Electronic Supplementary Material (ESI) for Organic & Biomolecular Chemistry

Molecularly imprinted films of acrylonitrile/methyl methacrylate/acrylic acid terpolymers: Influence of methyl methacrylate in the binding performance of *L*-ephedrine imprinted films

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Electronic Supplementary Information

Table S1. Monomer feed (mole %) used for copolymer synthesis.

Polymer	AN	AA	MMA	MA	EMA	nBMA
PAMA1	42.5	15.0	42.5			
PAMA2	50.0	7.5	42.5			
PAMA3	42.5	7.5	50.0			
PAMA4	28.0	15.0	57.0			
PAMA5	57.0	15.0	28.0			
PAMA6	42.5	22.5	35.0			
PA-MA-A	50.0	7.5		42.5		
PA-EMA-A	50.0	7.5			42.5	
PA-*n*BMA-A	50.0	7.5				42.5

Figure S1. An example of a PAMA film obtained from polymer PAMA3 (44% AN, 49% MMA, 7% AA) by phase inversion from acetone to water.

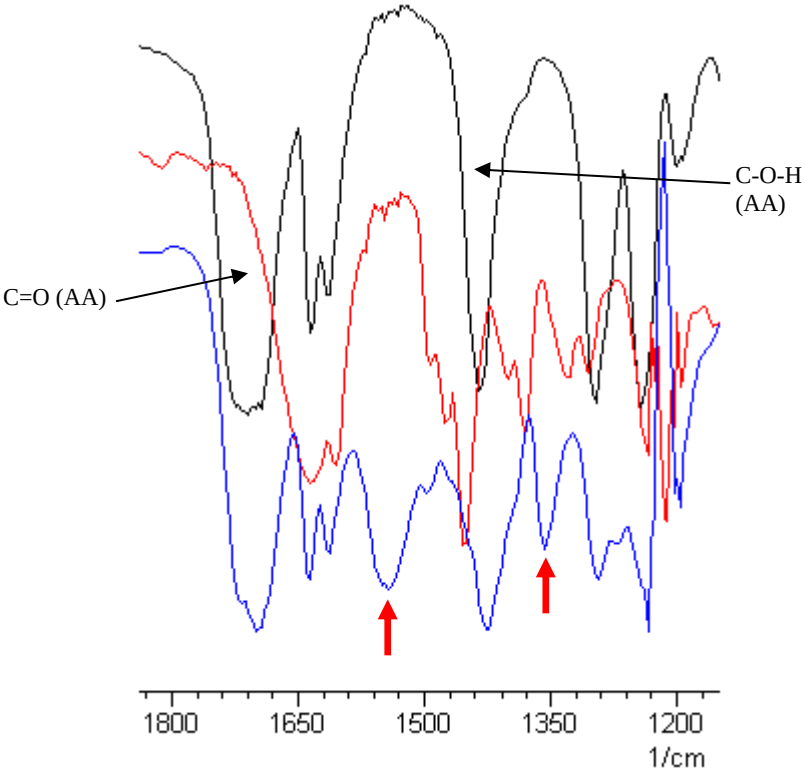

Figure S2. FTIR spectra of: AA (black); EPD (red); and a 3:1 AA-EPD complex (blue). Bold red arrows signal emergence of new peaks in the AA-EPD complex. AA produces two peaks of particular interest, the carbonyl stretching peak at 1710cm^{-1}, and the C-O-H bending peak at ~1420cm^{-1} shifted to 1550cm^{-1} and 1350cm^{-1}, respectively when AA hydrogen bonds with EPD.

