

Supporting Information

SiO₂-Coated Molecularly Imprinted Copolymer Nanostructures for the Adsorption of Bisphenol A

*Kae-Zheng Chin and Sue-min Chang**

Institute of Environmental Engineering, National Chiao Tung University, 1001, University Road,
Hsinchu, 30068, Taiwan

*Corresponding Author: E-mail: chang@mail.nctu.edu.tw; Tel: +886-3-5712121 ext. 55506; Fax:
+886-3-5725958.

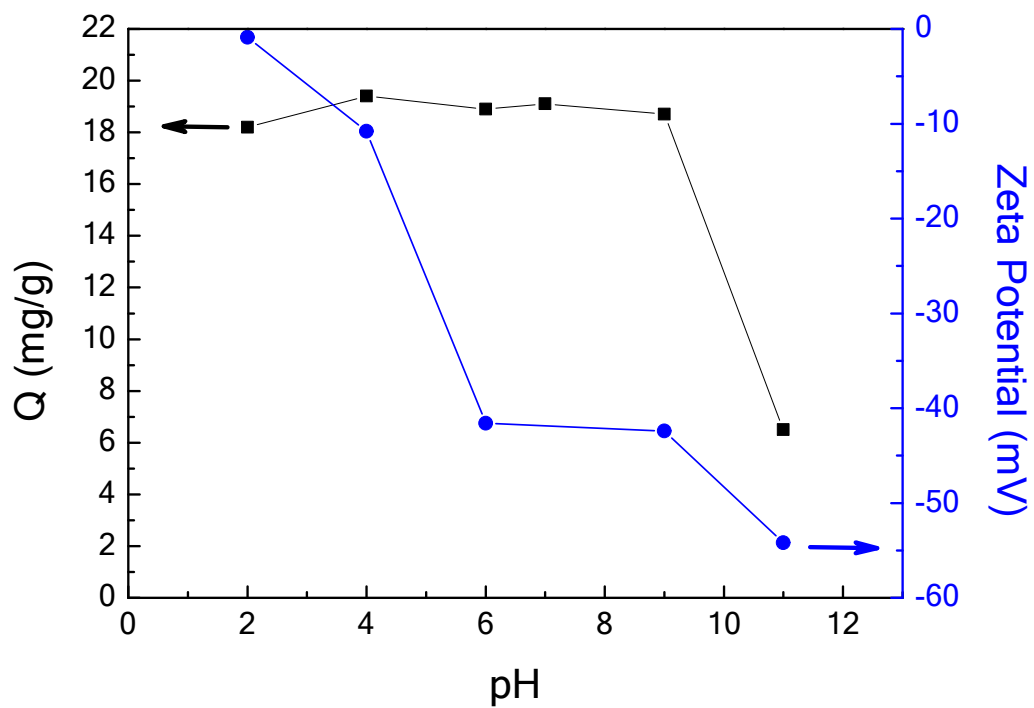


Figure S1. BPA adsorption ability (■) and zeta potentials (●) of the MIH compound in the aqueous phase under different pH values.

