

Request for Proposal

Hypersonic Material Acceleration II

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August 4, 2022

Program Abstract

LIFT utilizing a Navy Other Transaction Authority (OTA) Public Private Partnership seeks increased hypersonic materials development of ICME (Integrated Computational Materials Engineering) as a critical core competency for the Navy. LIFT has invested in and developed a significant ICME hypersonic capability and infrastructure via team projects proposing a two-pronged rapid design of advanced future generation materials and manufacturing processes for application in the time frame beyond 2025. Through initial program efforts, LIFT developed significant capability with ICME for ceramics and additively manufactured metallics subjected to hypersonic conditions. This capability will be extended to ceramic matrix composites (CMCs) produced via traditional methods.

Period of Performance: 24 months

Hypersonic Material Acceleration II – CMC Benchtop Testing

- Task 1 Team Kick-Off
- Task 2 Collaborate with LIFT and LIFT's DoD partners to down-select 1 C-SiC manufacturing process of interest to target for this effort
- Task 3 Produce C-SiC test specimens using a manufacturing process relevant to support hypersonics material model validation within program period of performance. Test specimens include coupon-level tests as well as hypersonic test specimen geometries.
- Task 4 Perform C-SiC benchtop material characterization including microstructure and mechanical properties that would be relevant to a hypersonic environment. These materials must be sufficiently characterized to support modeling for the intended hypersonic environment.
- Task 5 Collaborate with and support LIFT partner(s) responsible for C-SiC CMC ICME and hypersonic modeling
- Task 6 Final report outlining material characteristics identified via this effort



Expectation of a LIFT Project Partner

- Open to all LIFT members
 - All project consortium members must be a LIFT member in good standing for award
 - Non-members may submit proposals but must join membership as appropriate
- Regular communications/summaries to be provided by the partner, including:
 - Weekly review updates
 - Quarterly reports
 - Final Report
- Demonstration of International Traffic in Arms Regulations (ITAR) Compliance. As such, only US persons may work on this program.
- Development research is expected to be accomplished internally, without the use of subcontractors

Deliverables

- Financial Proposal
- Timing Plan
- Resource plan

Note: Responding to this Request for Proposal for services does not require the provider to be able to support the entire request. Should there be aspects that cannot be supported, simply note those on the proposal.

Submission Due Date: August 19, 2022

Submission forum: LIFT submission portal <https://lift.technology/project-calls/>

Contact Information

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