

## عنوان مقاله:

Hexavalent chromium removal from water of the wells of Sarbishe plain in southern Khorasan

محل انتشار:

اولین کنفرانس بین المللی تصفیه فاضلاب و بازیافت آب، فناوری ها و یافته های نو (سال: 1388)

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## خلاصه مقاله:

Southern Khorasan is located in east of Iran. This province is located in dry & hot zone. Ground water accounted as a main resource of water in these region, because there isn't any surface stream such as river, stream and etc. Chromium is one the heavy metal which has been existed in layer of ground from along time ago. Hexavalent chromium (cr+6) concentration in ground water is about 0.07 mg/l that is higher than maximum contamination level. The maximum contamination level of Cr+6 is 0.05 mg/l according WHO guideline. Many researches were investigated to remove of this element from water to reach a standard level, yet. Removal of chromate CrO42- from water was investigated using nanofiltration as a possible method. In this paper, removal of hexavalent chromium, as a most dangerous state of this metal, from water by nanofiltration was investigated. To reach this aim, many tests were performed in pilot scale and aqueous solution contain Cr (VI) was passed through 90\_2540 NF. The effect of parameters such an applied pressure, initial concentration, pH, temperature and ionic effects investigated on hexavalent chromium by nanofiltration. First, the optimum applied pressure of 8 bars induced in 96.41%, efficiency. Then, efficiency removal reduced from 96.12 to 92.88% by increment of initial Cr concentration from 0.080784 to 0.63847. By last optimum applied pressure and initial chromium concentration, the pH of feed increased from 3.5 to 10.5 and the optimum removal efficiency reached in pH=10.5. In the other hand, changing temperature did not lead in any logical relation between removal efficiency and temperature. Finally; the results demonstrated that NF membrane can remove hexavalent chromium with 85% average efficiency. Also, pH role was more considerable parameter than .other parameters

## کلمات کلیدی:

Water Treatment, Hexavalent Chromium Cr (VI), Nanofiltration, Southern Khorasan

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