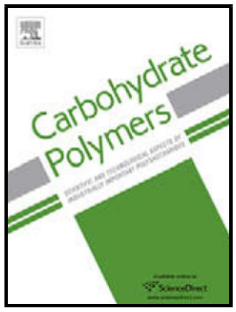

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Characterization and application of cellulose acetate synthesized from sugarcane bagasse

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Highlights

- Evaluation of the cellulose acetate synthesis from sugarcane bagasse
- Physical and thermal characterization of sugarcane bagasse cellulose acetate
- Application of cellulose acetate in membrane preparation
- A cellulose acetate with degree of substitution of 2.52 and 43.50% of acetyl groups was obtained
- Lignin and hemicellulose content increased the thermal resistance of the membranes

Abstract: The synthesis and application of cellulose acetate (CA) from sugarcane bagasse were investigated. Firstly, cellulose was extracted by a sequential treatment with H_2SO_4 (10 % v/v), NaOH (5% w/v), EDTA (0.5 % w/V), and H_2O_2 (5% v/v), and characterized by X-ray diffraction (DRX). After the acetylation of the extracted cellulose, CA was characterized using Fourier transform infrared spectroscopy (FTIR), differential scanning calorimetry (DSC), and