

***In situ* green synthesis of Au nanoparticles onto polydopamine-functionalized graphene for catalytic reduction of nitrophenol**

Jing Luo*, Nan Zhang, Ren Liu and Xiaoya Liu*

The Key Laboratory of Food Colloids and Biotechnology, Ministry of Education, School of

Chemical and Material Engineering, Jiangnan University, Wuxi, Jiangsu, China 214122

*Corresponding author. Tel: Telephone: 86-510-85917763. Fax: 86-510-85917763. E-mail: jingluo19801007@126.com (J.Luo); lxy@jiangnan.edu.cn (X.Liu).

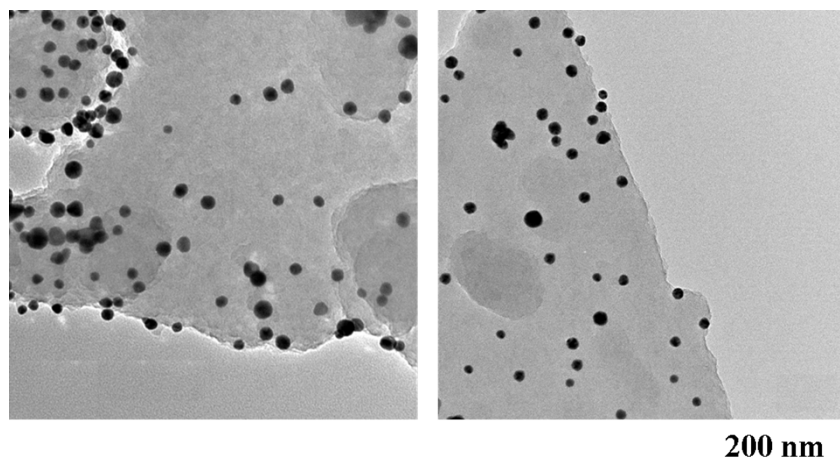


Fig. S1 TEM images of graphene/PDA-Au₂ nanocomposites before (left) and after (right) the catalytic reaction.

Table S1. Comparison of catalytic activity by Au based nanocatalysts for the reduction of 4-nitrophenol

Catalyst	Moles of 4-NP	Required time	Au content	TOF	reference
Au-ECCG-CF	1umol	30min	1umol	0.033min ⁻¹	8
Yolk-double shell SiO ₂ @Fe ₃ O ₄ -C@Au	0.5umol	3.3min	8.63×10 ⁻³ umol	17.4min ⁻¹	16
Au-PMMA	1.35umol	10min	8.8×10 ⁻² umol	1.53min ⁻¹	47
Au@hollow silica	0.24umol	25min	2×10 ⁻¹ umol	0.048min ⁻¹	48
Fe ₃ O ₄ @PDA-Au Yolk-shell	0.85umol	19min	1.09×10 ⁻² umol	4.1min ⁻¹	49
Dumbbell-like Fe ₃ O ₄ -Au	0.4umol	10min	1.9umol	0.02min ⁻¹	50
Fe ₃ O ₄ @SiO ₂ -Au@mSiO ₂	0.5umol	15min	3.35×10 ⁻¹ umol	0.1min ⁻¹	51
Fe ₃ O ₄ @SiO ₂ -LBL-Au	0.5umol	15min	2.48×10 ⁻³ umol	13.4min ⁻¹	52
Au/graphene hydrogel	0.28umol	12min	1.2×10 ⁻¹ umol	0.19min ⁻¹	53
graphene/PDA-Au NPs	1umol	13min	2×10 ⁻¹ umol	0.38min ⁻¹	This work