

## EXTRUDED POLY(ETHYLENE-CO-VINYL ALCOHOL) COMPOSITE FILMS REINFORCED WITH CELLULOSIC FIBERS ISOLATED FROM TWO LOCAL ABUNDONATES PLANTS

L. Benchikh<sup>1\*</sup>, A. Merzouki<sup>1</sup>, Y. Grohens<sup>2</sup> and I. Pellin<sup>2</sup>

<sup>1</sup>Laboratoire de Physico-Chimie des Hauts Polymères, Département de Génie des Procédés,  
Faculté de Technologie, Université Ferhat Abbas Sétif 1, Algérie

<sup>2</sup> Institut de Recherche Dupuy de Lôme, UMR CNRS 6027, Université de Bretagne Sud,  
Lorient, France

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### ABSTRACT

El Diss and El Retma fibers are in abundance in North Africa, collected from Setif (Algeria) and have been treated to isolate cellulose fibers with toluene-ethanol and HNO<sub>3</sub> to improve their dispersion into EVOH matrix. SEM micrographs and FTIR analyses of the treated fibers confirmed the elimination of non cellulosics materials and thier cristallinity was estimated by DRX. Thermal analyses by TGA indicate a slight improvement compared to the raw fibers. Composites were also prepared by incorporation of the cellulosic fibers in EVOH matrix. FTIR results and water absorption behavior indicate a reaction between the treated fiber and EVOH matrix by forming hydrogen bonds. Thermal properties of the composites reported by DSC results decreased compared to neat EVOH. The addition of cellulosic fibers led to an increase in the loss and storage modulus and melt viscosity of the composites.

**Keywords:** El Diss fibers, El Retma fibers, cellulose, biocomposites

Author Correspondence, e-mail: [lilia.benchikh@gmail.com](mailto:lilia.benchikh@gmail.com)

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