This abstract is intended for (double click the selected box and then check):

Oral presentation ☐
Poster presentation ☒
Invited lecture ☐

UV STABILITY OF BIOBASED COPOLYMERS

I.Moura[1*]; A.V, Machado[1]; G.botelho[2]

[1] *IPC/I3N – Institute for Polymers and Composites, University of Minho, Campus de Azurém, 4800-058 Guimarães, Portugal*
isabelm@dep.uminho.pt
[2]*Centro de Química, University of Minho, Campus de Gualtar, 4710-057 Braga, Portugal*

[*] isabelm@dep.uminho.pt

Limited resources of petroleum based polymers and increased environmental concern has attracted a great interest towards biodegradable and biobased plastics for packaging applications. Among the wide range of biodegradable polymers available, poly(lactic acid) (PLA) has high tensile strength, gloss and clarity, biodegradability, and recyclability. The major weaknesses associated with PLA are its poor elongation at break, low barrier properties, narrow processing window and low melt strength. Therefore, synthesis of copolymers of PLA and a non-biodegradable polymer could improve PLA properties. These copolymers were previously prepared in the melt using ethyl vinyl acetate (EVA) as a non-biodegradable polymer and titanium propoxide ($Ti(OPr)_4$) as a catalyst.
Since the application of these materials depends on their photo stability, the present work aims to study the influence of UV radiation and oxygen on chemical changes and consequently on physical properties. Thus, PLA, EVA and the prepared materials were submitted to accelerated weathering in a *Xenontest 150 S* chamber and were characterized by FTIR and UV spectroscopy along the degradation time. The mechanical properties were also evaluated.
The results showed that the prepared materials are more stable to UV radiation than the individual polymers.

Acknowledgement: The authors are grateful to FCT for funding through the project SFRH/BD/29802/2006.

Keywords: Ethyl vinyl acetate; polylactic acid, grafting, photodegradation.