

N°535 / PC

TOPIC(s) : Polymers / Chemical engineering

Preparation and Characterization of Microcrystalline Cellulose (CMC) from Renewable Source

AUTHORS

Manal YACOUB / AMAR THELIDJI UNIVERSITY, CITE 5 JUILLET HASSI R'MEL LAGHOUAT. ALGERIE, LAGHOUAT

PURPOSE OF THE ABSTRACT

The work was aimed at the extraction of microcrystalline cellulose (CMC) from palm tree leaves (PTL) by acid hydrolysis using hydrochloride acid. Basic chemical pretreatments, bleaching and scouring was given to the PTL before extraction to remove natural colorants and hydrophobic impurities like oils, waxes, minerals, fats etc. The property of CMC was considerably different from the PTL. The chemical composition showed that both hemicellulose and lignin are mostly removed in the palm tree β -cellulose (PTC). The PTC and CMC were characterized by using X-ray diffraction, thermogravimetric analysis, Fourier transform infrared spectroscopy, Water Retention Value and Surface Area (BET).

FIGURES

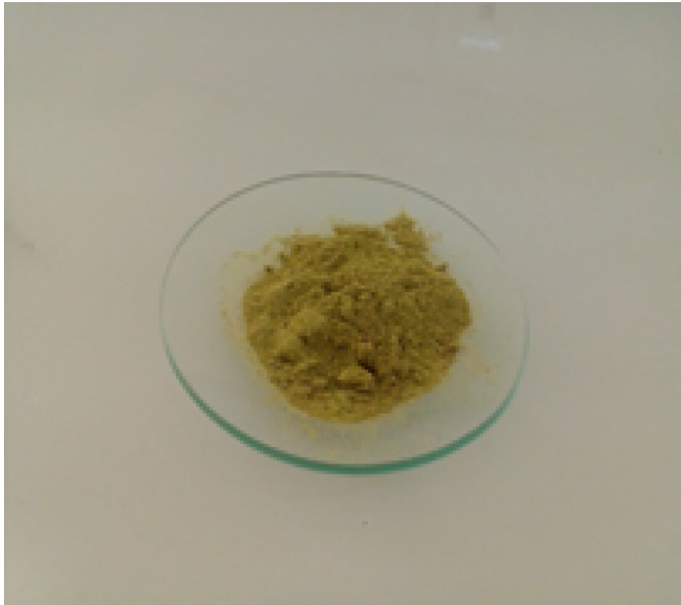


FIGURE 1
palm tree fibres
PNG

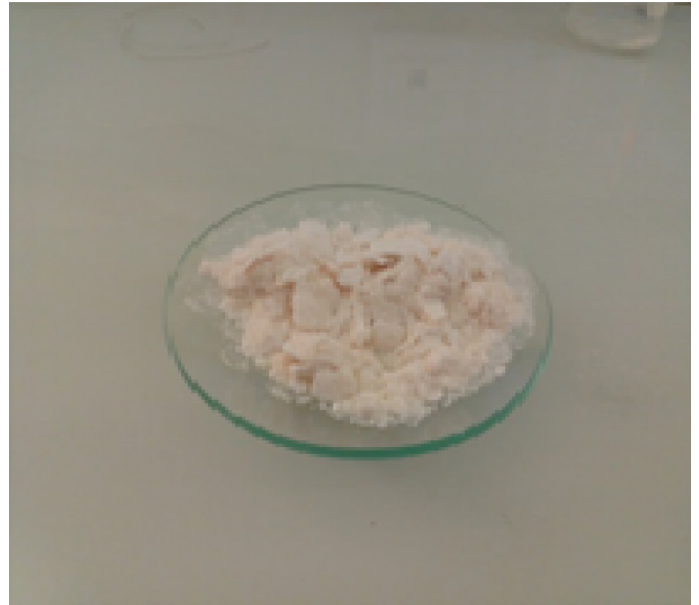


FIGURE 2
Microcellulose
PNG

KEYWORDS

palm tree leaves | microcrystalline cellulose | cellulose | characterization

BIBLIOGRAPHY

- Achor M, Oyeniya Y, Yahaya A (2014) Extraction and characterization of microcrystalline cellulose obtained from the back of the fruit of *Lageriana siceraria* (water gourd). *J Appl Pharm Sci* 4(1):057–060.
- Shanmugam N, Nagarkar RD, Khurade M (2015) Microcrystalline cellulose powder from banana pseudostem fibres using biochemical route. *Indian J Nat Prod Resour* 6(1) : 42–50