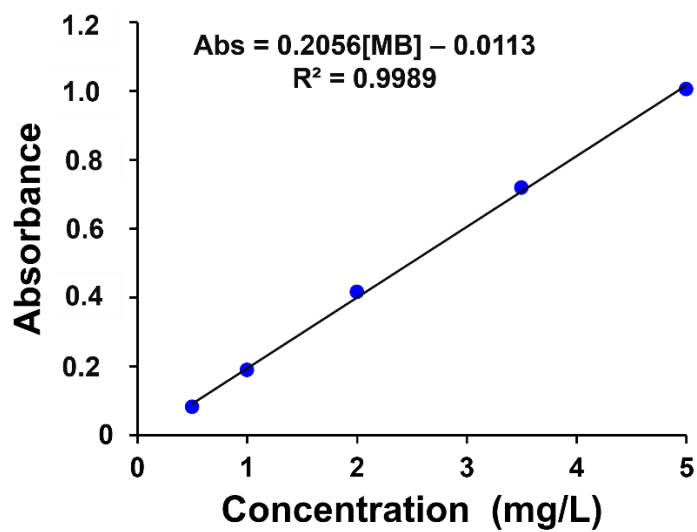


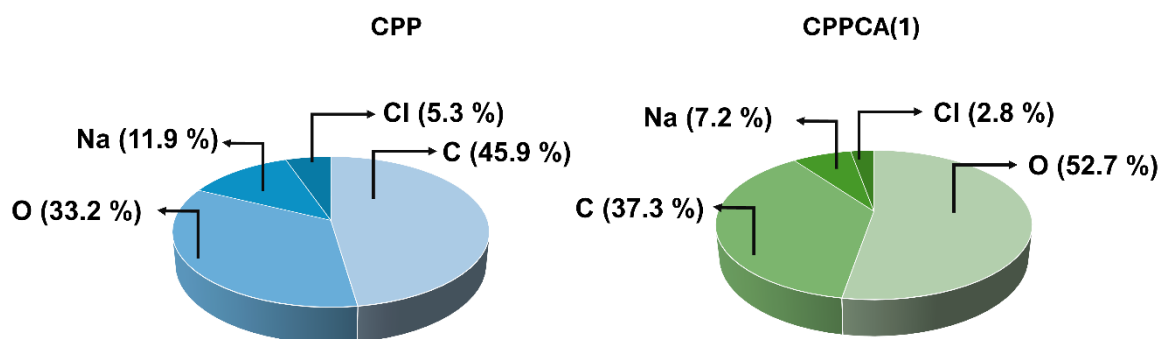
## Supplementary Materials



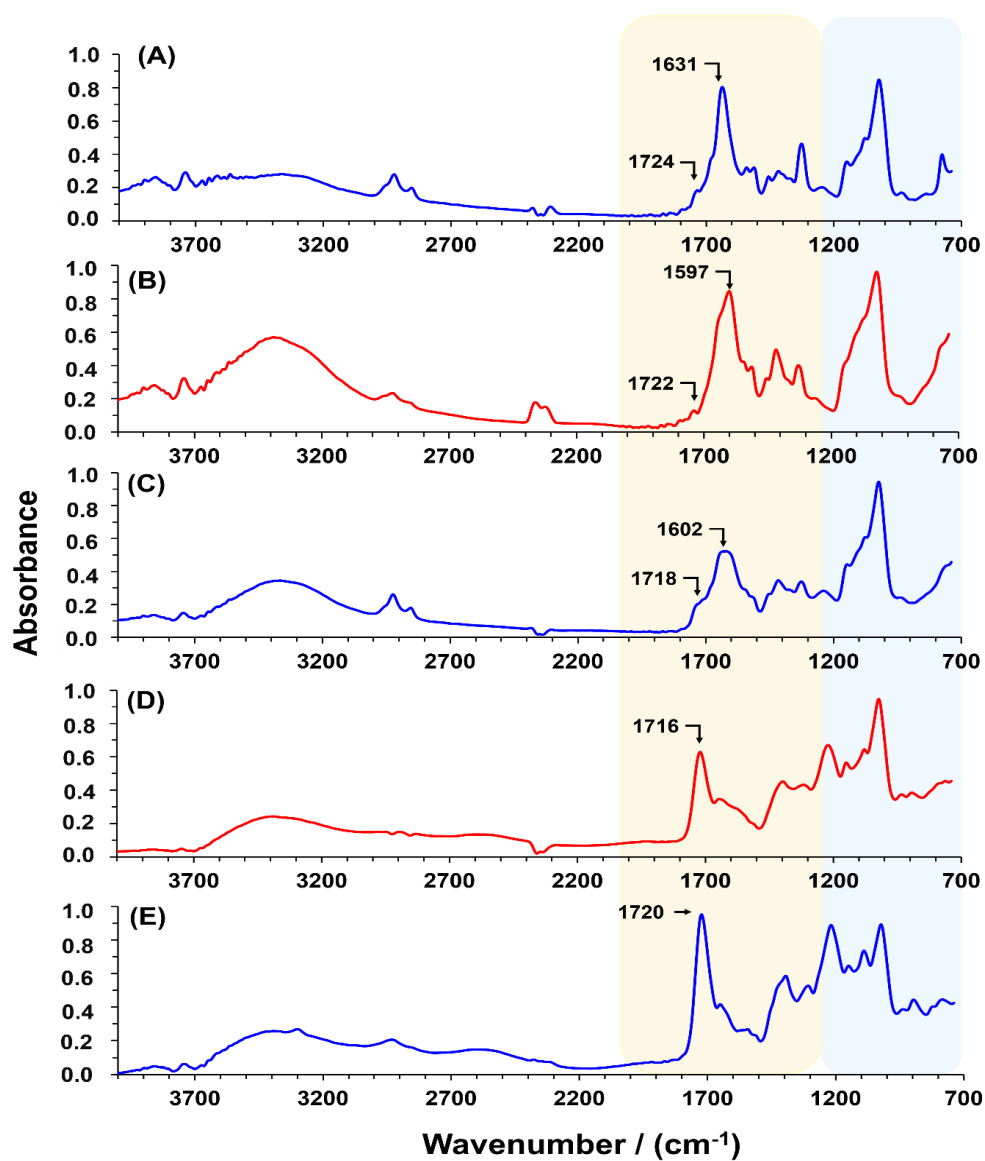
**Figure S1.