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Synthesis and characterization of a nanocomposite for combined photocatalytic degradation of a mixture of toxic dyes

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In this study, starch/poly (alginic acid-cl-acrylamide)/Fe/Zn nanocomposite hydrogel (ST/PL (AA-cl-AAm)/Fe/Zn NCHG) was synthesized by co-precipitation polymerization method. ST/PL (AA-cl-AAm)/Fe/Zn NCHG was characterized by XRD, TEM, SEM and FTIR. This nanocomposite hydrogel was prepared with the idea to remove the organic pollutants (dyes) from the water system. A mixture of malachite green and fast green dye was used to check the photocatalytic degradation ability of the prepared nanocomposite hydrogel. The degradation of the two dyes followed the pseudo first order kinetics.

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