

Abstract:

Ion selective electrode is a sensor which converts the specific ion dissolved in a solution into an electrode potential. Direct potentiometry based calcium ion selective electrodes has been established as precise and reliable analytical tool for determining calcium ions. A new, efficient seven calcium ion selective electrodes have been prepared using different ionophores. Characterization of the ionophores was done using UV, IR, SEM and XRD analysis. The prepared sensors revealed Nernstian response and relatively good selectivity and sensitivity for Ca(II) ion over a mono and divalent cations and can be used in the acidic pH range. The electrodes were successfully used as an indicator electrode in the potentiometric titration of Ca(II) ion with EDTA and were also applied to the direct determination of Ca(II) ion content in various real samples.