Electronic Supplementary Material (ESI) for Lab on a Chip.

Supplementary Informations

Fabrication of Inverse Opal Photonic Gel Sensors on Flexible Substrate by Transfer Process

Sohee Yoon[1], Habin Park[1,2], Wonmok Lee[1,2]

[1]*Department of Chemistry, Sejong University, 209, Neungdong-ro, Gwangjin-gu, Seoul 05006, Republic of Korea*
[2]*ENGAIN Co. Ltd., 700, Daewangpangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do 13488, Republic of Korea*

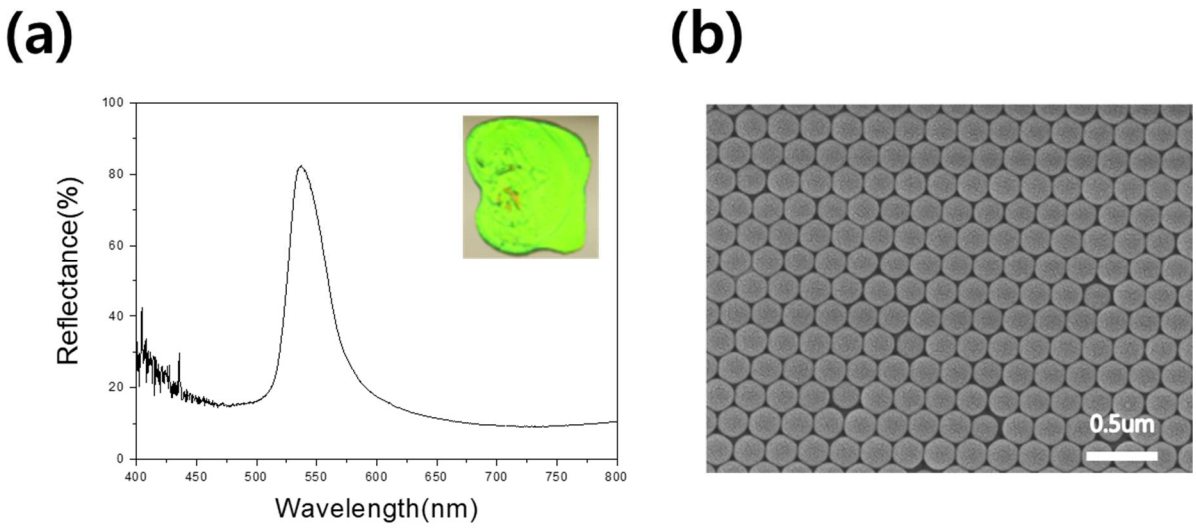

Fig S1. (a) Reflectance spectrum of the 230 nm PS μ-sphere used in this study. Inset photography in reflectance spectrum is a drop-cast opal film from the PS μ-sphere.(b) SEM image of the drop-cast film.

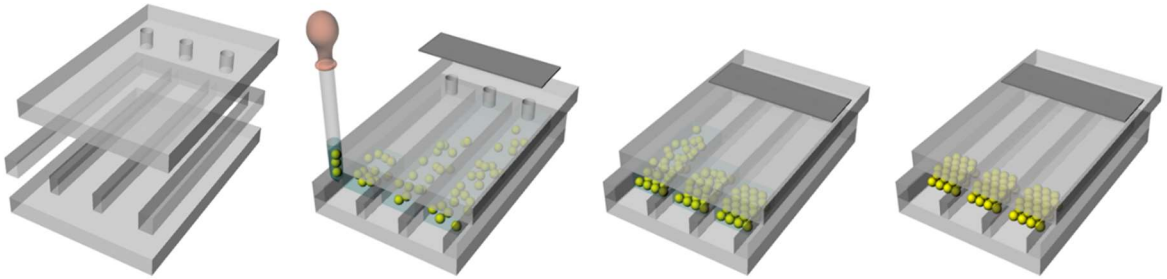

Fig S2. Fabrication procedures for opal template by DEECA. First, Surlyn spacer is sandwiched between a C18-glass with holes and a C-6 glass which were used as top and bottom substrates respectively, and hot-pressed at 70ºC. After an aqueous dispersion of PS μ-sphere is filled in the channels by capillary force, top holes are taped. Upon water evaporation, self-assembled opal films are formed at the wide open inlet, and the dried opal film is further annealed at 90ºC for 3h.

