

Supporting Information

Replicated Pattern Formation and Recognition Properties of 2,4-Dichlorophenoxyacetic acid-Imprinted Polymers using Colloidal Silica Array Molds

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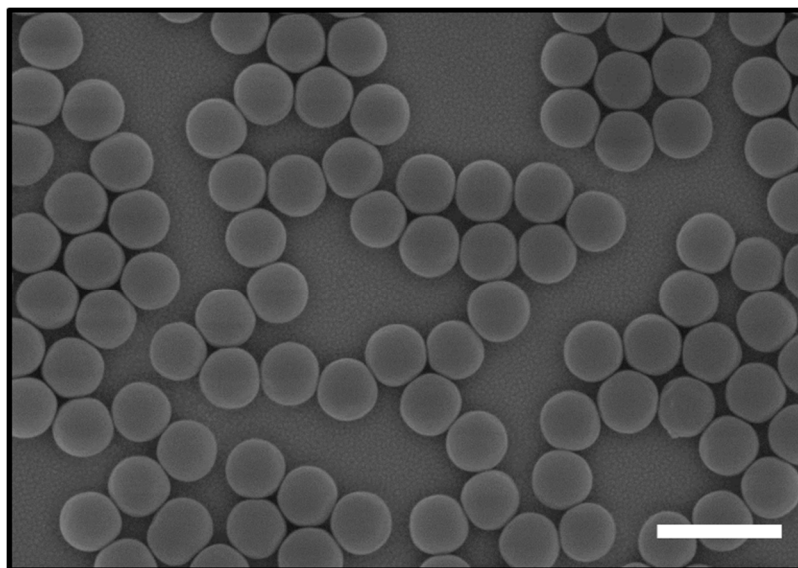


Figure S1. SEM image of synthesized silica colloids (the scale bar is 1 μm).

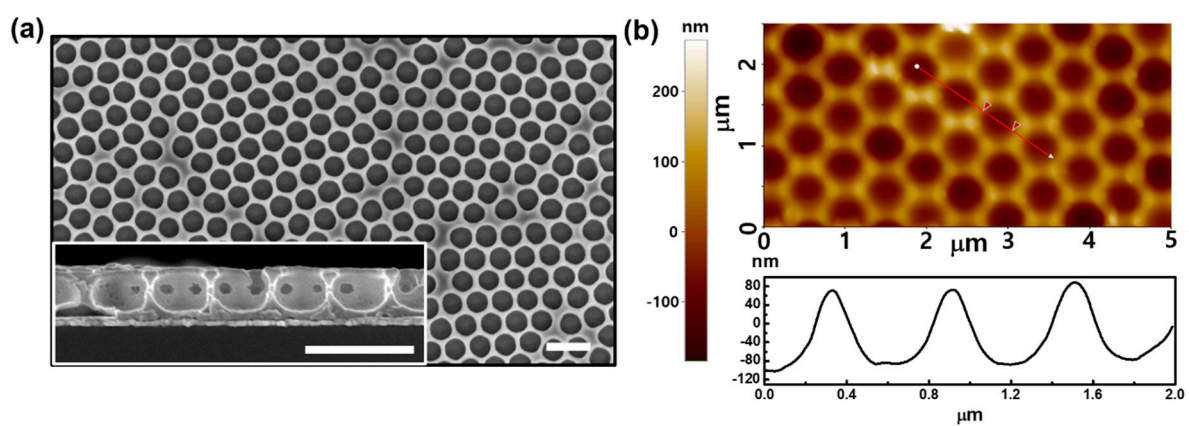


Figure S2. (a) SEM (inset is a cross-sectional image) and (b) AFM images (line profilometry is included below AFM image) of the *p*-NIP film. All the scale bars in Fig. S2 are 1 μm.

