

# **Poly(vinyl chloride) blend with biodegradable cellulose acetate in presence of N-(phenyl amino) maleimides**

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## **International Journal of Biological Macromolecules**

Volume ٧٠ (٢٠١٤) ١٢٤–١٣٠

Impact factor: ٣.١٣٨

### **A b s t r a c t**

Wider plastic applications of poly(vinyl chloride) (PVC) has raised serious problem to the environment. Since (PVC) waste products resist biodegradation and persist in the environment for longer time. The object of this study is to blend (PVC) with biodegradable cellulose acetate to thermally support the polymer during the molding process as well as to enhance the biodegradability of (PVC) waste products. Blending of poly(vinyl chloride) and cellulose acetate (CA) in presence of N-(phenyl amino) maleimides (R-PhAM) where (R = H,  $\epsilon$ -NO<sub>2</sub>) led to improvement in the thermal stability of the blend film at high temperatures as shown from the high values of initial decomposition temperature (T<sub>0</sub>) determined from their thermogravimetry (TG) curves. Also, blending (PVC) with (CA) led to improvement in the mechanical properties of the blend films as compared to (PVC). The crystalline regions of cellulose acetate enhanced the elasticity of the blend films as shown from their high Young's modulus values.

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