

### Characterization of softwood biomass pretreated by an ionic liquid

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Interests on ionic liquids have increased due to good non-volatility and non-flammability, high electric conductivity, excellent catalytic activities, good phase separation performances. In this work, the influence of temperature and duration time on the biomass pretreatment was investigated using an ionic liquid, 1-Butyl-3-methylimidazolium Chloride (BMIMCl). Through various characterization methods, increase in biomass dissolution and lignin extraction was observed with increasing temperature and time. In addition, pretreated softwood biomass by the ionic liquid pretreatment showed significantly different change in surface morphology, crystalline structure and functional groups compared to original wood.