

3rd International Conference on

Food & Beverage Packaging

July 16-18, 2018 | Rome, Italy

Oxidized starch as an alternative ingredient in thermoplastic starch/PBAT formulations for packaging film applications

Guralp Ozkoc and Buse Nur Can
Kocaeli University, Turkey

In this study, the biodegradable blends of Thermo-Plastic Starch/Poly(Butylene Adipate-co-Terephthalate) (TPS/PBAT) and Oxidized Thermo-Plastic Starch/Poly(Butylene Adipate-co-Terephthalate) (OTPS/PBAT) were melt compounded in the presence of styrene-acrylic multi-epoxidized polymeric compatibilizer. The need for OTPS is to balance the hydrophilicity. The compatibilizer is used to enhance the interfacial properties and the phase dimensions. The TPS/PBAT, OTPS/PBAT and the compatibilizer ratio were selected as material parameters. The TPS/PBAT and OTPS/PBAT blends with and without compatibilizer were characterized by tensile, impact tests; Differential Scanning Calorimeter (DSC), Thermo-Gravimetric Analysis (TGA) and Fourier Transform Infrared Spectroscopy (FTIR). The rheological behavior was investigated by means of oscillatory rotational rheometer. The morphology investigated by means of Scanning Electron Microscopy (SEM). It was founded that the multi-epoxide compatibilizer improved the mechanical and rheological properties of the blends.

Biography

Guralp Ozkoc has received his PhD degree in 2007 at the Polymer Science and Technology Department, Middle East Technical University. He worked as a PhD intern at DSM Research in 2005, in The Netherlands. He started as Assistant Professor in Kocaeli University, Department of Chemical Engineering in 2008. He had Chaired the Polymer Science and Technology graduate programme for six years from 2011 to 2017. He has supervised 25 MSc thesis and 10 PhD thesis. He holds five patents and he is the author of many international scientific papers and proceedings.

guralpozokoc@gmail.com