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## A Quantitative Approach to Study the Interface of Carbon Nanotubes/Elastomer nanocomposites

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### Abstract

The interface between nanofillers and elastomers is one of the most important factors to determine the performance of elastomer nanocomposites. In this study, for the first time, we developed a method to quantitatively characterize the interfacial layer thickness of carbon nanotubes (CNTs)/Natural rubber (NR) composites by using peak force quantitative nanomechanical mapping (PF-QNM) technique of atomic force microscopy (AFM). We obtained the modulus and adhesion distribution of the composites, and selected those CNTs close to the sample surface, where the CNTs show lower adhesion for the accurate characterization of the interfacial thickness. Then, we

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