Supporting Information

In situ transmission electron microscopy observation of the deformation and fracture processes of an epoxy/silica nanocomposite

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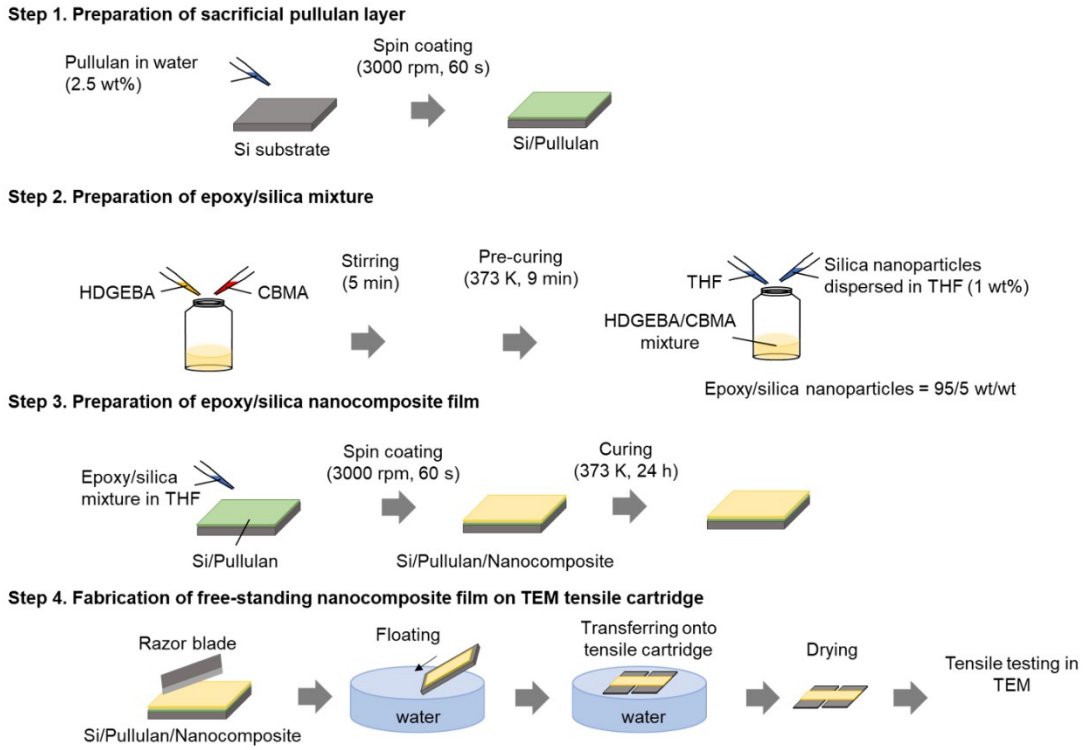

Figure S1. Preparation procedure of free-standing epoxy/silica nanocomposite thin film for *in situ* tensile test in TEM.

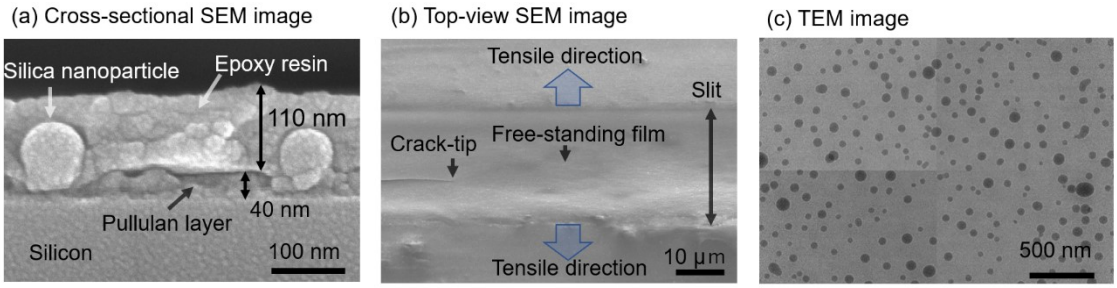

Figure S2. Electron microscopy images of the nanocomposite thin film: (a) Cross-sectional SEM image of a nanocomposite film on silicon/pullulan substrate; (b) Top-view SEM image of a free-standing nanocomposite film with a pre-existing crack attached on tensile cartridge; (c) TEM image of a free-standing nanocomposite thin film.

Movie S1. A 2 min 7 sec length movie at 4× speed of the deformation and fracture process of an epoxy/silica nanocomposite film under tensile strain observed using transmission electron microscopy. Scale bar: 1 μm.