

ABSTRACT BOOK



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Rubber Compounding and Composites

Mechanistic Consideration of Filler Network in Carbon Black Filled Tire Rubbers

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Abstract: Filler network or filler-filler interaction is a main factor contributing qualities of carbon black filled rubber. This paper proposes the behavior of filler network formation of carbon black filled tire rubbers: Natural Rubber (NR), Styrene Butadiene Rubber (SBR), Butadiene Rubber (BR) and Bromo-Butyl Rubber (BIIR). Strength of the filler network in the green compounds as well as in the vulcanizates at several of types and carbon black contents has been analyzed. The degree of filler network formation in rubber matrix depends on both filler surface area and filler loadings. It was found that high filler surface area and loadings resulted in high filler network formation. Typical polarity of each tire rubber has been found to play an important role on the formation of filler networks before and after vulcanization.
