

Radiation grafting of acrylic acid onto chitosan beads for metal ion sorption

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Description

The removal of heavy metals from aqueous solutions was investigated using natural and grafted sorbent chitosan beads, which have been grafted with acrylic acid by gamma irradiation technique at the dose of 4 kGy and dose rate of 20.64 Gy/min. The grafting yield was over 80% and increase by increasing radiation doses. The characterization of the sorbents was achieved by, particle size, FTIR spectroscopy and swelling at different pH).

The ability of modified (Chit-AAc) and unmodified (Chit) chitosan beads as sorbent for Pb and Cd ions in aqueous solution was studied. The sorption behavior of materials was examined through pH, kinetic and equilibrium experiments. Grafted chitosan beads presented higher sorption capacity for both metal ions than unmodified chitosan beads.

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