

The preparation and characterization of biomass-based superabsorbent hydrogel

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Superabsorbent hydrogel (SAH) is actively used in various fields such as forestry, agriculture, sewage treatment and sanitary products. The absorption characteristics of these SAHs, the centrifuge retention capacity and the absorbency under load (AUL), are particularly important characteristics. We prepared novel SAHs made up of poly(itaconic acid-co-acrylic acid) and poly(itaconic acid-ter-acrylic acid-ter-vinyl sulfonic acid). Polyethylene glycol diacrylate and 1,6-hexanediol diacrylate are used as internal crosslinking agents, and NaPS was used as an initiator. Butane diol was used as the surface crosslinking agent to enhance AUL of SAHs. We used FT-IR and <sup>13</sup>C-NMR to analyze the structure of the synthesized SAH. We characterized their structure using FT-IR spectroscopy and <sup>13</sup>C-NMR. Conversion and gel fraction were measured to analyze the synthesis efficiency.