** Calibration curve of MB in water at 665 nm.



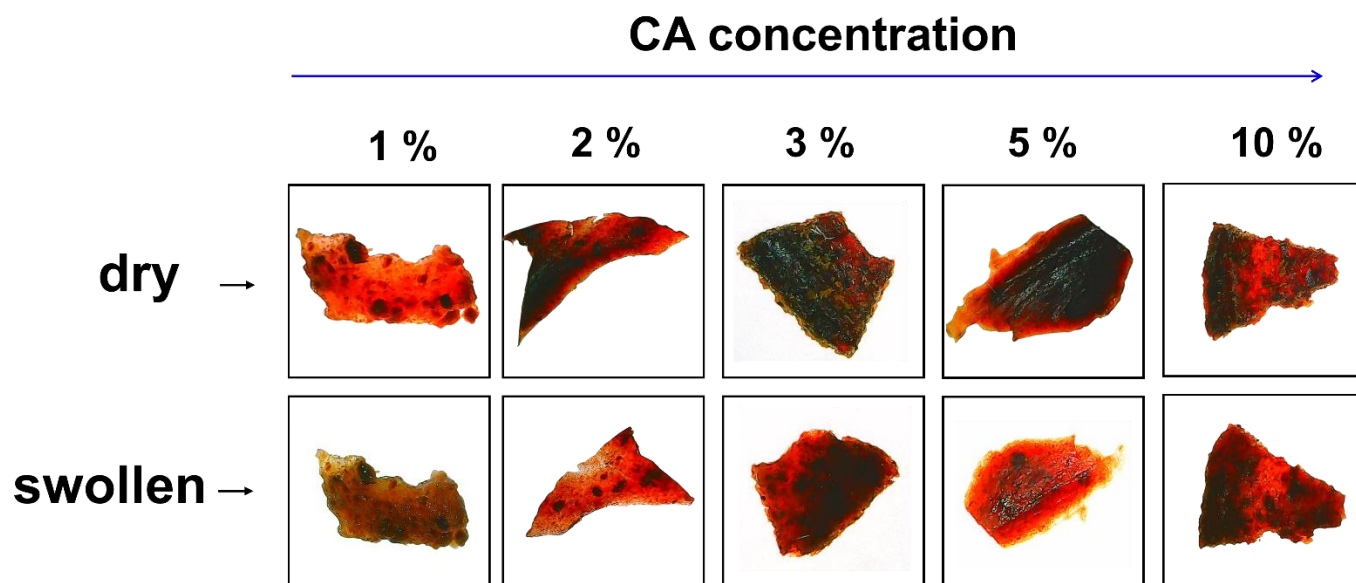
**Figure S2.** Digital photography of CPP after 24 hours in distilled water under mechanical stirring at 100 rpm.



