



Sudip Ray

**Novel Surface Modified Silica
and Clay**
Influence on Morphology and Physical Properties in
Ethylene-Octene Copolymer



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Novel Surface Modified Silica and Clay written by Dr. Sudip Ray discusses the general aspects of fillers, the need for modifying the filler surface and its influence on polymer composites. It deals with surface modification of precipitated silica and kaolin clay by coating the fillers with an acrylate monomer, or a silane coupling agent, followed by electron-beam irradiation. Hybrid clay fillers were also developed by organic modification. The book explores characterization of the modified fillers by several analytical techniques. Additionally, the effect of filler surface treatment was determined by incorporating these modified fillers in Ethylene- Octene Copolymer primarily on processability and vulcanizate properties. A generalized exponential equation based on mechanical and dynamic mechanical studies was proposed to explain the Payne effect on filler-filler networking in silica filled composites. The comprehensive text provides wide- ranging experimental details and crucial analysis methodologies indispensable in the field of polymer composites and hence is highly suitable for both academia and industry.

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