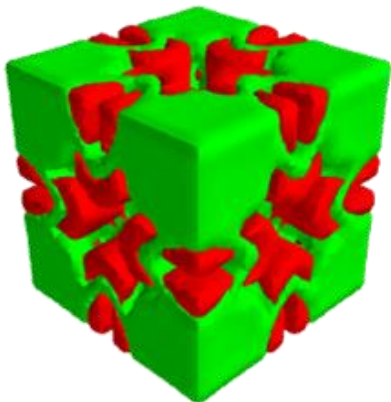


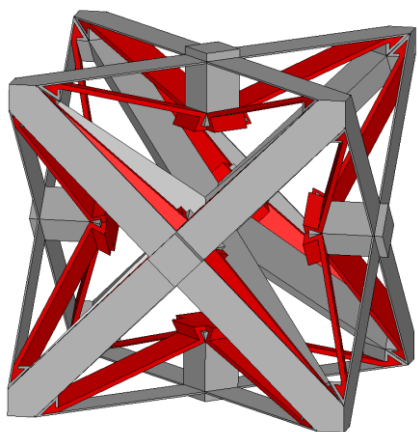
Mechanical Metamaterials: Design, Fabrication, and Performance

Dr. Christopher M. Spadaccini, spadaccini2@llnl.gov, 925-423-3185, Lawrence Livermore National Laboratory

Unit cell design

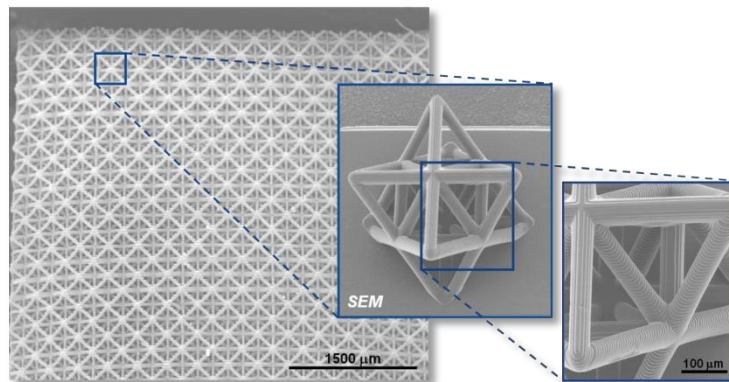


Topology optimization

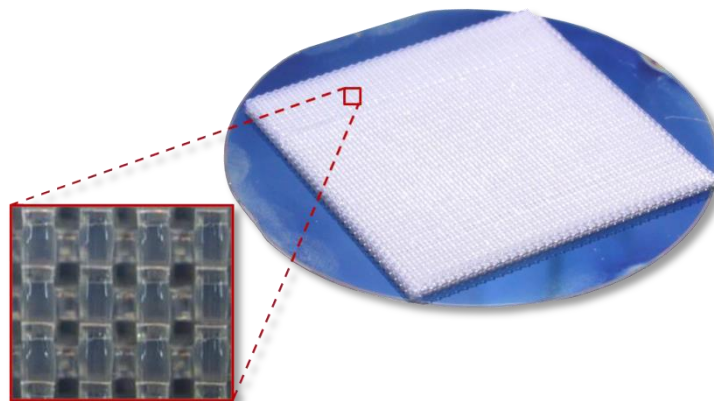


Flexure & screw theory

Additive micromanufacturing

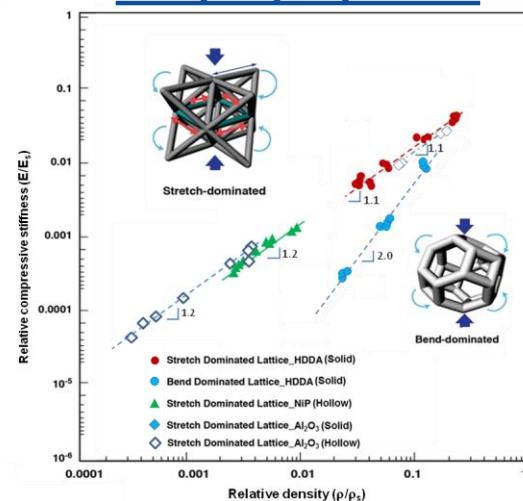


Projection microstereolithography

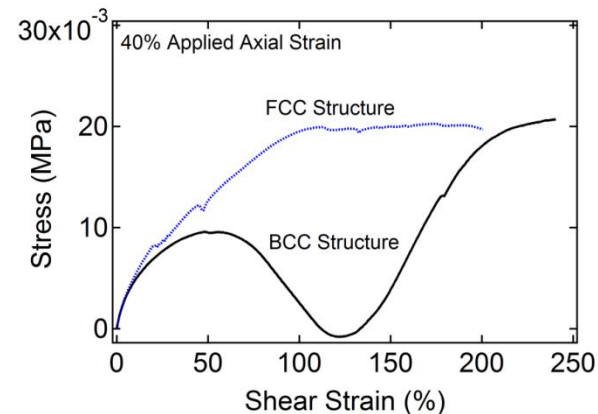


Direct ink writing

Unique properties



Ultralight, ultrastiff properties



Negative stiffness

Our comprehensive program of analytical & computational design combined with novel 3-D micro & nanomanufacturing enables mechanical metamaterials with unique properties.