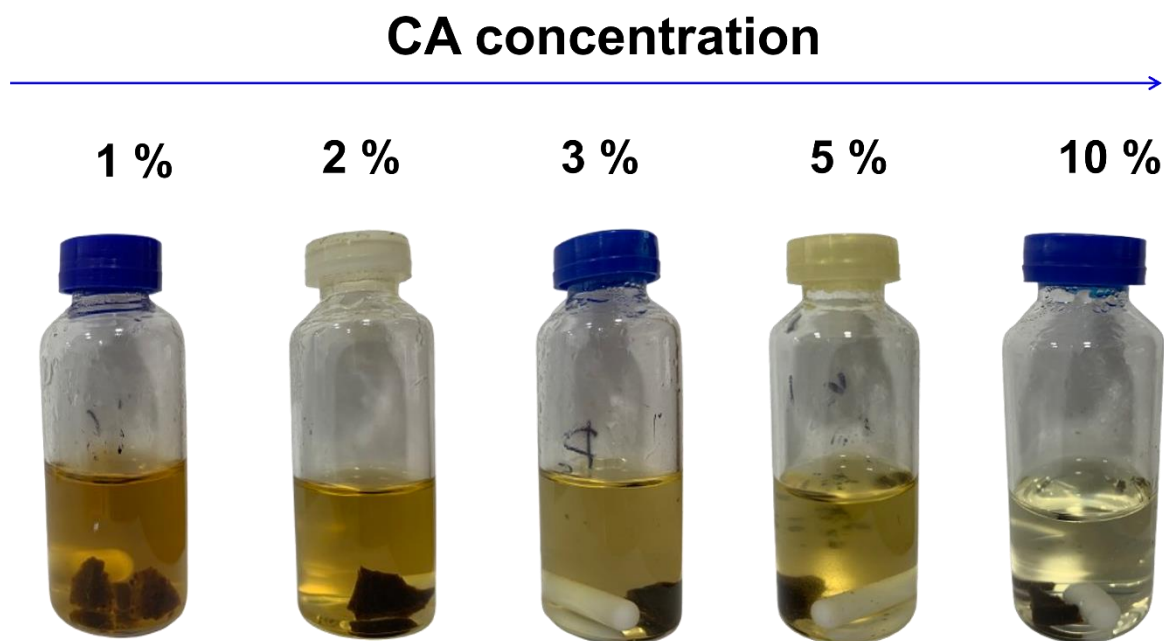
**Figure S3.** Elemental composition of CPP and CPPCA(1) according to EDS analysis.



