

Electronic Supplementary Information

Bimetallic nanodendrites via selective overgrowth of noble metals on multiply twinned Au seeds

Yan Feng,^{†‡} Hui Liu^{†‡} and Jun Yang^{*†}

[†]State Key Laboratory of Multiphase Complex Systems, Institute of Process Engineering, Chinese Academy of Sciences, Beijing, China 100190. Fax: 86-10-8254 4915; Tel: 86-10-8254 4915; E-mail: jyang@mail.ipe.ac.cn

[‡]University of Chinese Academy of Sciences, No. 19A Yuquan Road, Beijing, China 100190

Financial support from the 100 Talents Program of the Chinese Academy of Sciences, National Natural Science Foundation of China (No.: 21173226, 21106151), and State Key Laboratory of Multiphase Complex Systems, Institute of Process Engineering, Chinese Academy of Sciences (MPCS-2012-A-11, MPCS-2011-D-08, MPCS-2010-C-02) is gratefully acknowledged.

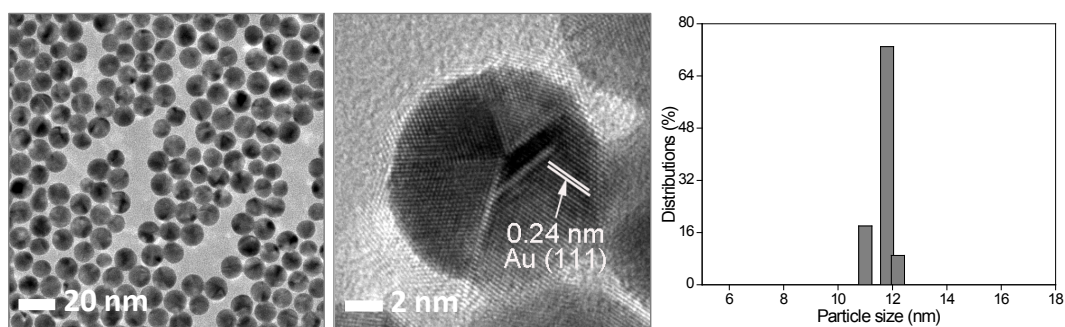


Fig. S1 (a)TEM image, (b) HRTEM image, and (c) size distribution of as-prepared Au nanoparticles, average diameter (d) = 11.4 nm, standard deviation (σ) = 0.72 nm, relative standard deviation ($\bar{\sigma}$) = 6.3%.

