Supporting Information

Co-deposition Motif for Constructing Inverse Opal Photonic Crystals with pH Sensing

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Fig. S1 showed SEM image of PSA colloids. Fig. S2 presented the pH dependence of Bragg diffraction wavelength of IOH film with thicknesses of 50 μm in buffer solutions. Fig. S3 presented the pH dependence of Bragg diffraction wavelength of IOH film with thicknesses of 25 μm in buffer solutions. Similar Bragg diffraction peak shifts as a function of the pH variation had been observed. As the pH increased from 2.67 to 8.43, the Bragg diffraction peak monotonically red shifted; whereupon it blue shifted with further pH increased.

Fig. S4 showed the pH responsive time of the IOH film with thicknesses of 50 μm upon soaking in solutions between pH 2.67 and pH 8.43. Fig. S5 showed the pH responsive time of the IOH film with thicknesses of 25 μm upon soaking in solutions between pH 2.67 and pH 8.43. It can be clearly seen that the response process was complete within 10 s.

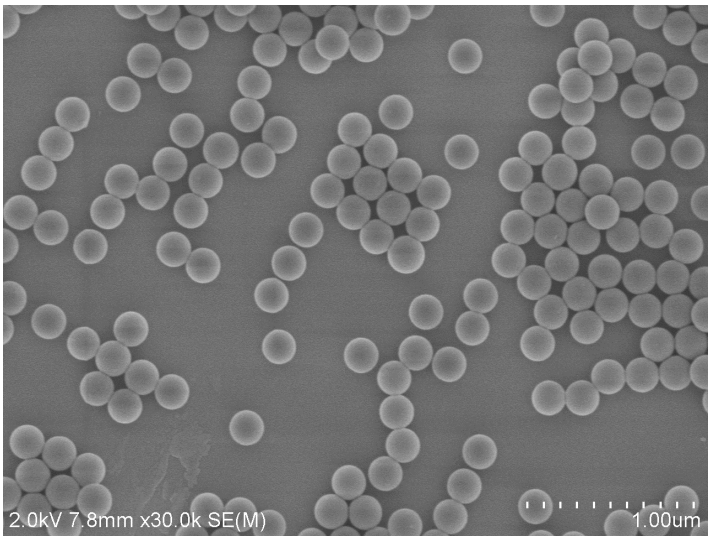

Fig. S1 SEM image of PSA colloids.

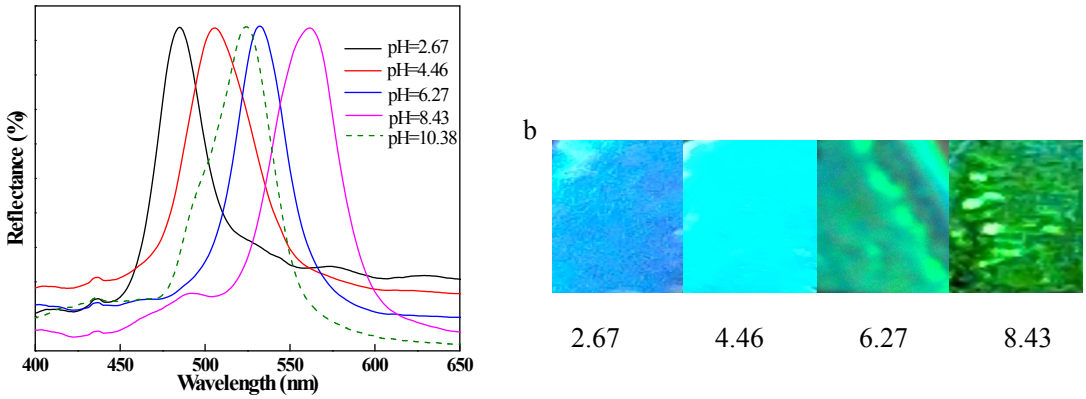

Fig. S2 (a) Optical response of IOH film upon soaking in buffer solutions at different pH values. (b) Photograph of IOH film under different pH conditions.

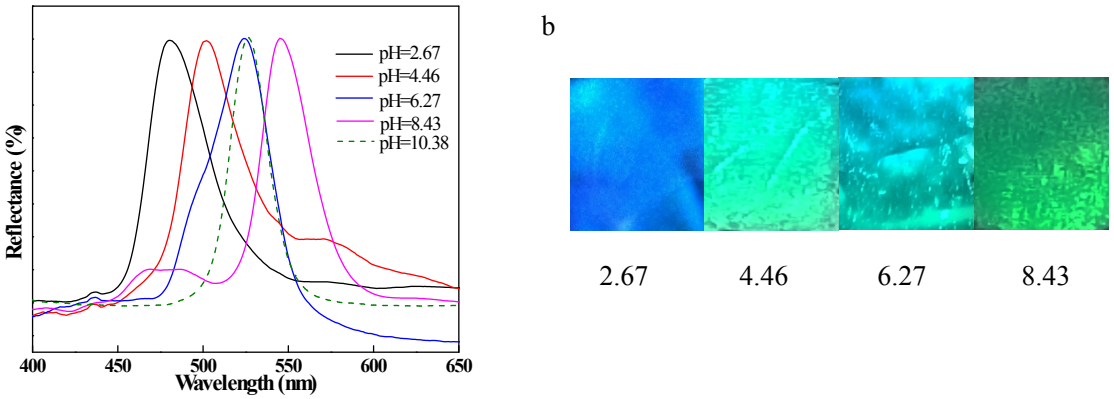

Fig. S3 (a) Optical response of IOH film upon soaking in buffer solutions at different pH values. (b) Photograph of IOH film under different pH conditions.

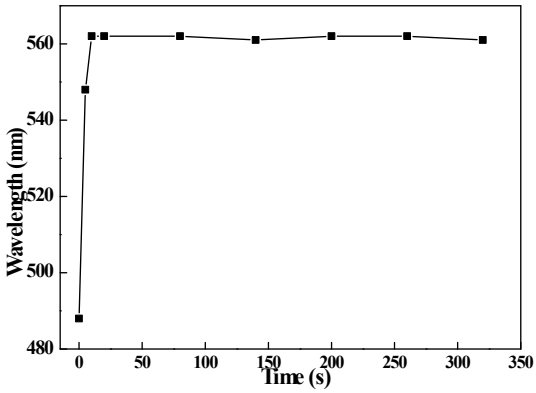

Fig. S4 Kinetic response of IOH film upon soaking in buffer solutions between pH 2.67 and pH 8.43.

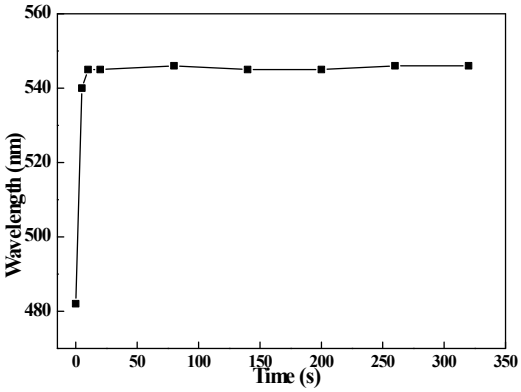

Fig. S5 Kinetic response of IOH film upon soaking in buffer solutions between pH 2.67 and pH 8.43.