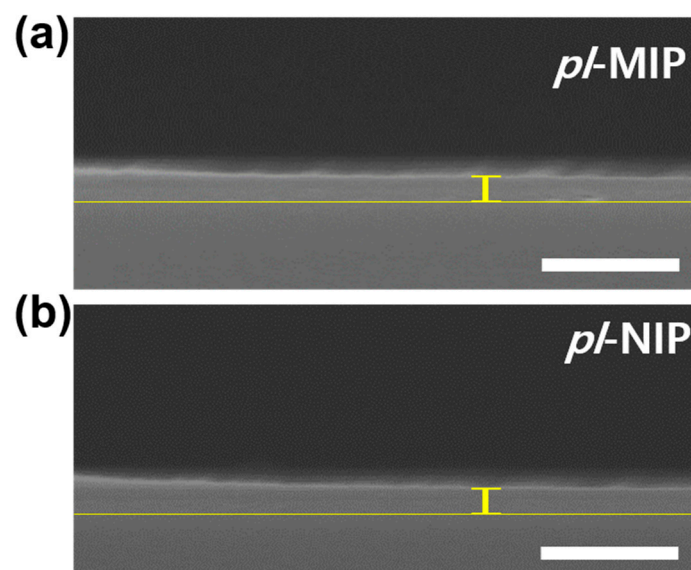


Figure S3. Cross-sectional SEM images of (a) *pI*-MIP and (b) *pI*-NIP films (all the scale bars in Fig. S3 are 500 nm).

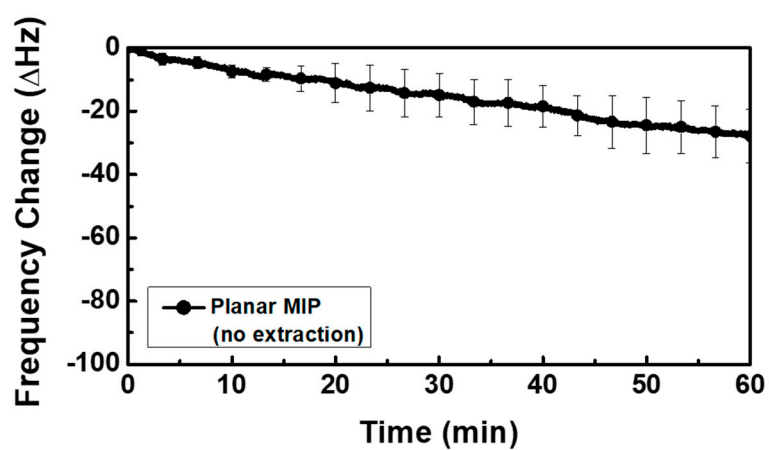


Figure S4. Frequency change as a function of time on the *p*-MIP film not undergoing the process of template extraction during rebinding experiment in 10^{-1} mM 2,4-D aqueous solution for 1 h.

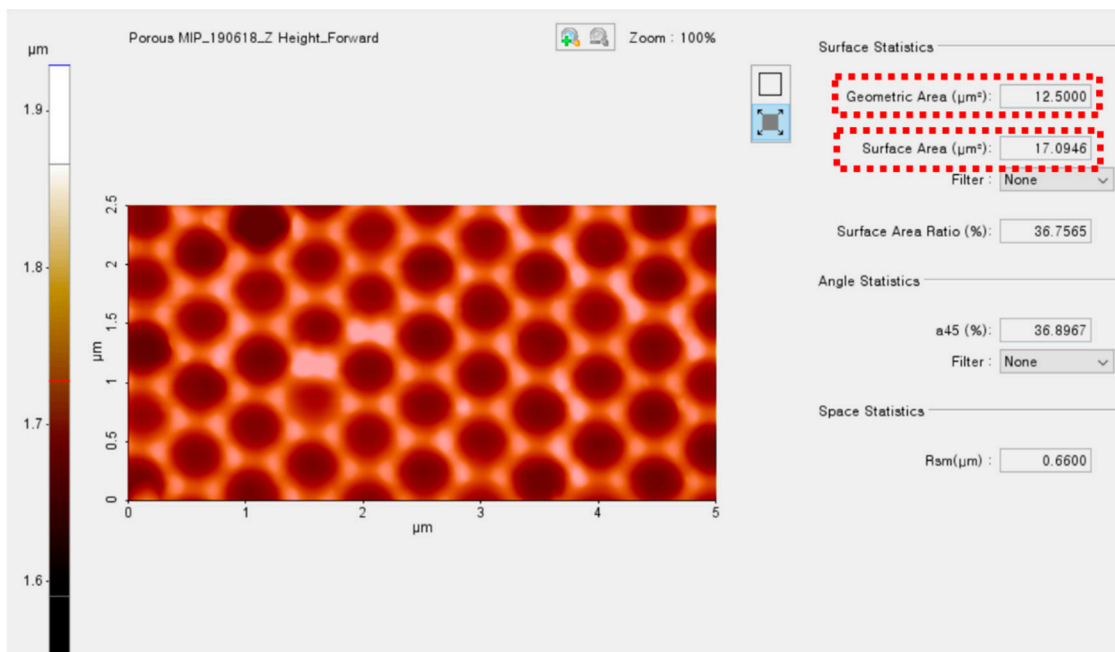


Figure S5. Surface analysis of the *p*-MIP film (note red dash rectangle): the patterned surface area ($17.0946 \mu\text{m}^2$) on the scanned area ($12.5 \mu\text{m}^2$) indicates the increased aspect ratio of 1.37 (A/A_0) on the defined area.

