

## Supporting Information

*for*

### **Bimetallic Core-Shell Nanoparticle Arrays at Liquid-Liquid Interface for In Situ Degrading and Monitoring Dye Pollutants by Surface-enhanced Raman Spectroscopy**

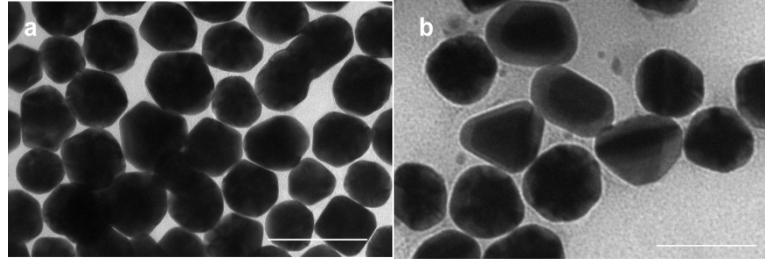
Yujiao Wei<sup>1#</sup>, Jinhu Guo<sup>2#</sup>, Cheng Qu<sup>2</sup>, Yuchuang Geng<sup>2</sup>, Wuji Zhang<sup>1</sup>, Mengke Su<sup>2,3\*</sup>, Shengnan He<sup>1\*</sup>, and Honglin Liu<sup>2</sup>

<sup>1</sup>Institutes of Physical Science and Information Technology, Anhui University, Hefei 230601, P. R. China

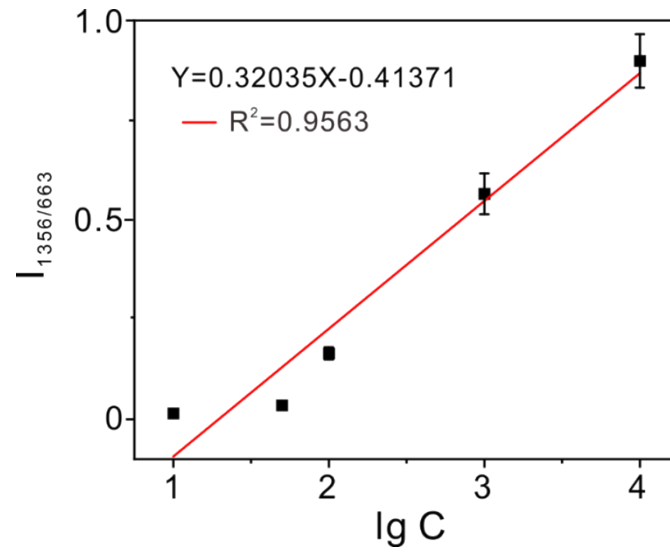
<sup>2</sup>China Light Industry Key Laboratory of Meat Microbial Control and Utilization, School of Food and Biological Engineering, Engineering Research Center of Bio-process, Ministry of Education, Hefei University of Technology, Hefei 230009, P. R. China

<sup>3</sup>State Key Laboratory of Tea Plant Biology and Utilization, Anhui Agricultural University, 130 Changjiang West Road, Hefei, Anhui 230036, China

\*Corresponding Author E-mail: [heshengnan@ahu.edu.cn](mailto:heshengnan@ahu.edu.cn), [sumengke555@163.com](mailto:sumengke555@163.com)



**Figure S1.** The transmission electron microscope (TEM) image of Au<sub>50</sub>NPs(a) and Au<sub>50</sub>@Ag<sub>10</sub>NPs(b).



**Figure S2.** Statistical analysis of the Raman signal at 1356 cm<sup>-1</sup> for CV.

**Table S1.** Experimentally observed Raman bands of MB with the corresponding assignments.

Vibration modes	Characteristic peaks(cm <sup>-1</sup> )
Skeletal deformation	588
-	766
-	858
-	881
In-plane bending	1037
-	1322
In-plane ring deformation	1392
Ring-stretching	1617

**Table S2.** Experimentally observed Raman bands of CV with the corresponding assignments.

Vibration modes	Characteristic peaks(cm <sup>-1</sup> )
Ring-bend	721
Ring skeletal vibration	910
Phenyl stretching	1356
Phenyl stretching	1386
Ring stretching and bending	1584
Ring stretching	1617