

Abstract Submitted
for the MAR13 Meeting of
The American Physical Society

Reversible Rigidity Control Using Low Melting Temperature Alloys WANLIANG SHAN, TONG LU, CARMEL MAJIDI, Carnegie Mellon University — Inspired by nature, materials able to achieve rapid rigidity changes have important applications for human body protection in military and many other areas. This talk presents the fabrication and design of soft-matter technologies that exhibit rapid reversible rigidity control. Fabricated with a masked deposition technique, the soft-matter composite contains liquid-phase and phase-changing metal alloys embedded in a soft and highly stretchable elastomer. The composite material can reversibly change its rigidity by three orders of magnitude and sustain large deformation.

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Date submitted: 09 Nov 2012

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