

Description of Additional Supplementary Files

File Name: Supplementary Movie 1

Description: The in-situ tensile deformation process of as-spun samples. Surface morphology and slip traces could be observed.

File Name: Supplementary Movie 2

Description: LTEM video of domain walls motion with magnetic field in as-spun samples. Domain walls pinned at the boundary of the Ta-rich phase.

File Name: Supplementary Movie 3

Description: LTEM video of domain walls motion with magnetic field in 800 °C-120 min annealed samples. Smooth motion of magnetic domain walls could be observed.