Supporting information

Catechol-containing acrylic Poly(ionic liquid) Hydrogels as Bioinspired Filters for Water Decontamination

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Figure S1. FTIR results from the homopolymers and co-polymers of (a) HEA, (b) METAC

and (c) AAm hydrogels.



Figure S2. ¹H-NMR spectra of a pre-polymeric mixture (a) of P(HEA-co-iDA15) and the hydrogel (b) after 2 h of irradiation.



Figure S3. SEM micrographs from PAAm (A) and P(AAm-co-iDA30) (B). Scale bar: 20

μm.



Figure S4. DSC results from the homopolymers and co-polymers of (a) AAm, (b) METAC and (c) HEA hydrogels.



Figure S5. a) P(HEA-co-iDA50) hydrogels after 8 h of exposure at different pH buffers solutions; b) iDA monomer after 8 h of exposure at different pH buffers solutions.



Figure S6. FTIR spectra of P(HEA-co-iDA50) before (0 h) and after (48 h) of the leaching assay in contact with the aquifer simulated solution.



Figure S7. Desorption of Eosin Y (a) and Methylene Blue (b) employing P(HEA-coiDA15) in methanol. **i** contains the colorant in simulated aquifer solution; **ii** contains the colorant released from the hydrogel after 2 h in methanol; **iii** presents the hydrogel after 6 h removing the colorant in simulated aquifer solution; **iv** presents the hydrogel after 4 h of desorption of the colorant in methanol.