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FOR IMMEDIATE RELEASE

Worcester startup awarded prize for advanced materials innovation in hydropower

U.S. Department of Energy (DOE) gives \$175,000 to concepts supporting advanced manufacturing in hydroelectric sector.

WORCESTER, Mass. (January 13, 2021) – An advanced materials [concept developed by Multiscale Systems](#) provides a vibration-reducing solution to a potentially catastrophic hydropower problem.

The vibration-controlling element was developed for the American-Made Challenge: Innovations in Advanced Manufacturing for Hydropower (I AM Hydro) prize, a DOE Water Power Technologies Office competition focusing on bringing new technologies to the hydropower industry. Hydropower accounts for about 7% of total energy generation¹ and 22% of renewable energy generation² in the United States, making it a significant contributor to clean energy production.

Eleven winners were announced on December 18, 2020, with Multiscale Systems winning a \$15,000 Innovator Award for its vibration dampening pad concept. This award is [the second American-Made Challenge win](#) for Multiscale Systems in 2020.

Vibrations in turbine assemblies caused by cavitation on metal surfaces, erosion from water and abrasive sediments, and general wear and tear can be mitigated by the use of pads made with mechanical metamaterials, a superior advanced structural material that utilizes geometry to create customizable, high performing products.

The dampening pads concept – called MetaTHERM-V – will reduce the amount of plant downtime due to maintenance and, if additively manufactured, could improve the cost and time associated with manufacturing replacement parts. In addition, the pads could help prevent catastrophic events like the 2009 Sayano-Shushenskaya hydroelectric plant disaster that destroyed the facility and caused 75 deaths.

Multiscale Systems' CEO, Jesse Silverberg, said, "Restoring and modernizing infrastructure is important work. We saw how our metamaterial technology could improve turbine performance and I'm proud of our team's contribution to renewable energy generation."

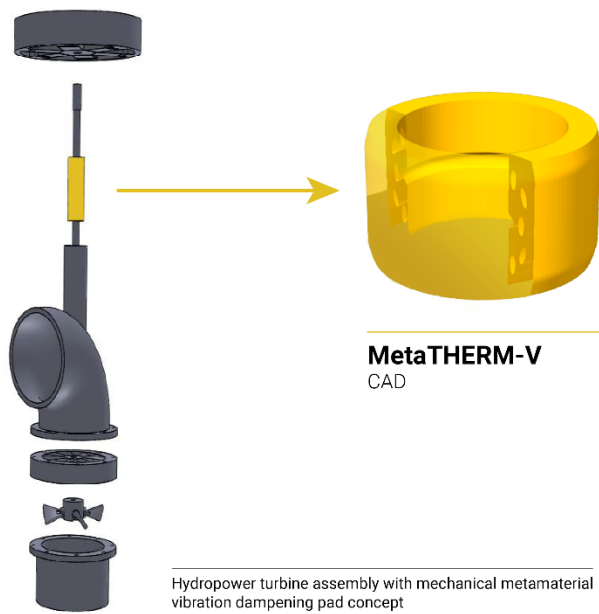
Participation in the I AM Hydro prize reinforces Multiscale Systems' commitment to sustainable technology and continued innovation within the energy sector.

About Multiscale Systems: Multiscale Systems is an advanced materials manufacturing firm that is pushing the boundaries of material design. By developing new technologies that enhance existing materials through origami-inspired geometric patterns, we create lighter, stronger, more sustainable products that will revolutionize the world of manufacturing.

Resources:

View Multiscale Systems' I AM Hydro prize video submission: <https://youtu.be/23giWiGoXjU>





1 Hydropower Explained. U.S. Energy Information Administration. Retrieved January 13, 2021, from <https://www.eia.gov/energyexplained/hydropower/>

2 U.S. energy facts explained. U.S. Energy Information Administration. Retrieved January 13, 2021, from <https://www.eia.gov/energyexplained/us-energy-facts/>

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