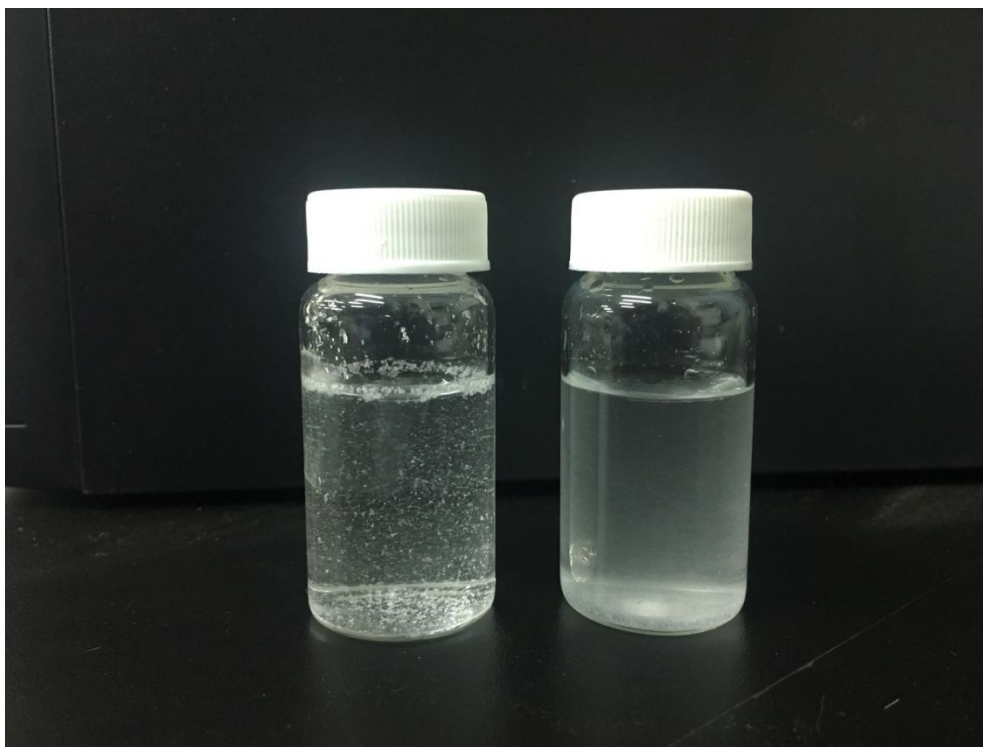
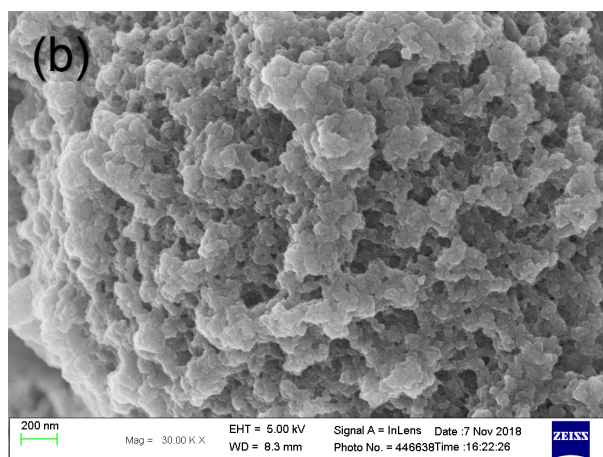
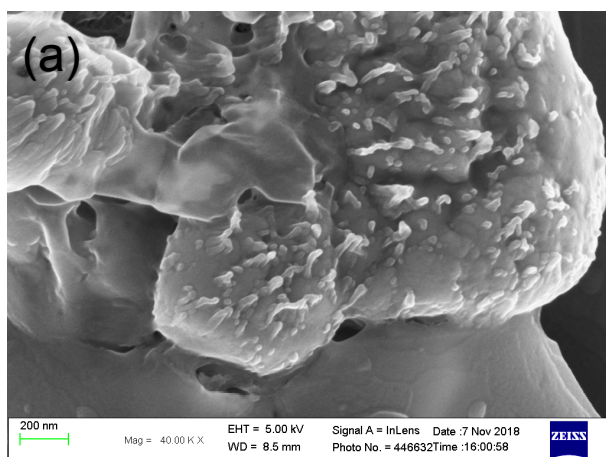


Figure S2. Digital images of styrene-co-MMA polymer (left) and MIH suspensions (right) in the DI water.



