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## The effect of branching agent on the processability and mechanical properties of polylactic acid/natural rubber blown film

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Polylactic Acid (PLA) is currently known to be the cheapest and the most prevalent commercial bio-plastic. However, its poor toughness and processability limited its applications in film blowing products. In this study, improvement in the toughness of PLA was investigated by blending with Natural Rubber (NR) with the aid of a plasticizer. The improvement in the bubble stability during film blowing process was investigated by using a peroxide Branching Agent (BA). The compound of PLA, NR and a branching agent (PLA/NR/BA) was prepared by reactive melt blending method. The parameters investigated are the PLA to NR ratio, the content of branching agent on the mechanical properties, processability and morphology of the blend. The results indicated that NR could increase the tensile toughness and elongation at break of PLA blown films and the use of higher amount of branching agent could allow stable processing of PLA/NR blends at higher NR content. The reactions of branching agent with PLA and NR were verified by Fourier-transform infrared spectroscopy.

### Biography

Cattaleeya Pattamaprom is currently the Head of Polymer and Rubber Technology Center and an Associate Professor at the Department of Chemical Engineering, Thammasat University, Thailand. She has obtained her Doctoral degree with specialization on theoretical modeling of polymer rheology from the University of Michigan, USA. Her research areas include rheology and theoretical modeling of polymer and rubber, polymer and rubber modification, polymer/rubber processing, composites and blends.

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