develop and manufacture new materials and devices principally for the aerospace, nuclear and biomedical industries, including advanced materials for jet engines, next-generation nuclear reactors and biomedical devices.

Global scientists and engineers

We produce global scientists and engineers who can connect and communicate across borders. These professionals not only develop new technologies, but are also socially engaged and have the necessary cultural understanding to promote economic growth in the CaliBaja region.

Environmental technologies and systems

We develop new technologies that can provide information, statistics and trends on the environment and climate of CaliBaja.

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