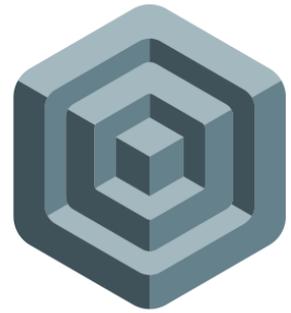


LightMAT



Lightweight Materials Consortium

Call for White Papers - Directed Funding Assistance for Collaboration with National Laboratories

Directed Funding Assistance #4 Topic: Enabling Cost Effective Lightweighting of Seats, Wheels, and Steering Knuckles

To accelerate innovation and adoption of new lightweighting technologies for on-highway vehicles, LightMAT is releasing its fourth-round opportunity for directed funding assistance (DFA), and seeks proposals that will identify key technical challenges that limit the applicant's use of lightweight materials in vehicles and the research needed to overcome these challenges.

Proposals should address specific applications for lightweighting vehicle structures and powertrain components (excluding power electronics, battery and packaging systems) that will directly benefit from an advanced material or manufacturing process to enable significant weight reduction.

Topics of Interest to this call include:

Seats

The average weight of a front seat for a mid-size sedan produced in 2015 was 22 kg, with steel as the primary structural material. Proposals for reducing the weight of seats could include material substitution and/or processing improvements for the structure, cushion, and electronic components of the seat. Materials technology should only be proposed in conjunction with the use of lightweight materials.

Wheels

The average weight of a wheel for a mid-size sedan produced in 2015 was 45.5 kg, with steel as the primary structural material. Since the size of the wheel has the greatest effect on mass, proposals should demonstrate weight reduction for a wheel size with significant market impact and provide the baseline weight for the selected size. Proposals could include material substitution and/or processing improvements for the wheel or tire. Materials technology should only be proposed in conjunction with the use of lightweight materials.

Steering Knuckles

The average weight of a steering knuckle for a mid-size sedan produced in 2015 was 7.5 kg, with cast iron as the primary material. Proposals for reducing the weight of steering knuckles could include material substitution and/or processing improvements. Materials technology should only be proposed in conjunction with the use of lightweight materials.

Who is Eligible?

All U.S. domestic businesses serving the automotive market are eligible.

Foreign entities, whether for-profit or otherwise, including U.S. incorporated subsidiaries with a foreign-owned parent company, are eligible to apply; however, a waiver request will be required. Approval of this waiver is subject to DOE discretion, and is necessary to complete the CRADA contract. All project work (100 percent) under this DFA must be performed in the United States (100 percent of all direct labor).

Interested industry partners wanting to collaborate with research experts and leverage unique materials capabilities at the U.S. Department of Energy (DOE) national laboratories are encouraged to apply.

How to Apply

To apply, industry applicants are asked to submit a proposal [project white paper](#) describing the technical materials challenge that is impeding progress towards lightweighting one of the topic components identified for this call. Additionally, applicants need to identify the LightMAT [capabilities](#) that can assist in accelerating the development of solutions. Applicants can either identify a preferred national laboratory to work with, or generally describe the type of capabilities needed, in which case, LightMAT will then recommend the most appropriate national lab(s) with the capability and experience for the proposed research.

All submissions should be no more than 12 pages total in length and should succinctly describe the technical problem, the approach to developing a solution, what LightMAT capabilities are needed, why DOE resources are necessary, and the impact anticipated towards vehicle lightweighting goals.

A template for the white-paper, along with instructions and the evaluation criteria associated with this LightMAT DFA, are available for [download](#) on the LightMAT website.

| Timeline of Round Three LightMAT Direct Funding Assistance | |
|---|---|
| <i>Date</i> | <i>Action</i> |
| March 7, 2019 | LightMAT DFA#4 announcement |
| Week of March 18, 2019 | Webinar describing LightMAT opportunity |
| May 16, 2019 (5:00 pm ET) | Proposal submission deadline |
| June 7, 2019 | Final selection decision and notification |
| July 22, 2019 | Targeted project kickoff |

All proposals will need to provide a detailed accounting to show that the new material and/or process will meet the DOE program goal of \$5/lb-saved requirement. A part [cost calculator](#) is provided to ensure a consistent comparison between proposals. However, if the results of the calculator do not agree with the industry-driven cost comparison, additional arguments with supporting data can be provided in the white paper.

All proposals should include the final target weight of the selected component/subsystem and the percent reduction from the baseline (based off of a 2015 model year mid-sized sedan).

Award Terms

Selected projects will receive up to \$500,000* of LightMAT national laboratory assistance over the project duration of 2 years or less. LightMAT anticipates a total of four funded projects as part of this DFA opportunity. Industry partners will fund their own labor, materials, and other expenses directly, which will contribute towards a 50 percent minimum cost-share requirement.

Contractual terms will be managed through a non-negotiable, pre-established LightMAT [Cooperative Research and Development Agreement](#) (CRADA).

About LightMAT

The Lightweight Materials National Laboratory Consortium, or [LightMAT](#), is a network of 11 national laboratories with technical capabilities highly relevant to lightweight materials development and utilization. LightMAT provides straightforward access to resources and capabilities in this network via a single point of contact and works to match industry research teams with expertise and equipment found only at national laboratories.

Questions?

For more information about LightMAT, please refer to the [LightMAT website](#) or contact the [LightMAT Director](#).

**Federal funds allocated to DOE national laboratories for providing LightMAT resources only, subject to available DOE and LightMAT budget. Industry cost share \geq 50 percent.*