

## **Description of Additional Supplementary Files**

**Supplementary Movie 1:** Nanomanipulation of diverse colloidal particles with different sizes.

**Supplementary Movie 2:** Manipulation of TiO<sub>2</sub> nanoparticles on CTAC layer with and without AuNIs substrate.

**Supplementary Movie 3:** In-plane launch of a 200 nm AuNP with an optical power of 2.7 mW.

**Supplementary Movie 4:** Manipulation of a 200 nm AuNP on a thin layer of SDS.

**Supplementary Movie 5:** Power-dependent velocity measurement for 300 nm AuNPs. The white “+” indicates the original positions of AuNPs.

**Supplementary Movie 6:** Dynamic rotation and translation of AuNWs.