عنوان مقاله:

Synthesis of electrospun ZnO/polyacrylonitrile nanofibers and itsapplication for the removal of cadmium ions from waste waters

محل انتشار:

کنفرانس بین المللی علوم و توسعه فناوری نانو (سال: 1398)

تعداد صفحات اصل مقاله: 8

نویسنده:

Sodeh Sadjadi - *Material and Nuclear Fuel School, Nuclear Science and Technology Research Institute*

خلاصه مقاله:

In this study, electrospun ZnO/polyacrylonitrile nanofibers were prepared by electrospinning method and its performance was evaluated as a heavy metal ion adsorbent. Nanofibers were characterized by X-ray diffraction, Fourier Transform Infrared Spectroscopy, and Scanning Electron Microscope. Batch adsorption experiments were carried out to study the sorption behavior of Cd(II) ions as a function of pH, adsorbent dosage, contact time, and temperature. The kinetic data were analyzed by pseudo-first order, pseudo-second-order, and intra-particle diffusion kinetic models. The Langmuir, Freundlich, Dubinin–Radushkevich, and Temkin isotherm models were used to describe the equilibrium data.The maximum sorption capacities by applying the Langmuir equation was found to be 170.35 mg/g for Cd(II) ions. The regeneration study of nanocomposite adsorbent was also reported here.

کلمات کلیدی:

Polyacrylonitrile nanofibers, ZnO nanoparticles, cadmium ions adsorption

لینک ثابت مقاله در پایگاه سیویلیکا: