

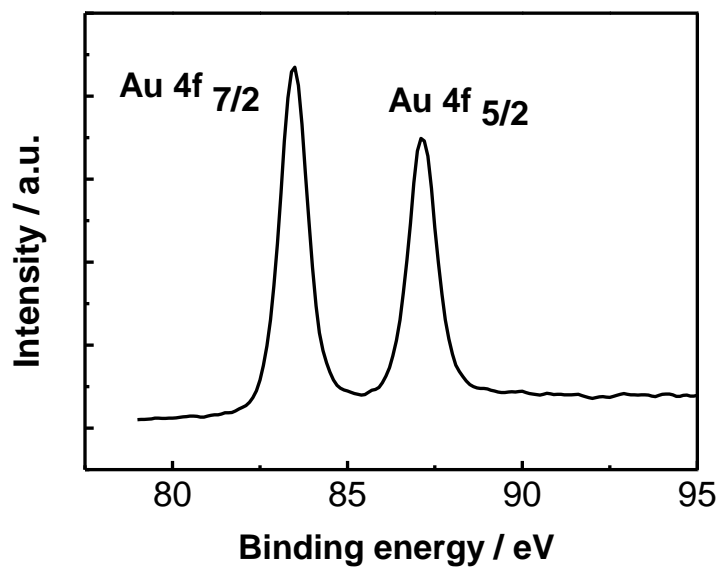
## Supporting Information

### **Caffeine assisted one-step synthesis of flower-like gold nanochains and their catalytic behaviors**

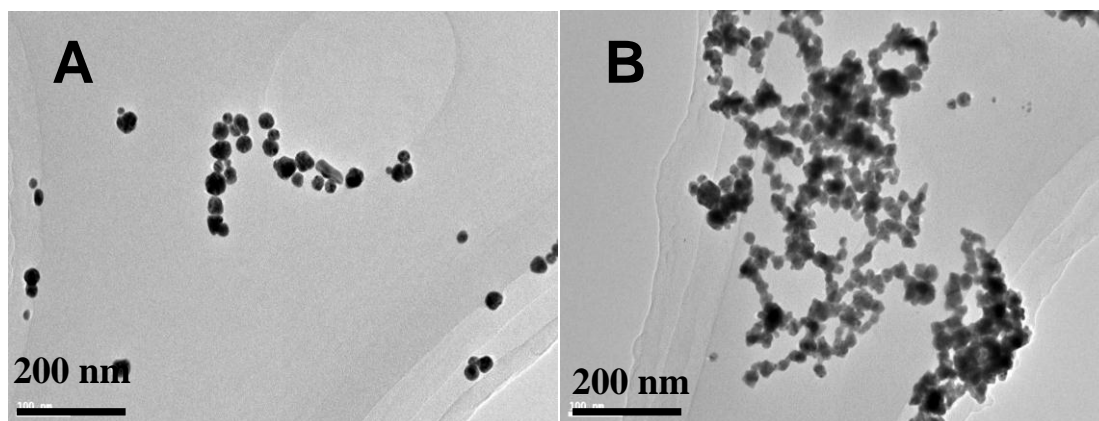
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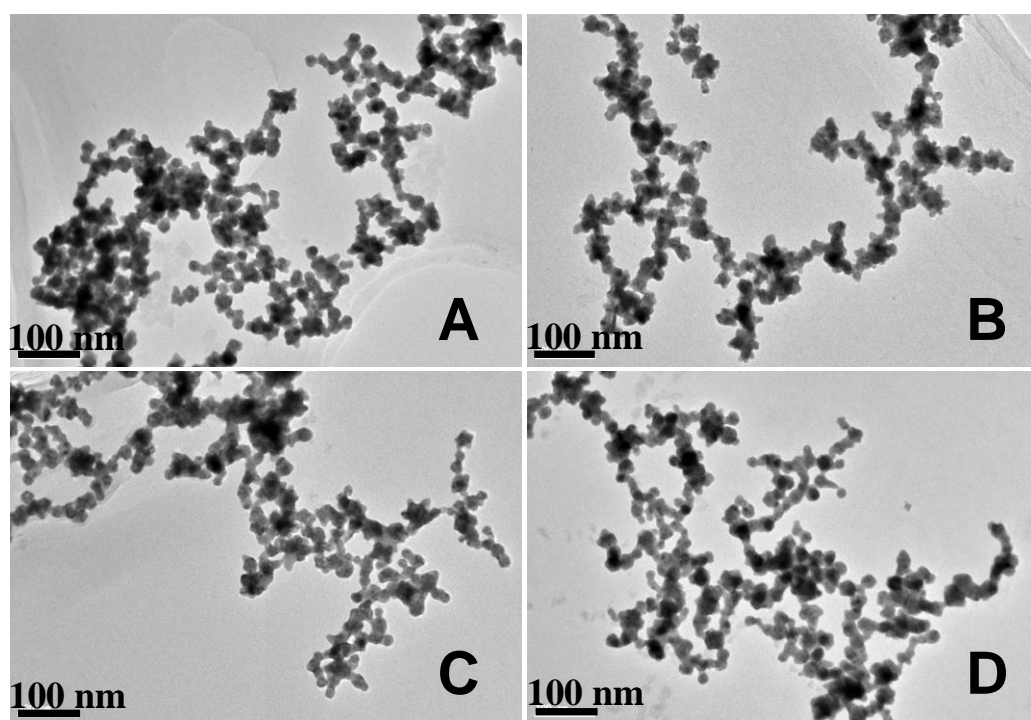
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**Figure S1** XPS spectra of Au from the flower-like gold nanochains.

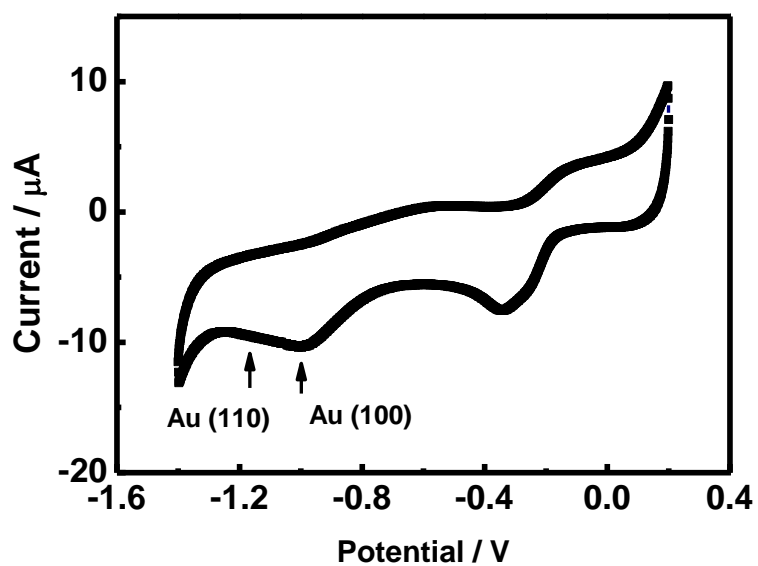


**Figure S2** TEM images of the products obtained using ascorbic acid (A) and  $\text{NaBH}_4$  (B) as reducing agents.



**Figure S3** TEM images of the products obtained with different amounts of hydrazine:

20  $\mu\text{L}$  (A), 40  $\mu\text{L}$  (B), 100  $\mu\text{L}$  (C), and 150  $\mu\text{L}$  (D).



**Figure S4.** Cyclic voltammograms of caffeine adsorbed on the flower-like Au nanochains modified electrode in a 0.5 M KOH solution at  $50 \text{ mV s}^{-1}$ .