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Synthesis and characterization of carboxymethyl cellulose (CMC) from palm frond.

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Abstract

Various raw materials like plant bio mass have been used to produce cellulose , the aim of this study was ,to extract cellulose from palm frond ,then to convert the extracted cellulose to carboxymethyl cellulose (CMC) by etherification using sodium monochloro acetic acid and sodium hydroxide, the reaction was optimized against temperature ,concentration and reaction time ,the optimized product has a large degree of substitution 0.77 was determined at temperature 55 C, sodium concentration 30%, amount of (MCAA) 3g per 1g of cellulose and reaction period 4 hours it's found that ,when the concentration of NaoH was increased beyond 30% , an obvious decrease in DS was observed. (FTIR),(XRD),(TGA) spectrum were used to characterize the synthesized CMC .