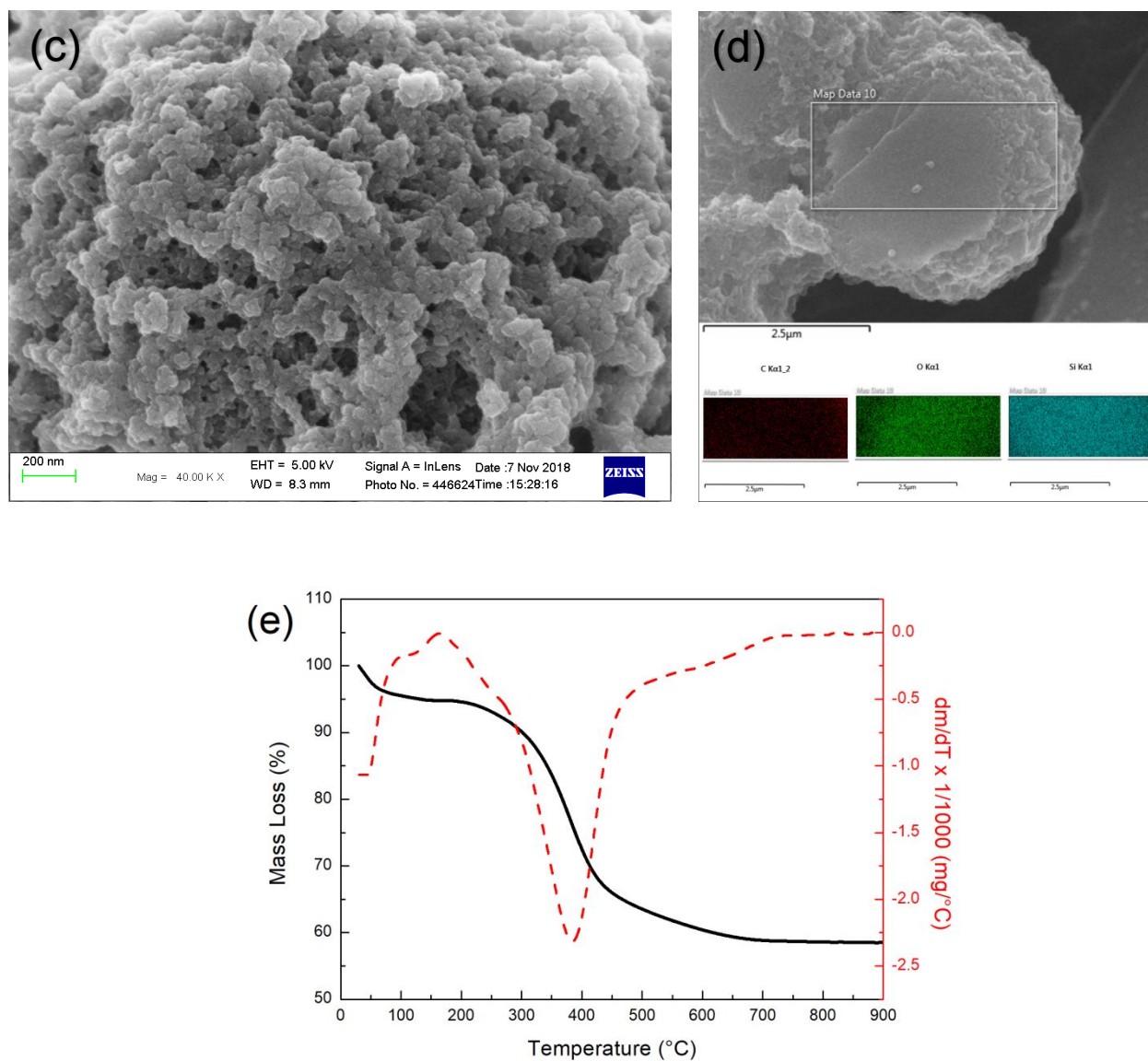


Figure S3. SEM images of styrene-co-MMA polymer (a) before and (b) after coating with SiO₂ layer. (c) SEM image, (d) elemental mapping, and (e) TG curve of NIH powder. The TGA was carried out at an oxygen flow of 40 mL/min with a heating rate of 10°C/min.

