

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Strain-Temperature-Transformation (STT) Diagram for Soft Solids SHOUBO LI, WENTA O XIONG, XIAORONG WANG, Chemical Engineering, Tongji University, Shanghai — Soft materials comprise a variety of physical states that are easily deformed by shear strains or thermal fluctuations. They include suspensions, colloids, polymers, foams, gels, liquid crystals, and a number of biological materials. In this contribution, a generalized strain-temperature-transformation (STT) diagram for many soft materials is presented in which the physical states encountered are related to the strain and temperature changes. The boundary defined for the solid-to-liquid transformation in the STT diagram displays a surprising Z-shaped curve. We discuss this feature with respect to the physical nature of materials.

Shoubo Li
Tongji Univ

Date submitted: 29 Oct 2015

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