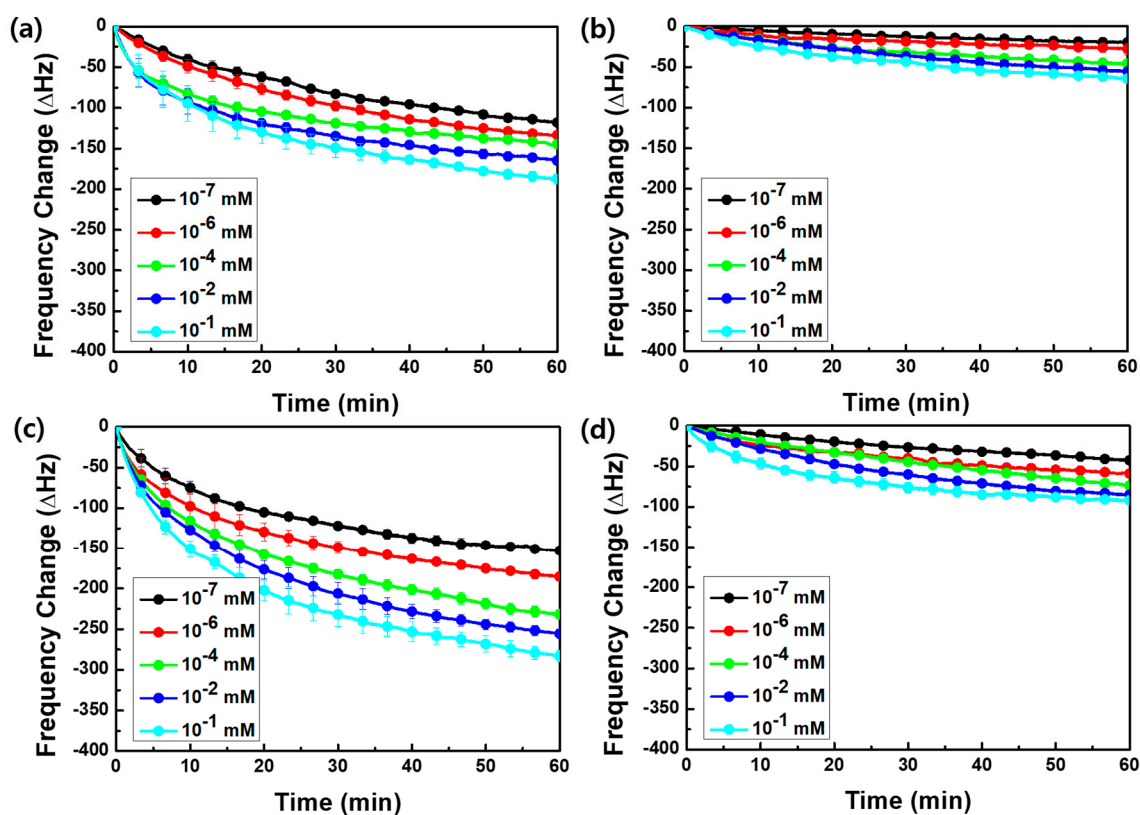


Figure S6. Frequency change as a function of time on (a) the *pl*-MIP, (b) *pl*-NIP, (c) *p*-MIP, and (d) *p*-NIP films in a variety of 2,4-D concentrations ($10^{-7} - 10^{-1}$ mM) for the 1 h rebinding process.

