A novel chromium selective electrode based on surfactant-modified Iranian clinoptilolite nanoparticles

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\begin{abstract}
A novel modified hexadecyltrimethyl ammonium surfactant-modified nanoclinoptilolite electrode was constructed for the potentiometric determination of dichromate and showed a Nernstian response in the concentration range of $7.0 \times 10^{-6}$ – $1.0 \times 10^{-1}$ M. A Nernstian slope of $29.7 \pm 0.9$ mV per decade of dichromate concentration and a detection limit of $3.1 \times 10^{-7}$ M dichromate were obtained for the proposed electrode. The proposed electrode exhibited a rapid response about 10 s over a period of 2 months with good reproducibility and also without any considerable divergence in potential response. It was also applied as an indicator electrode in the potentiometric titration of dichromate.

\textbf{Keywords:} Ion-selective electrode; Dichromate; Surfactant-modified zeolite; Nanoparticles; Clinoptilolite
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