Supporting Information for

In-Situ Observation of Coulomb Fission of Individual Plasmonic Nanoparticles

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This PDF file includes:

Captions for Movies 1-3

Figure S1

Other supporting materials for this manuscript:

Movies 1-3

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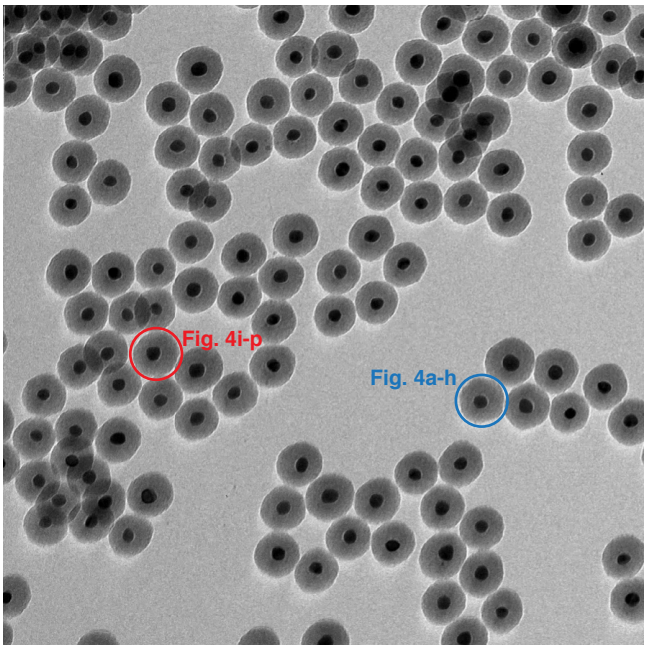
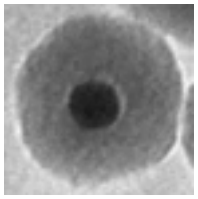
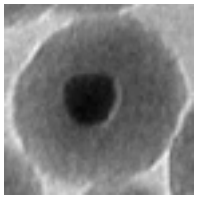


Movie 1. *In-situ* observation of the formation of aligned dual-core particles. The movie frames have intervals of 1 s and the duration of the movie is 146 s. The blue and red circles denote the gold-core silica shell nanoparticles that are displayed in Fig. 4a-h and Fig. 4i-p of the main text, respectively.



Movie 2. *In-situ* observation of the gold-core silica shell nanoparticle from Fig. 4a-h. The frame intervals and duration of the movie are the same as those of Movie 1. Particularly, we note that the shapes of the cores fluctuate under laser irradiation.



Movie 3. *In-situ* observation of the gold-core silica shell nanoparticle from Fig. 4i-p. The frame intervals and duration of the movie are the same as those of Movie 1. Particularly, we note that the shapes of the cores fluctuate under laser irradiation.

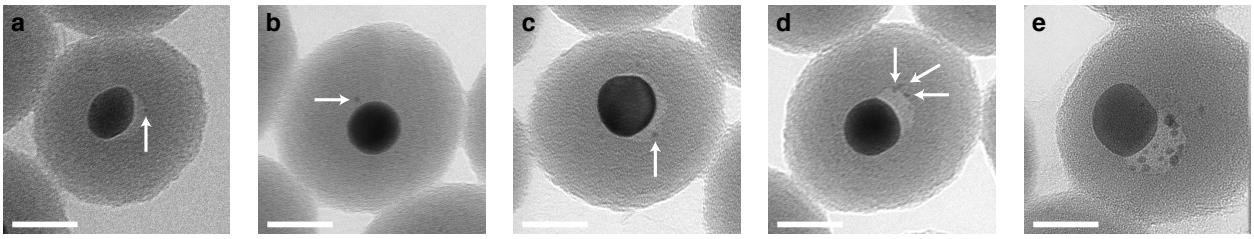


Figure S1. High resolution micrographs of progeny particles. (a-e) Gold-core silica shell nanoparticles were irradiated with femtosecond pulses (20 mJ/cm^2, 20 kHz) until a small number of progeny droplets were emitted. Subsequently, the particles were imaged without laser irradiation. The diameters of the emitted particles in (a-c) are 0.7 nm, 1.4 nm, 1.5 nm, respectively. In (d) the diameters of the particles are between 1.6-1.8 nm. The larger particles observed in (e) are likely the result of progeny droplets which have coalesced into larger particles. Scale bars, 20 nm.