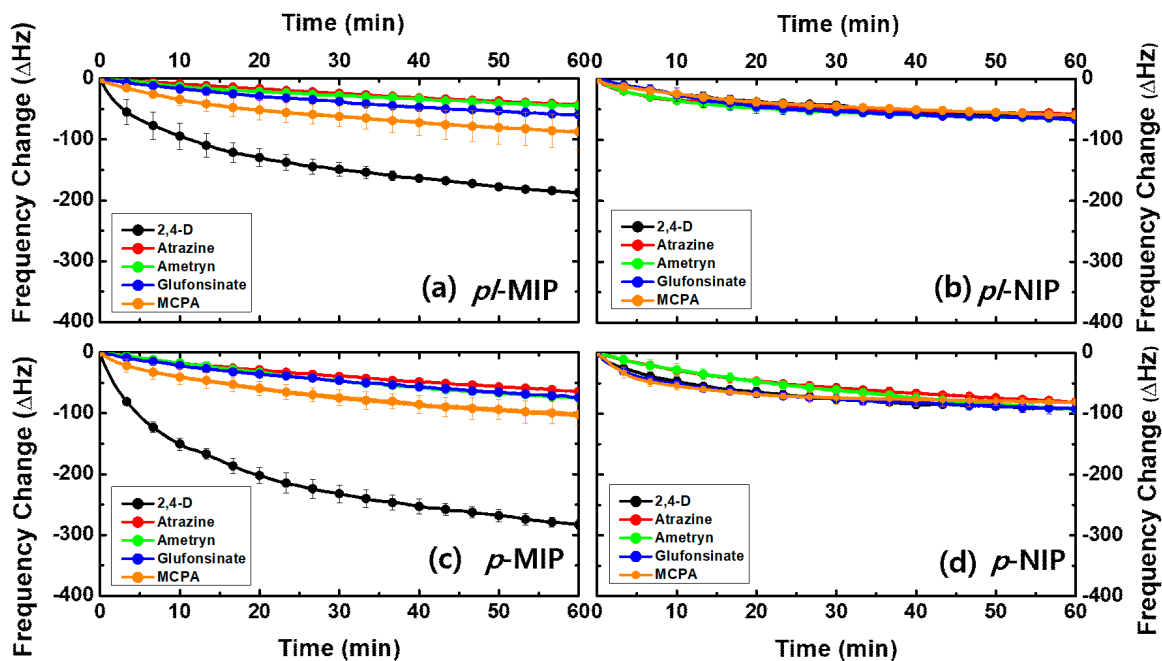


Figure S7. Frequency change as a function of time on (a) the *pI*-MIP, (b) *pI*-NIP, (c) *p*-MIP, and (d) *p*-NIP films in each analogous herbicide solution (2,4-D, atrazine, ametryn, glufosinate, or MCPA) with a fixed concentration (10^{-1} mM) for the 1 h rebinding process.

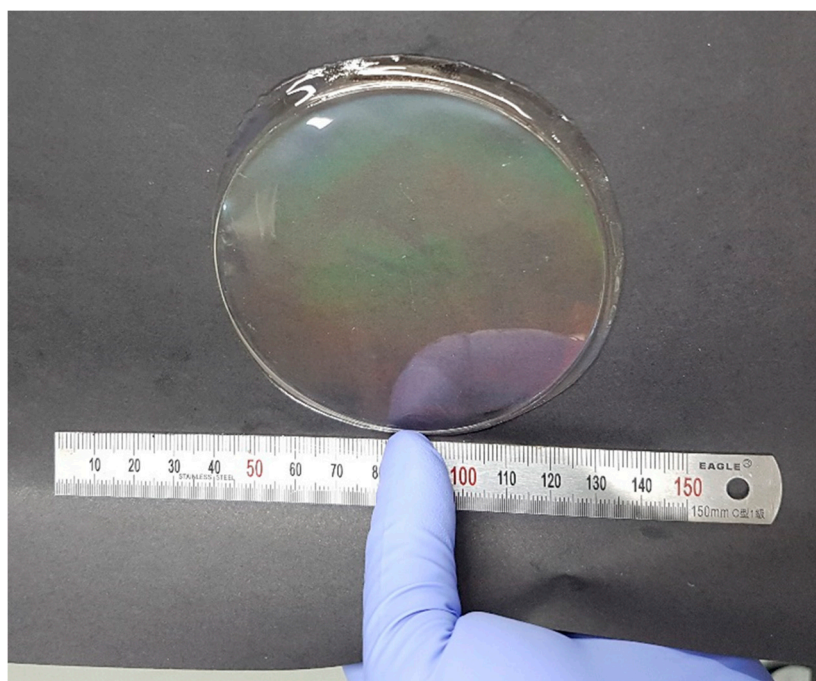


Figure S8. Photograph of the large scale ($d = 8.9$ cm) *p*-MIP film on a PET supporting film (a mixture solution (0.1 mmol 2,4-D, 0.4 mmol MAA, 1 mmol diurethane dimethacrylate, 1 mmol trimethylolpropane propoxylate triacrylate (TMPPTA), 0.1 mmol 1-hydroxycyclohexyl phenyl ketone (HCPK)) is used and UV irradiation is induced for 7 min).