



**Abstract:** The correlations between the surface properties of the modified cellulose papers with their toner compatibility were investigated. The surface tension components of the cellulosic films, their interfacial tension with the liquid drops and the work of adhesion components were calculated using van Oss-Good's One-Liquid contact angle approach. The electron donor (or Lewis base)  $\gamma^-$  components of the cellulosic films were found to represent the main interactions with the the electron acceptor (acidic)  $\gamma^+$  components of the contacting liquids. Allyl ketene dimer (AKD) grafting of the cellulose affected the surface properties; the higher the substitution of the hydroxyl groups, the smaller the basicity of the modified cellulose and correspondingly the smaller the total surface tension. The C-AKD surfaces showed hydrophobic character in a non-polar environment. A negative value for water / unmodified cellulose acid-base interfacial tension component was found showing that the cellulose surface was adsorbing the water molecules due to hydration. The spreading film pressures of water,  $\pi_e$ , on the cellulosic films were calculated and surprisingly negative values of  $\pi_e$  were found for unmodified cellulose, cellulose acetate and C-AKD-1 films, which are impossible thermodynamically. It is probable that the hydration of the cellulosic film surface and the adsorption of water molecules resulted in the decrease of  $\gamma_s^{\text{LW}}$  values and the negative values of  $\pi_e$ .

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