

Preparation of ionogel films using water-soluble cellulose

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Ionogel films have been prepared using water-soluble ionic cellulose which was obtained by the reaction of cellulose and 1,3-dimethylimidazolium phosphite ([DMIm]MeO(H)PO₂) at 120 °C for 6 h. Although the ionic cellulose could form transparent thin film by itself, the prepared film is fragile. The flexibility of ionic cellulose film increased by the addition of [DMIm]MeO(H)PO₂. The thermal properties of prepared films were measured using differential scanning calorimetry (DSC) and thermogravimetry (TGA). The tensile strength test was also conducted to investigate the mechanical properties of ionogel films. The lacerated ionogel films could be healed in a few minutes by applying very small amount of water at the lacerated surfaces.