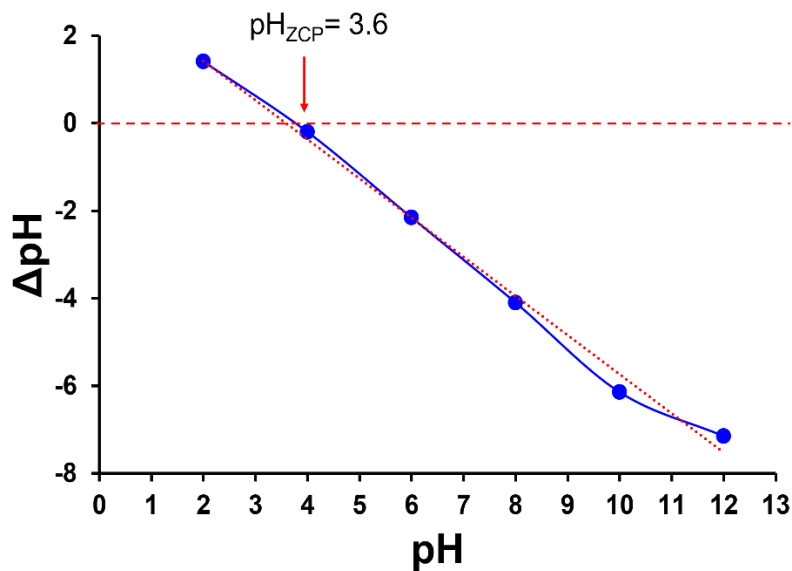
**Figure S4.** ATR-FTIR spectra of CPPCA(x) with different concentration of CA: (A) 1 %, (B) 2 %, (C) 3 %, (D) 5 %, and (E) 10 %.



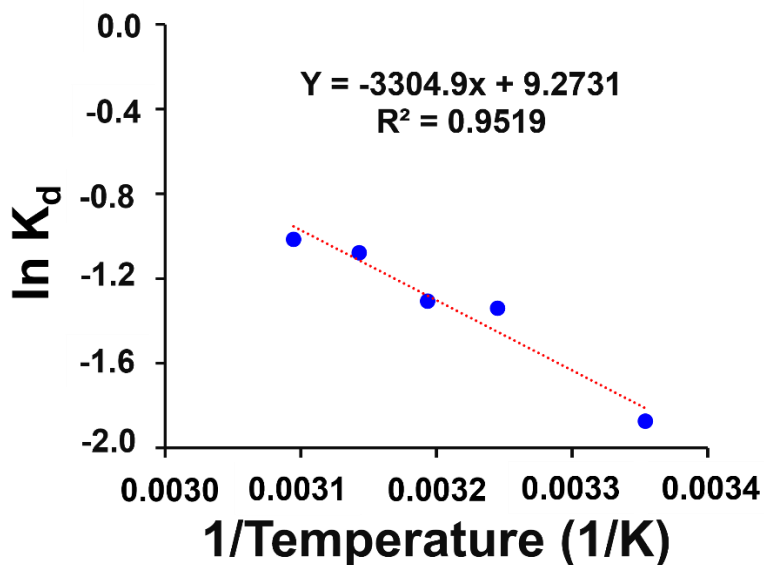
**Figure S5.** Digital photography of CPPCA dry and swollen after 24 hours in distilled water. The hydrogels formed with different CA concentration ranging from 1 to 10 %.



**Figure S6.** Digital photography of CPPCA(x) swollen after 24 hours in distilled water under mechanical stirring at 100 rpm. The hydrogels formed with different CA concentration ranging from 1 to 10 %.



**Figure S7.**  $\Delta pH$  versus  $pH_{initial}$  curve behavior to determinate of the point of zero charge ( $pH_{PZC}$ ) of the CPPCA(1).



**Figure S8.**  $\ln K_d$  vs  $1/\text{temperature}$  for the MB adsorption on CPPCA(1). Conditions: time = 24 h,  $C_o = 2000$  mg/L, and adsorbent dose = 0.2 g/mL.

**Table S1.** Thermodynamic parameters for MB adsorption on CPPCA(1) hydrogel

Temperature (°C)	$\Delta G^\circ$ (kJ/mol)	$\Delta S^\circ$ (J/mol K)	$\Delta H^\circ$ (J/mol K)
25	-4.96	77.10	-27.48
35	-3.49		
40	-3.51		
45	-2.67		
50	-2.56		