

ABSTRACT

This research has a purpose to investigate the effect of combination compositions of polypropilene (PP) with natural rubber (NR) and of sulfur composition at property and morphology of NR/PP blending by means of dynamic vulcanization. Making of mastication and compound rubber can be done by helping of roll mill equipment at room temperature with a speed of 18 rpm. the Blending of PP/NR was done in an internal mixer in the NR/PP mass ratio of 40/60, 50/50, 60/40. As a curative agent for dynamic vulcanization in the NR, the sulfur composition made were of 1 and 3 phr (per hundred rubber). The blending was done at temperature of 180° C and a speed of 60 rpm. The properties analysed here were tensile strength of blending matters which were tested by means of universal testing machine in regard with ISO 527-3-5 as a standard. The blending morphology was analysed with an equipment of Scanning Electron Microscopy (SEM). From this research it can be concluded that the more compositions of NR has a higher elongation at break and a lower tensile strength. In the contrary, the more dominant PP compositions blending has a higher tensile strength and a lower elongation at break. From morfology analyse can be concluded that the crosslinkage of vulcanized rubber is more complete at higher compositions of sulfur. In addition, rubber phase distribution in the matrices of PP is more complete as well as the sulfur compositions are made higher. This can be viewed from the scanned photograph in which the higher sulfur compositions of blending has a narrower distance of molecules.

Keywords : natural rubber (NR), polypropilene (PP), dynamic vulcanization