

Swelling Behaviour of Kappa Carrageenan Hydrogel in Neutral Salt Solution

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Abstract : Hydrogel films were prepared from kappa carrageenan by crosslinking with glutaraldehyde. Carrageenan films extracted from *Kappaphycus alvarezii* seaweed were immersed in glutaraldehyde solution for 2 min and then cured at 110 °C for 25 min. The obtained crosslinked films were washed with ethanol to remove the unreacted glutaraldehyde and then air dried to constant weights. The aim of this research was to study the swelling degree behaviour of the hydrogel film to neutral salts solution, namely NaCl, KCl, and CaCl₂. The results showed that swelling degree of crosslinked films varied non-monotonically with salinity of NaCl. Swelling degree decreased with the increasing of KCl concentration. Swelling degree of crosslinked film in CaCl₂ solution was lower than that in NaCl and in KCl solutions.

Keywords : carrageenan, hydrogel, glutaraldehyde, salt, swelling

Conference Title : ICCEPT 2016 : International Conference on Chemical Engineering and Process Technology

Conference Location : Venice, Italy

Conference Dates : August 08-09, 2016