عنوان مقاله:

The Role of Operating Parameters on the Rejection of Copper in Nanofiltration Process

محل انتشار:

فصلنامه روشهای تصفیه محیط, دوره 1, شماره 2 (سال: 1392)

تعداد صفحات اصل مقاله: 5

نویسندگان:

J Nafari - *Dept. of Civil Eng., K.N.Toosi University of Technology, Tehran, Iran. Corresponding author*

S.A Mirbagheri - *Dept. of Civil Eng., K.N.Toosi University of Technology, Tehran, Iran*

خلاصه مقاله:

Copper is one of the important sources of environmental pollution and is non-degradable, and therefore, continues to exist in water. Separation of copper ions from aqueous solutions by membrane technology is shown to be a feasible process to accomplish an effective copper removal over a broad operational range. This paper aims at the effect of operating pressure, pH and TDS on the rejection of copper ion and permeation flux in different feed concentrations by nanofiltration. Experiments were performed with synthetic solution using N90-4040 nanofiltration membrane. Isotherm experiments were carried out. Permeate flux, pH and copper concentration in permeate were measured to determine the membrane characteristics and performance. Experimental results indicated that the rejection of copper ions increases with increasing of operating pressure, pH and TDS of the solution. The rejection efficiency varied from 94% to approximately 99.9% in different operating conditions. In addition, the permeate flux increased with increase in operating pressure in four different feed concentrations. On the other hand, increasing pH and TDS resulted in decline .in permeate flux

کلمات کلیدی:

Nanofiltration, Copper rejection, Membrane process, Permeate flux, Applied pressure