

N°564 / OC

TOPIC(s) : Polymers / Biomass conversion

Polymerization of  $\alpha$ -pinene by Natural Montmorillonite clay.

## AUTHORS

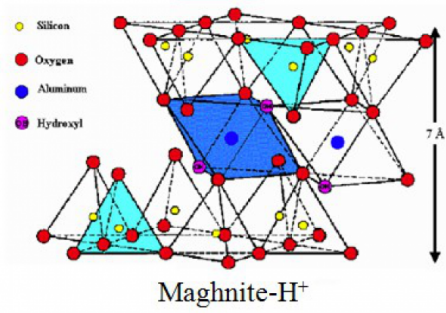
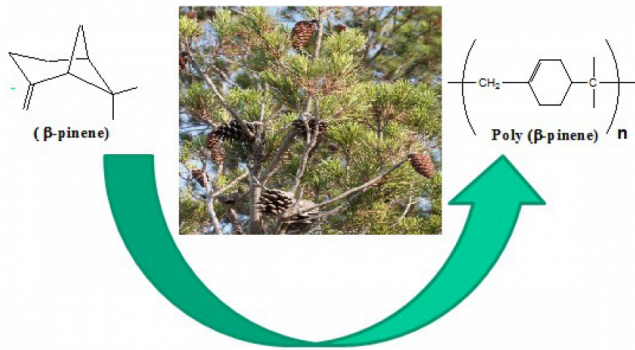
Amine HARRANE / DEPARTMENT OF CHEMISTRY FSEI, UNIVERSITY ABDELHAMID IBN BADIS-MOSTAGANEM, FACULTY OF EXACT SCIENCES AND COMPUTER, MOSTAGANEM

## PURPOSE OF THE ABSTRACT

Environmental friendly catalytic processes of biomass valorization to produce chemicals with high added value, are an important field which are continuously attract more attentions in chemical engineering.

Biomass derived  $\alpha$ -pinene issued from pin trees is an essential compound for fine chemical industry. It is the precursor of non toxic and inert poly( $\alpha$ -pinene) used as additive for rubbers, food packaging, casting industries and in the production of chewing gums. In this paper, we report an efficient and environmentally method to produce poly( $\alpha$ -pinene). We have used an algerian Montmorillonite clay as an heterogeneous non toxic catalyst to induce the polymerization of ( $\alpha$ -pinene). Spectroscopic methods such as FT-IR, <sup>1</sup>H NMR, GPC chromatography and viscosimetry were used to confirm the structure of the obtained polymer. Effects of Maghnite/monomer weight-ratio, temperature and solvent on the yield of the polymerization and on the average molecular weight  $M_v$  of the resulting polymers were studied. The thermal properties (DSC) of the resulted poly( $\alpha$ -pinene) were also studied.

## FIGURES



**FIGURE 1**

figure 1

Polymerization of b-pinene by Maghnite-H<sup>+</sup>

**FIGURE 2**

## KEYWORDS

## BIBLIOGRAPHY