

Keynote Paper

## **Effects of reactive blending on the properties of poly(lactic acid) (PLA)/liquid polybutadiene rubber (LPB) blends**

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### **ABSTRACT**

In this work, we systematically investigated on the effects of reactive blending on the thermal and mechanical properties of blends of poly(lactic acid) (PLA) and a liquid rubber, polybutadiene (LPB). The toughened PLAs were prepared by melt-blending the PLA with various contents (0-9 wt.%) of the LPB in the absence or presence of dicumyl peroxide (DCP), a radical initiator. It was found that the rubber domains were homogeneously dispersed at the nanoscale in the PLA matrix up to 9 wt.% of LPB thanks to the reactive blending in the presence of DCP. Owing to the compatibilization of PLA with LPB through reactive blending, the elongation and toughness of PLA was enhanced, while the hydrolytic degradation of PLA were reduced.

### **REFERENCE**

Choi, K.M., Choi, M.C., Han, D.H., Park, T.S., Ha, C.S. (2013), "Plasticization of poly(lactic acid) (PLA) through chemical grafting of poly(ethylene glycol) (PEG) via in situ reactive blending," *Eur. Polym. J.*, **49**, 2356-2364.

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