

Cytochrome c covalently immobilized on mesoporous silicas as a peroxidase:

Orientation Effect

Kun-Che Kao,^a Chia-Hung Lee,^a Tien-Sung Lin,^{*b} and Chung-Yuan Mou^{*a}

^aDepartment of Chemistry, National Taiwan University, Taipei, Taiwan 106

^bDepartment of Chemistry, Washington University, St. Louis, MO 63130 USA

*Corresponding authors: TSL: Fax: 314-935-4481; E-mail: lin@wustl.edu

CYM: Fax: +886-2-23660954; E-mail: cymou@ntu.edu.tw

Supplementary Information

(1) Thermogravimetric analysis of the IBN4 and surface modified IBN4

The densities of the crosslinkers modified on the surface of IBN4 are quantified by thermogravimetric analysis (TGA). Fig. S1 displays the TGA data of the IBN4 and surface modified IBN4 samples. The weight loss of bare IBN4 sample was attributed to the adsorbed water and silanol condensation of the silica surface. The weight losses of the functionalized samples were attributed to the loss of organic groups conjugated on the IBN4 silica surface during heating process. Data are tabulated in Table S1.

(2) Immobilization curves as a function of time of samples.

Fig. S2 displays the immobilization curves of cyt *c*. During the immobilization process, the solution phase of cyt *c* was determined by measuring the supernatants of the IBN4 / cyt *c* mixtures at each specific time. The non-covalent bonding of cyt *c* was washed out by 1 M KCl solution. The loading of cyt *c* in all the three samples were almost finished within 30 min.

Fig. S1 TG analysis of samples (a) IBN4, (b) IBN4-N, (c) IBN4-N-GAC, (d) IBN4-N-SMP, and (e) IBN4-N-GAH.

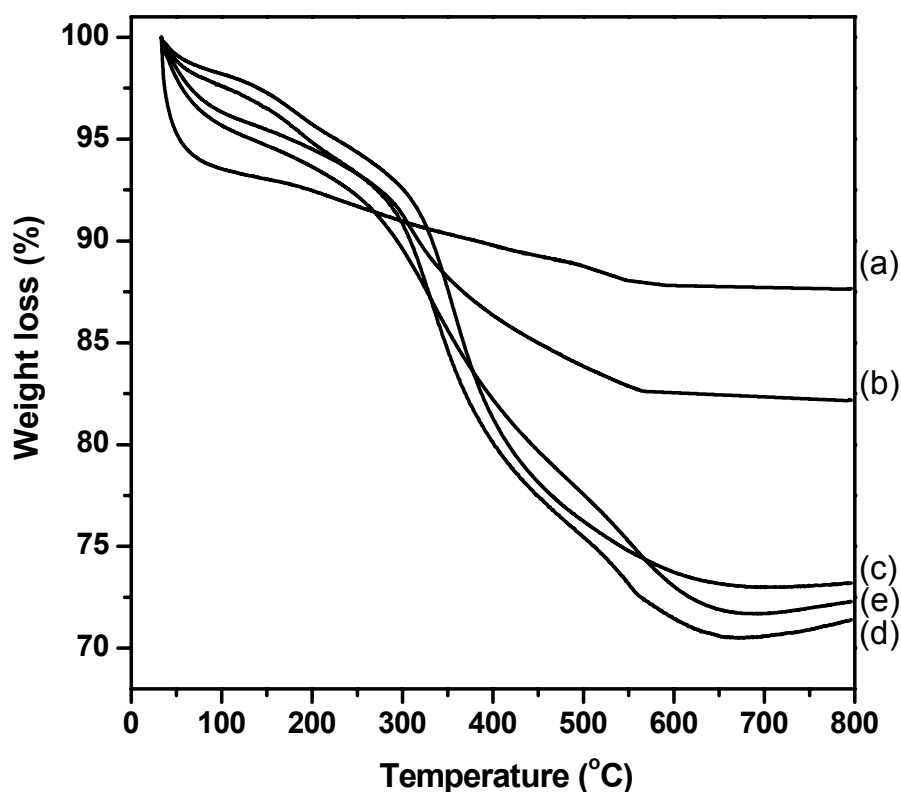


Table S1 Weight loss of the IBN4 and surface modified IBN4 samples.

Sample	Weight loss (%)	Organic group
IBN4	5.81 %	-
IBN4-N	8.29 %	aminopropyl
IBN4-N-GAC	10.85 %	GAC
IBN4-N-SMP	12.98 %	SMP
IBN4-N-GAH	9.78 %	GAH

Fig. S2 Immobilization curves of cyt c in (a) IBN4-N-GAC, (b) IBN4-N-SMP, and (c) IBN4-N-GAH.