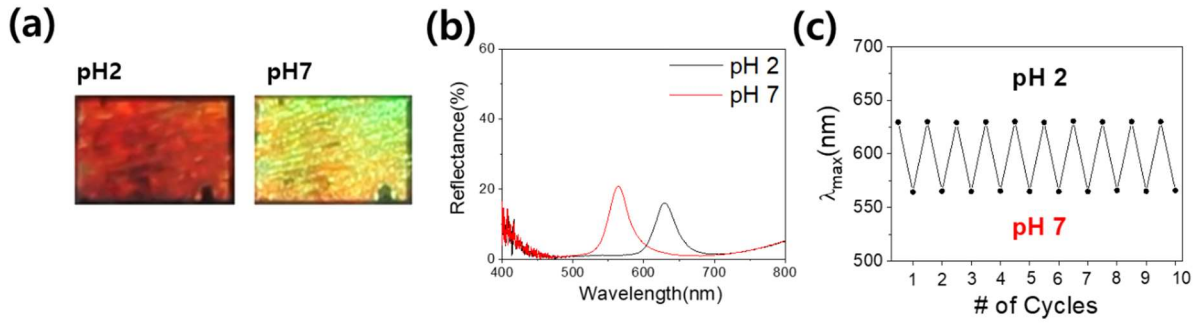

Fig S3. (a) VI-containing IOPG on glass substrate immersed in the phosphate buffers respectively adjusted at pH 2 and pH 7, (b) corresponding reflectance spectra of VI-IOPG at each pH, (c) plot of λ_{peak} of VI-IOPG on glass under repeated pH changes between pH 2 and 7.

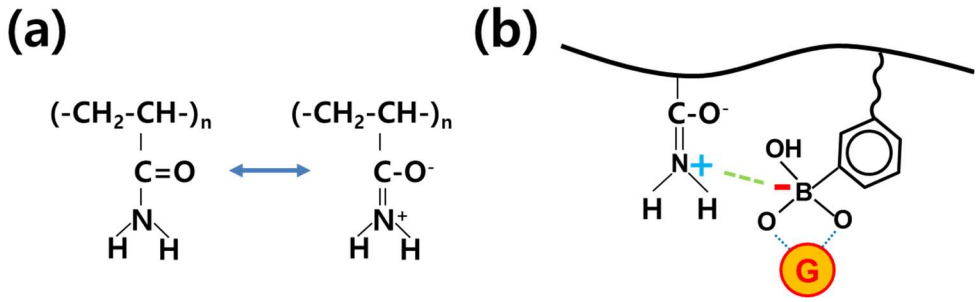

Fig S4. (a) Resonance structures of polyacrylamide, (b) the charge stabilisation of glucose-bound phenylboronic acid anion within the IOPG with adjacent cationic nitrogen in acrylamide.

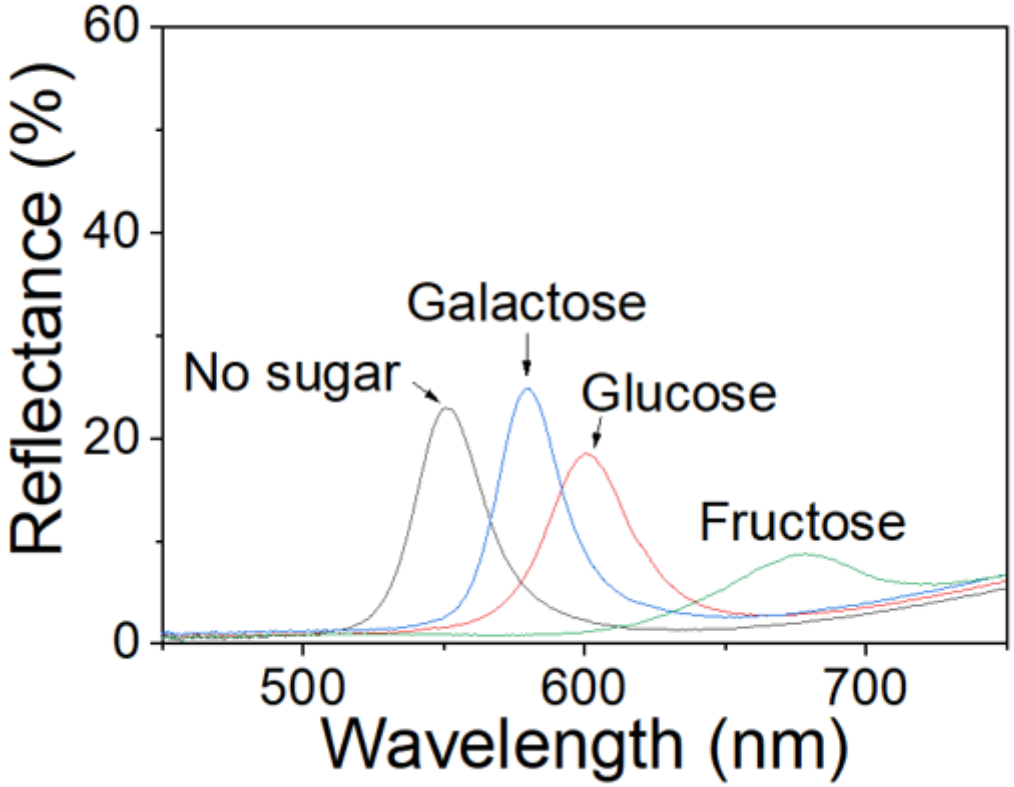

Fig S5. Reflectance spectra of an 3AAPBA-AAm-IOPG immersed in three aqueous phosphate buffer solutions respectively containing different monosaccharides at 10mM concentrations. pH for each solution was adjusted at 7.4.