

**多级结构 Ni@CuS 复合物的合成及在提高催化还原 4-硝基
苯酚性能方面的应用**

马亦然 周 苇* 曹 薇 郑金龙 郭 林

(北京航空航天大学化学与环境学院, 北京 100191)

**Preparation of Hierarchical Ni@CuS Composites and the
Application of the Enhanced Catalysis for 4-Nitrophenol Reduction**

MA Yi-Ran ZHOU Wei* CAO Wei ZHENG Jin-Long GUO Lin

(School of Chemistry and Environment, Beihang University, Beijing 100191, P. R. China)

*Corresponding author. Email: zhouwei@buaa.edu.cn; Tel: +86-10-82316066.

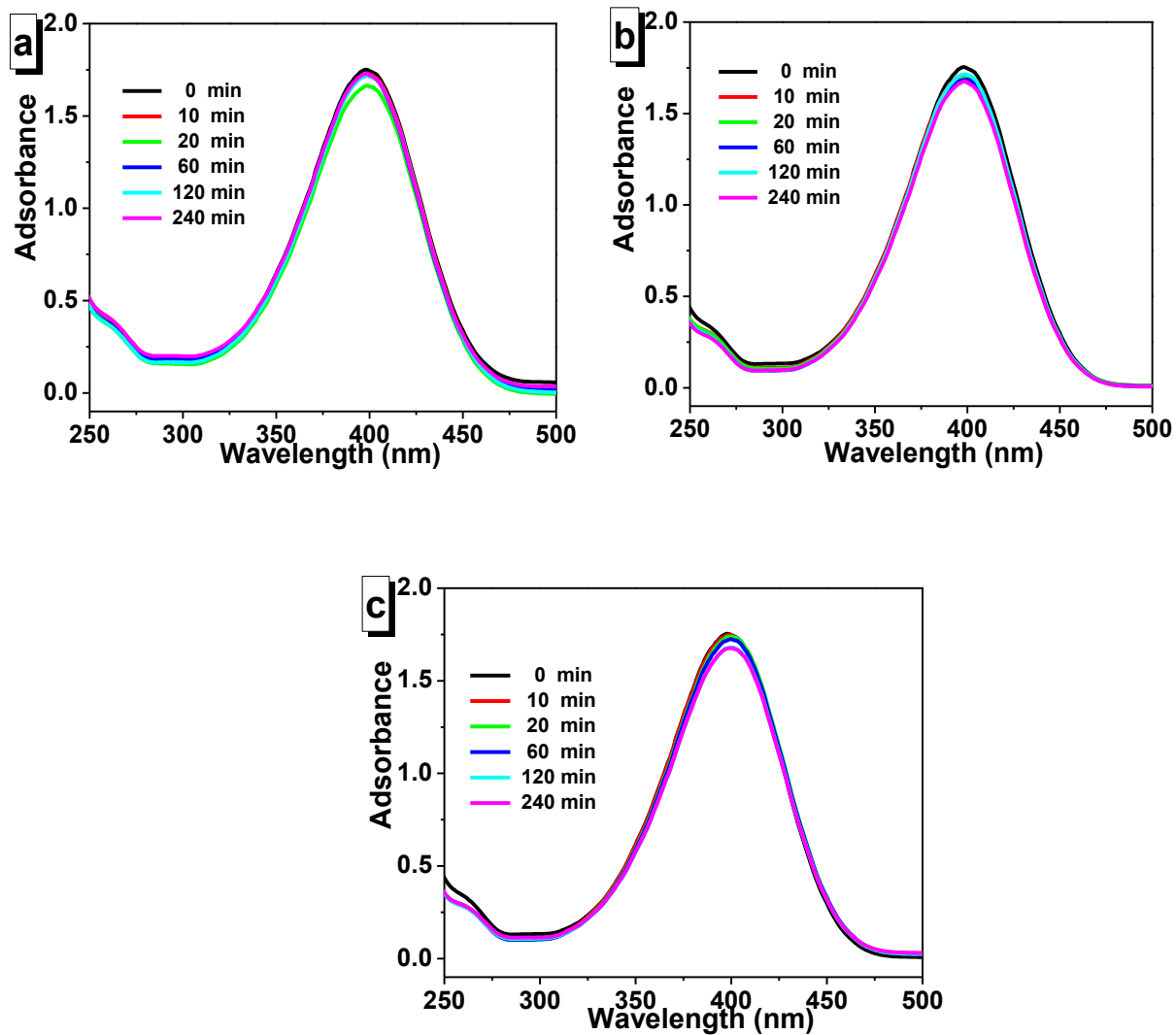


Fig.S1 Time-dependent evolution of UV-Vis spectrums showing the catalytic reduction of 4-Nph to 4-Aph by (a) SUB1, (b) SUB2, (c) SUB3

Synthesis of Ni NPs: 0.1 mmol of $\text{NiCl}_2 \cdot 6\text{H}_2\text{O}$ was dissolved in 50 mL of EG at room temperature, to which 1 mL of hydrazine hydrate was added under stirring. Then, the solution was heated in an oil bath at 140 °C for 30 min. The prepared nickel sample was used as catalysts for comparison in the reduction of 4-nitrophenol and the transfer of the I^-/I_3^- redox couple.

