

JHU DEPARTMENT OF  
MATERIALS SCIENCE &  
ENGINEERING  
PRESENTS

# FALL 2020 SEMINAR SERIES

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## ***ShaPEing the Future: Novel Structural Materials via Solid State Processing***

Conventional approaches to materials manufacturing have often relied on processing within a temperature range that results in liquid phase formation of some of the constituents. These methods are often limited by the equilibrium phase formation states available from the melt. In this work we will present findings on a recently-developed processing approach that enables complex, unique microstructural evolution (often to pervasively metastable states) while remaining in the solid phase state. Specifically, the SHear Assisted Processing and Extrusion (ShAPE) method will be highlighted via a number of vignettes from various classes of structural materials. Novel microstructural pathways, textural formation and mechanical properties will be discussed. These results point to the ability to design and engineering novel materials with unprecedented properties and performance.

Email [dmse@jhu.edu](mailto:dmse@jhu.edu) for  
Zoom meeting entry info

**Wednesday**  
**Oct. 21**  
**2:30-3:30pm**