Electronic Supplementary Information

Formation of Rh frame nanorods by using Au nanorods as sacrificial template

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Fig. S1. Au@Rh NRs and Rh nanoframes obtained at an ascorbic acid concentration of 2.3 mM.
Fig. S2. Au@Rh NRs and Rh nanoframes obtained at a CTAB concentration of 3M.
Fig. S3. High-resolution TEM image of Rh nanoframe obtained after 12 h.
**Fig. S4.** Time evolution of plasmon resonance band of Au NRs in the presence of CTAB after the addition of HCl.
Fig. S5. TEM images of Rh nanoframes observed from view angles of (a) 0°, (b) 40°, (c) observed by side view of nanoframe, (d) structure of Rh nanoframe.
Fig. S6. Time evolution of plasmon resonance band of decahedral Au nanoparticles in the presence of CTAB after the addition of HCl.
Fig. S7. XRD patterns of decahedral Au@Rh particles. Red lines shows standard positions of Rh peaks.