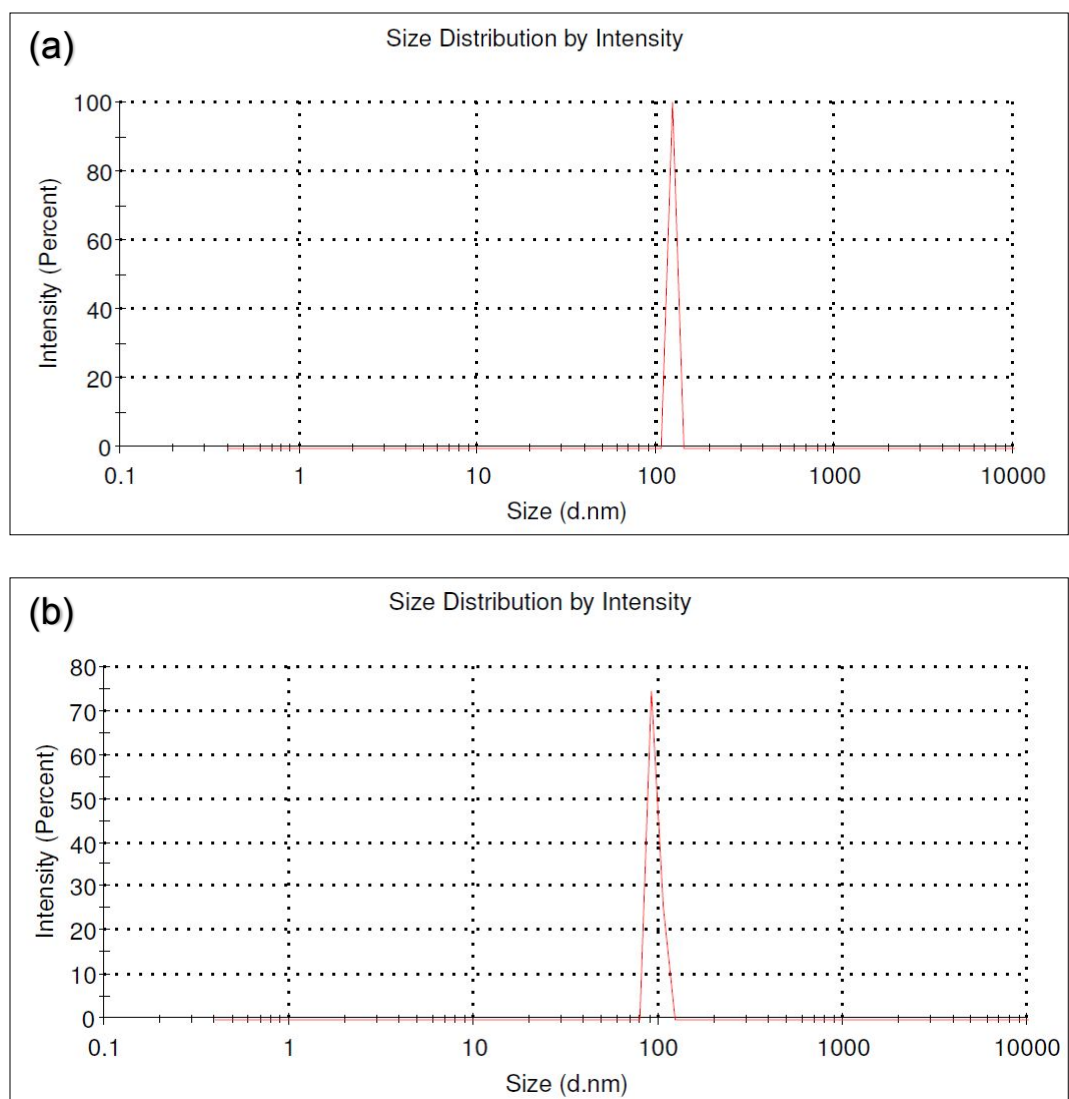


Figure S4. DLS size distributions of (a) MIH and (b) NIH particles in methanol.

Table S1. Isotherm parameters of MIH compounds prepared with the BPA-to-styrene molar ratio of 1:4 and 1:2.

Adsorbents	$q_{e, \text{exp}}$ (mg/g)	Langmuir model			Freundlich model		
		$q_{m, \text{calc}}$ (mg/g)	K_L (L/mg)	R^2	K_f	n	R^2

MIH (1:4)	23.1	29.1	4.1×10^{-2}	0.951	3.24	2.313	0.935
MIH (1:2)	33.2	40.3	5.1×10^{-2}	0.992	3.67	1.932	0.975

Table S2. Scatchard plot parameters of BPA adsorption in the MIH and NIH-based system.

Adsorbents	High affinity binding sites		Low affinity binding sites	
	K_d (mg/L)	Q_{max} (mg/g)	K_d (mg/L)	Q_{max} (mg/g)
MIH	6.0	18.9	27.1	44.6
NIH		-	90.9	4.4