Supporting Information for

High-index Facets and Multidimensional Hotspots in Au-Decorated 24-faceted PbS for Ultrasensitive and Recyclable SERS Substrates

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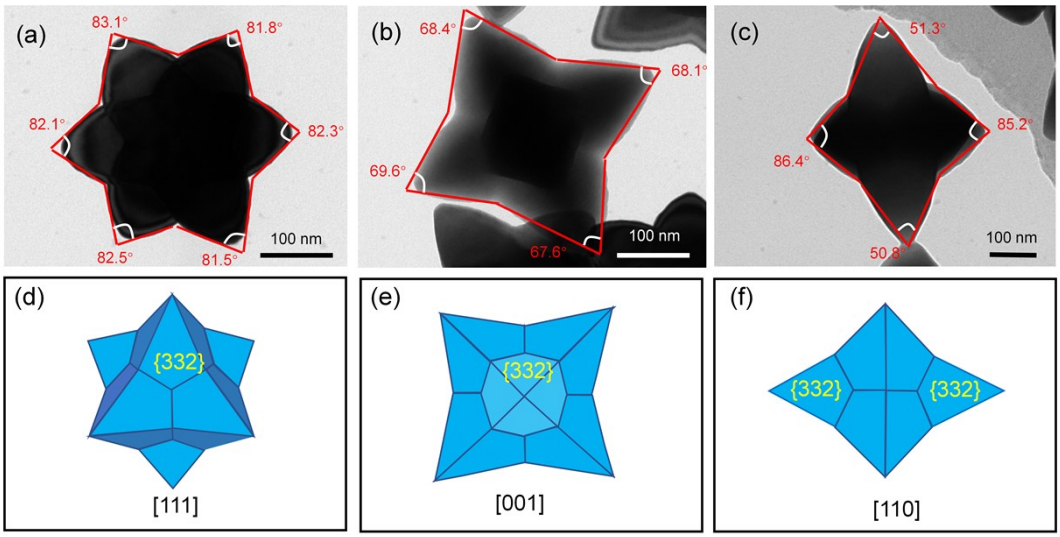

Figure S1. TEM images of the 24-faceted PbS at the [111] (a), [001] (b), and [110] (c) orientations. (d-f) The corresponding schematic motifs of PbS at different crystal orientations.

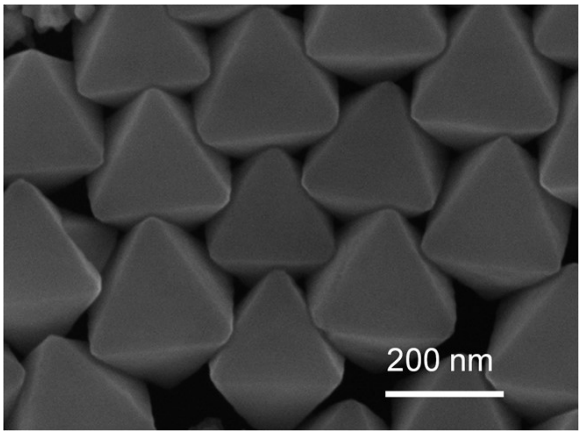

Figure S2. SEM image of 8-faceted PbS.

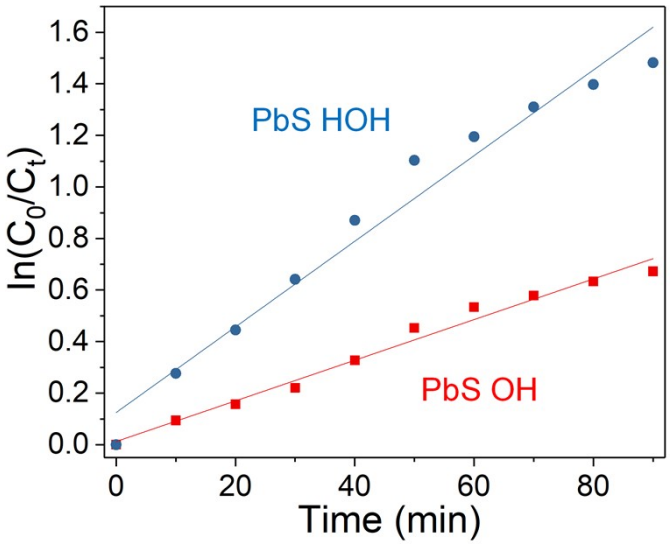

Figure S3. Logarithm of the absorption at 552 nm vs reaction time in the presence of 8- and 24- faceted PbS.

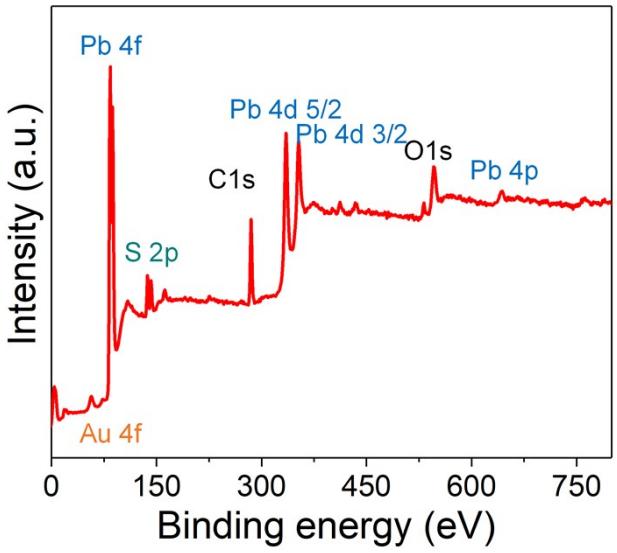

Figure S4. XPS survey of PbS-Au hybrids.

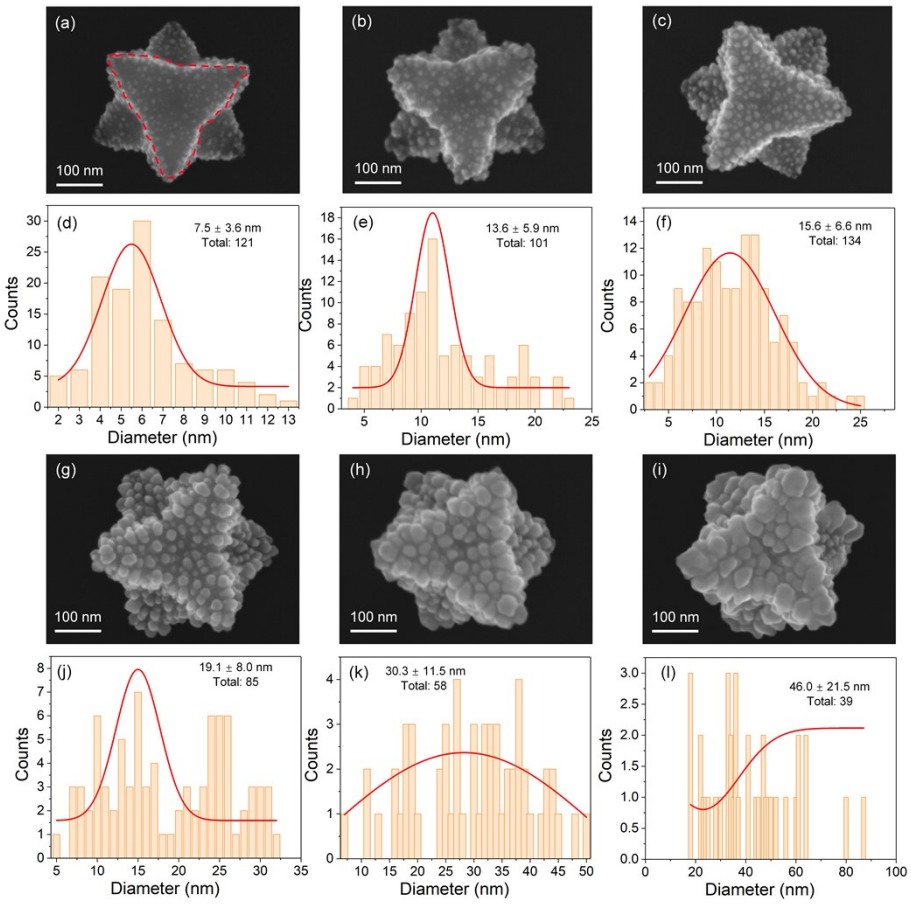

Figure S5. SEM images and size distributions of Au nanoparticles for PbS-Au hybrids prepared with adding 20 (a, d), 40 (b, e), 60 (c, d), 100 (g, j), 200 (h, k), 600 (i, l) μL of chloroauric acid.

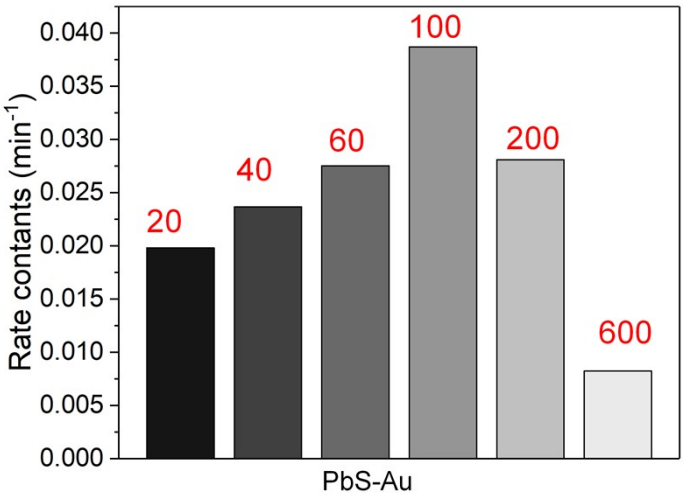

