

Potato starch adhesive prepared by graft polymerization with vinyl acetate monomer

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In this study, starch adhesive that can be used at room temperature was prepared by the grafting of VAc onto potato starch using sodium persulfate (SPS) as the initiator. The bonding strength and water resistance of the adhesive were examined to evaluate the effect of the grafting reaction on the adhesive system.

The starch/monomer ratio was varied to evaluate the bonding properties. Fourier-transform infrared (FTIR), Thermogravimetry (TG), Differential scanning calorimetry (DSC) techniques were used to obtain information on the chemical structure of the grafted starch copolymer. As a result, FT-IR was used to confirm the graft modification of starch. The copolymer showed new characteristic peaks of ester at 1240 and 1740  $\text{cm}^{-1}$  in the infrared spectrogram. The thermogravimetric (TG) curves of gelatinized starch, PVAc, grafted copolymer and the blend of PVAc/starch were confirmed.