

## Title: Natural Rubber-Based Biodegradable Packaging

Due to more serious environmental concerns, the problem of nondegradable plastic wastes has been critically addressed these days including the no-plastic-bag campaigns by many hospitals, supermarkets, and convenient stores in many countries. However, the needs for plastic bags in many applications and locations lead to alternatives like biodegradable plastic bags. In our group, we have long developed low-cost biodegradable packaging film based on polylactic acid (PLA) and natural rubber (NR). The inspiration for our work is the cost-competitiveness of PLA and NR and the oversupply of natural rubber worldwide. The challenges of this development were 1) the extreme incompatibility of PLA and NR, 2) the difficulty of feeding NR into conventional plastic compounder like twin-screw extruder 3) the poor processibility and thermal instability of PLA. So far, we have continuously resolved these problems. In this talk, the role of additives and compounding techniques will be addressed and the potential use of the PLA/NR plastic bags will be shown by comparing with other commercial plastic bags and relevant standards.

