

## **Description of Additional Supplementary Files**

File Name: Supplementary Movie 1

Description: Combined raw and reconstructed TEM tomography of a 14 nm GP-NP/calcite crystal.

File Name: Supplementary Movie 2

Description: Serial sectioning SEM using FIB milling through an entire calcite crystal containing 14 nm PGMA-NPs.

File Name: Supplementary Movie 3

Description: Combined raw and reconstructed STEM tomography of a 14 nm PGMA-NP/calcite crystal.

File Name: Supplementary Movie 4

Description: Raw STEM tilt series of a 4 nm PGMA-NP/calcite crystal.