INVESTIGATION OF INTERACTION BETWEEN WOOD BASIC COMPONENTS AND PHENOL FORMALDEHYDE RESIN BY IR SPECTROSCOPY

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ABSTRACT

The interaction between wood and phenol formaldehyde resin was investigated. From beech wood (Fagus silvatica from Central Balkan mountain, Bulgaria) cellulose, holocellulose and lignin were obtained. Mixtures with resole phenol formaldehyde resin (PFR) were made and after treatment at different temperatures and pressures their IR spectra were obtained. The hydrogen bond formation in these samples was characterized by shift of the bands, their peaks width at half height and ratios between absorbances. The efficiency of the treatment and activity of the wood derivates in this process were determined. The changes in crystalline of cellulose and holocellulose were calculated by the crystalline index (CI).

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