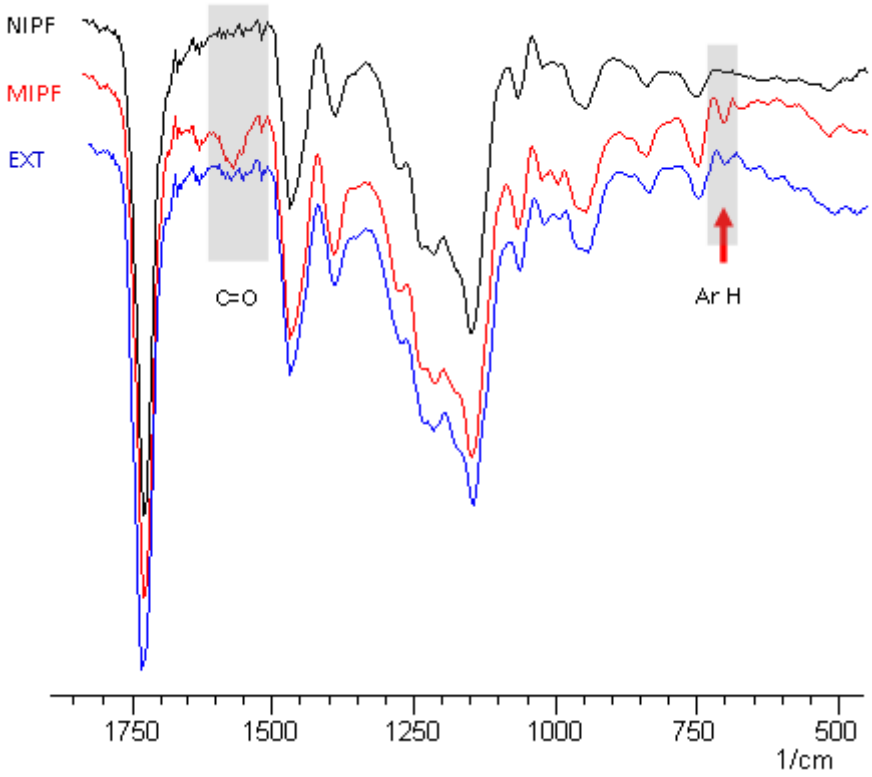

Figure S3. FTIR spectra of a) NIPF, b) MIPF and c.) extracted MIPF of Polymer PA-*n*BMA-A. Note that the 700cm^{-1} peak (EPD arene C-H bending) was still visible following the extraction process while the carboxylate peak at 1570cm^{-1} has disappeared indicating that the interaction between AA and EPD has been disrupted but EPD is still trapped in the matrix.

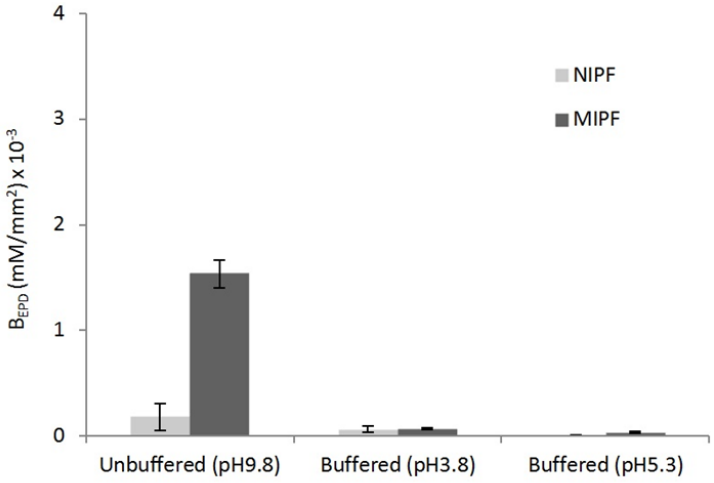

Figure S4. EPD rebinding of PAMA2 at various pH values after 2h of contact with 1.0 mL of 1.0 mM EPD solution.

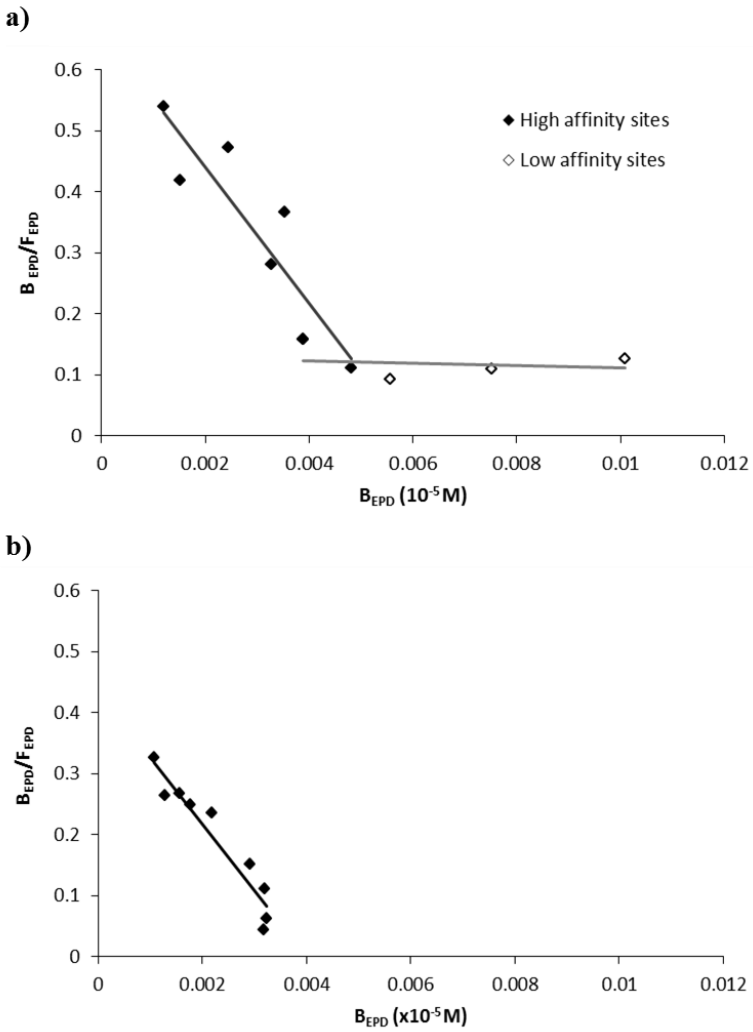

Figure S5. Scatchard plots for **(a)** $MIPF_{PAMA1}$ and **(b)** $MIPF_{PAMA2}$ measured after two hours from various concentrations of EPD solutions. Results are an average of three trials. **B** refers to bound EPD, **F** refers to free unbound EPD.