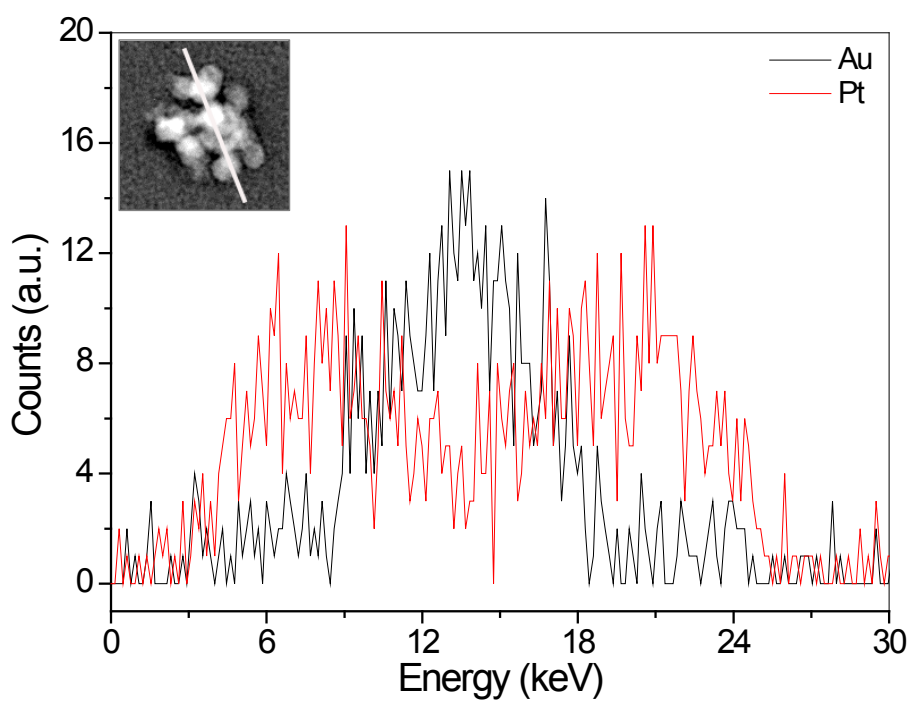


Fig. S2 EDX line scan across the inserted Au-Pt dendritic particle showing atomic composition (Au-black, Pt-red) as a function of the position across the particle.

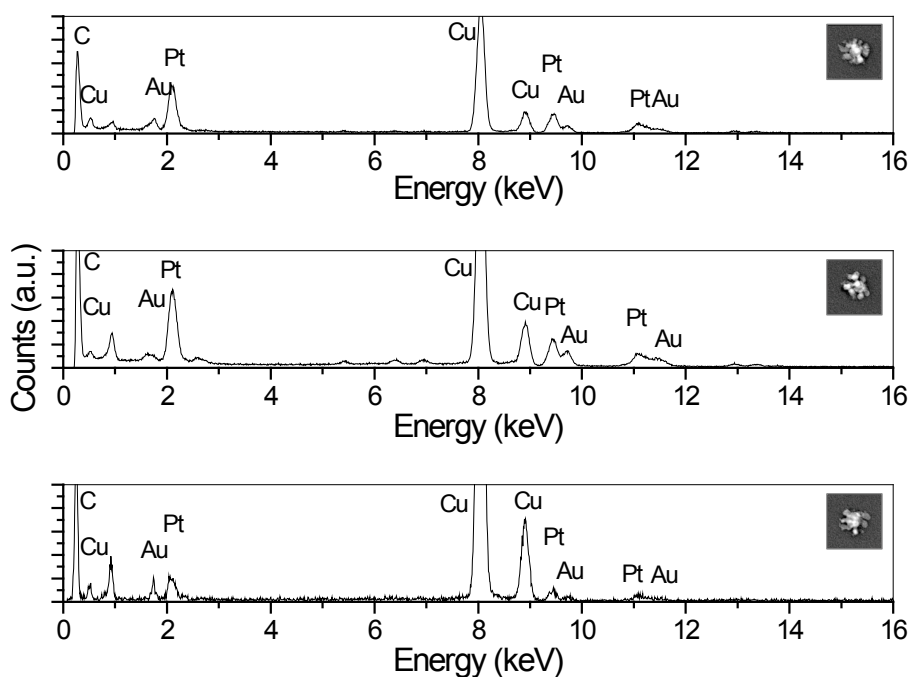


Fig. S3 The STEM-EDX spectra of three individual dendritic Au-Pt nanoparticles showing the absence of isolated Au or Pt structures in the final heterogeneous bimetallic products.

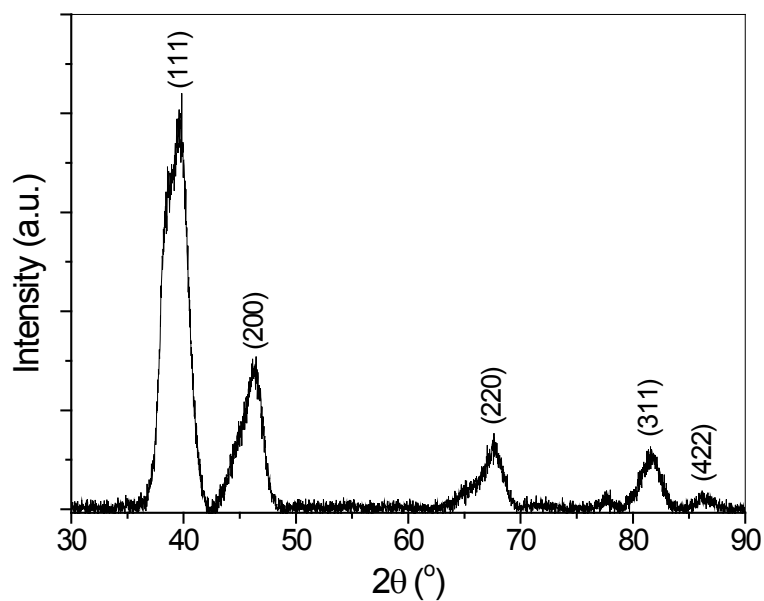


Fig. S4 X-ray diffraction (XRD) pattern of the bimetallic Au-Pt nanodendrites showing the particles have well-developed crystallinity.