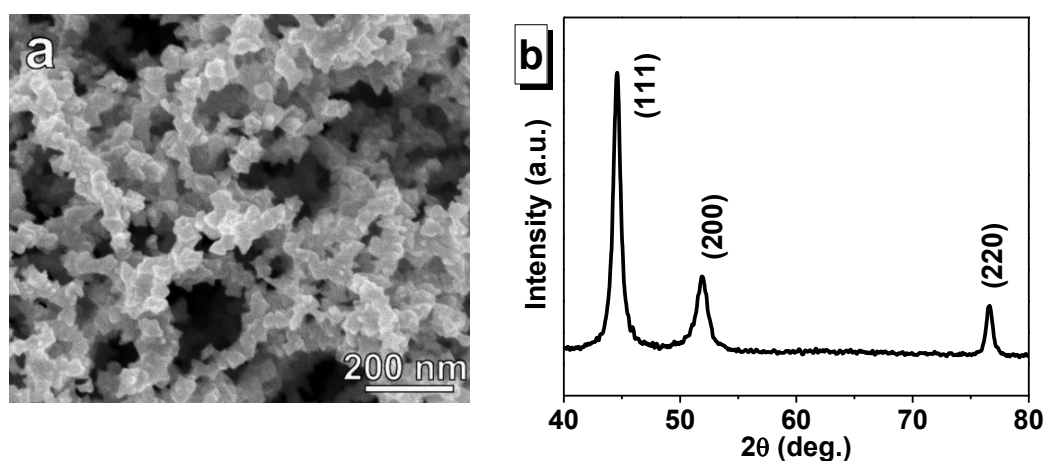


Fig.S2 (a) SEM image of Ni NPs, showing an average diameter of ~40 nm. (b)

XRD pattern of Ni NPs, in accordance with the cubic nickel (JCPDS No.

04-0850)

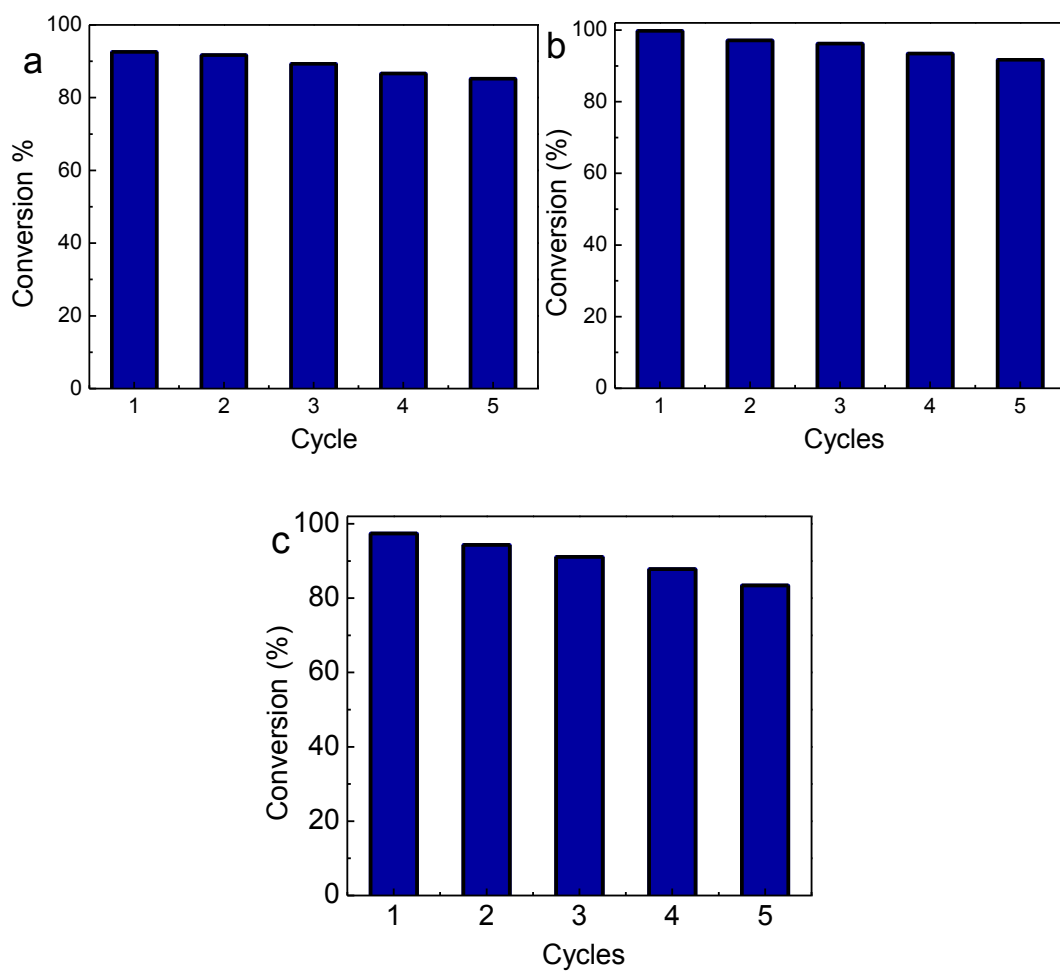


Fig.S3 Reusability of Ni@SUBs catalysts