Figure S6. Comparison of photocatalytic activity of PbS-Au hybrids with loading different amount of Au nanoparticles.

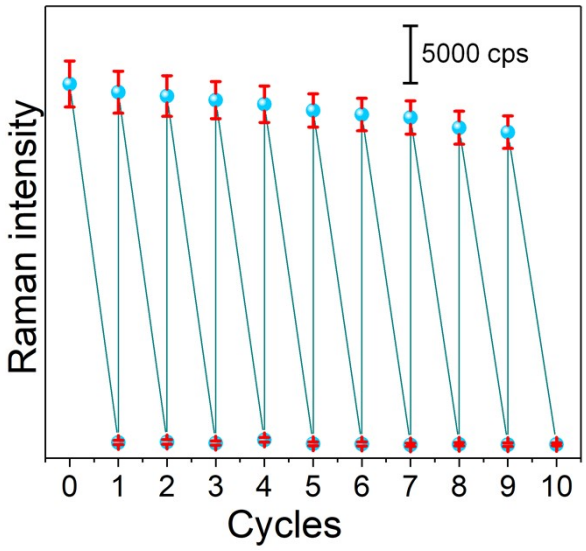

Figure S7. Raman intensities at 1647 cm^{-1} of RhB during the 10 repeated measurements under visible light irradiation.

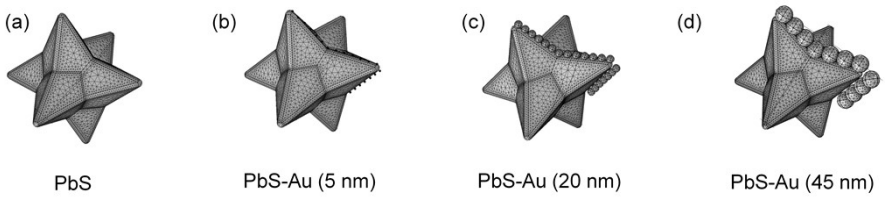

Figure S8. 3D models and meshes of 24-faceted PbS and PbS-Au hybrids with loading different size of Au nanoparticles.