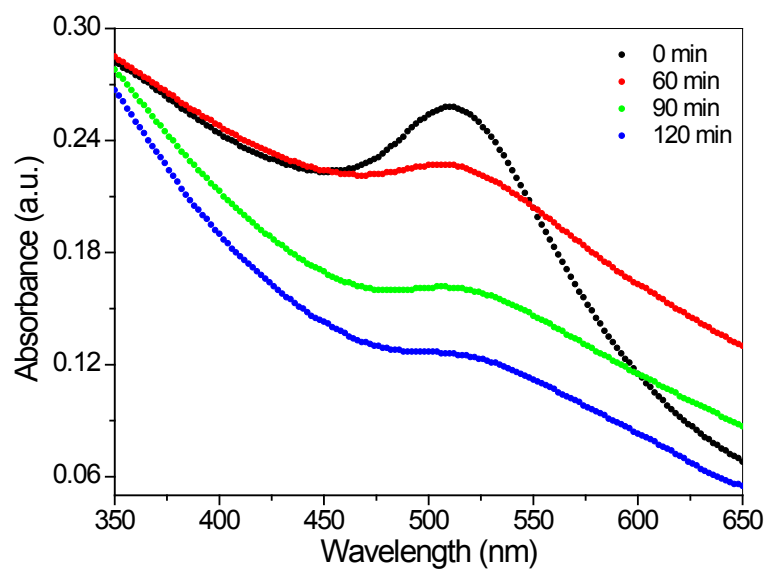


Fig. S5 UV-vis spectra of the bimetallic Au-Pt nanoparticle solution collected at different reaction time, showing the growth process of the dendritic Au-Pt nanoparticles.

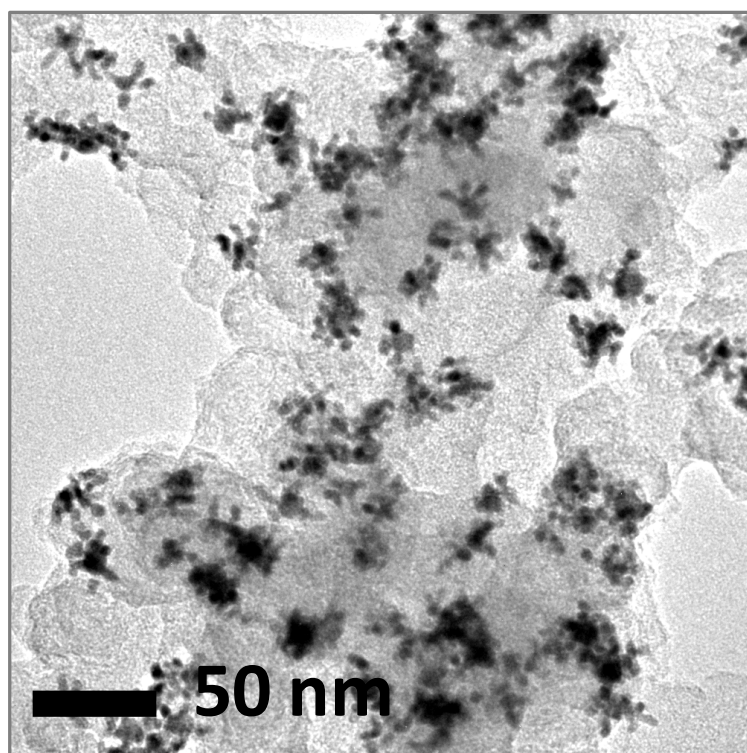


Fig. S6 Representative TEM image of bimetallic Au-Pt nanodendrites loaded on Vulcan carbon support.