

## **Synthesis of Crosslinked Konjac Glucomannan and Kappa Carrageenan Film with Glutaraldehyde**

**Authors :** Sperisa Distantina, Fadilah, Mujtahid Kaavessina

**Abstract :** Crosslinked konjac glucomannan and kappa carrageenan film were prepared by chemical crosslinking using glutaraldehyde (GA) as the crosslinking agent. The effect crosslinking on the swelling degree was investigated. Konjac glucomannan and its mixture with kappa carrageenan film was immersed in GA solution and then thermally cured. The obtained crosslinked film was washed and soaked in the ethanol to remove the unreacted GA. The obtained film was air dried at room temperature to a constant weight. The infrared spectra and the value of swelling degree of obtained crosslinked film showed that glucomannan and kappa carrageenan was able to be crosslinked using glutaraldehyde by film immersion and curing method without catalyst. The crosslinked films were found to be pH sensitive, indicating a potential to be used in drug delivery polymer system.

**Keywords :** crosslinking, glucomannan, carrageenan, swelling

**Conference Title :** ICCE 2015 : International Conference on Chemical Engineering

**Conference Location :** Barcelona, Spain

**Conference Dates :** August 17-18, 2015