Supporting Information

Preparation and Evaluation of Self-Assembled Porous Microspheres-Fibers for Removal of Bisphenol A from Aqueous Solution

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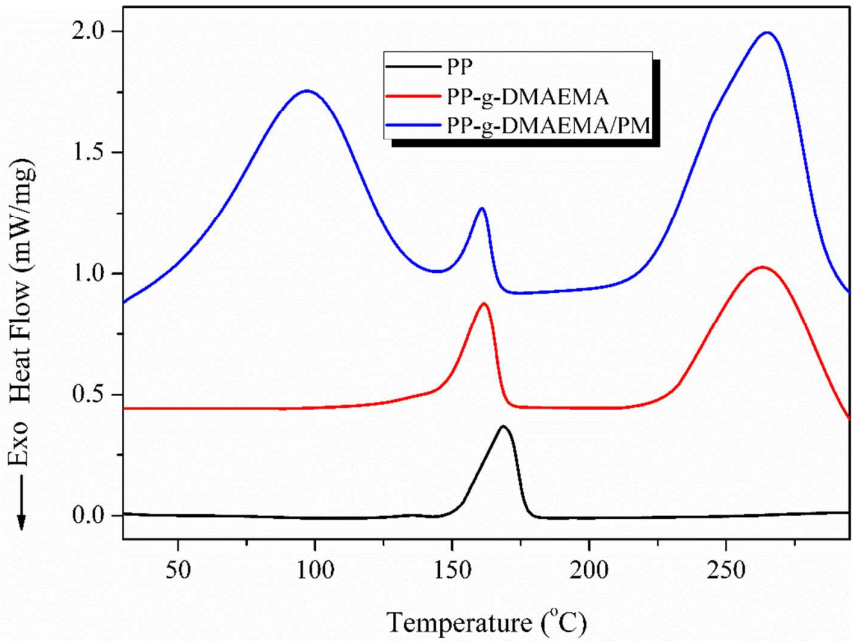

Figure S1. DSC curves of PP, PP-g-DMAEMA, and PP-g-DMAEMA/PM fibers.

Table S1. BET Surface Areas, Pore Volumes, and Average Pore Size of PP Samples

Sample	S_{BET}[a] (m^2g^{-1})	V_t[b] (cm^3g^{-1})	D_p[c] (nm)
Original PP	1.02	0.003	22.53
PP-g-DMAEMA	14.91	0.042	4.78
PP-g-DMAEMA/PM	193.27	0.254	1.39

[a] Specific surface area (BET).

[b] Total pore volume.

[c] Average pore size.

Table S2. Surface Chemistry Composition of Original and Modified PP Fibers and the Atomic Ratio of O/C Bonds

Sample	Element (atom %)			Atomic ratio
	C1s	O1s	N1s	O/N
Original PP	100	–	–	–
PP-g-DMAEMA	81.02	14.43	4.55	0.18
PP-g-DMAEMA/PM	75.73	21.01	3.26	0.28

Table S3. Adsorption Capacity of BPA on PP-g-DMAEMA/PM Fiber in Comparison to Other Literature Values

substance	modified	temperature (K)	equilibrium time (min)	MAC (mg/g)[a]	ref
activated carbon	none	298	300	227.24	[1]
activated carbon	nitric acid	298	3000	382.12	[2]
powdered activated carbon	cobalt ferrite	298	120	771.2	[3]
powdered activated carbon	N-isopropylacrylamide	298	480	247.53	[4]
carbon nanofibers	none	298	480	1100	[5]
carbon microspheres	2-acrylamido-2-methylpropanesulfonic acid	298	120	2.64	[6]
graphene	none	302.15	300	182	[7]
graphene oxides	$FeCl_3 \cdot 6H_2O$, $FeSO_4 \cdot 7H_2O$	293	420	58.2	[8]
montmorillonite	gemini pyridinium surfactants	298	120	222.2	[9]
organophilic montmorillonite	polyethersulfone	298	300	32.05	[10]
zeolite	hexadecyltrimethylammonium	298	NA[b]	114.9	[11]
hydrophobic zeolite	none	298	NA[b]	111.11	[12]
silica	Methacrylic Acid and ethylene glycol dimethacrylate	298	NA[b]	2.1	[13]
silica	Diethylene triamine pentacetate acid	298	180	6.89	[14]
mesoporous silica	phenyltriethoxysilane	298	120	351	[15]
kaolinite/Fe_3O_4	methacrylic acid	298	360	142.9	[16]
lignin	none	296	300	237.07	[17]

surficial sediments	none	298	NA[b]	1.41	[18]
fibric peat	hexadecyltrimethylammonium bromide	298	60	29.15	[19]
chitosan	γ-Fe_2O_3 and fly-ash-cenospheres	298	160	77.99	[20]
hydrogels	β-cyclodextrin–carboxymethylcellulose	298	180	38.12	[21]
polyaniline resin	Fe_3O_4	298	115	9.13	[22]
PP fibers	dimethylaminoethyl methacrylate and porous microspheres	298	40	327.84	this work

[a] Maximum adsorption capacity obtained from the Langmuir model or from the adsorption capacity at the highest initial concentration.

[b] Data not available.

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