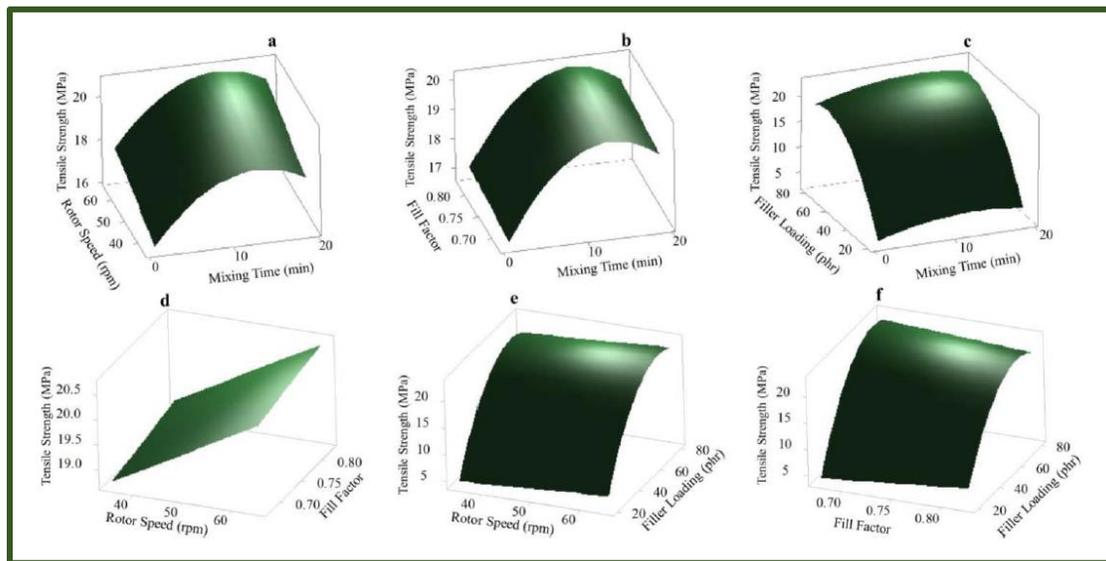


Study on Mixing and Properties of Styrene-Butadiene Rubber Filled with Carbon Black

Most rubber industries have to optimize the setting of various mixing factors to yield the desirable final properties. However, this has mainly evolved by trial and error rather than by adjustment using scientific data. This work aims to investigate and quantify the effects of various mixing parameters and their interactions on the state-of-mix and, consequently, the properties of the rubber products. The studied independent parameters include mixing time, rotor speed, fill factor, and filler loading. The measured properties include specific mixing energy, dispersion index, Payne effect, bound rubber content, and tensile properties.

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Three-dimensional surface plots of the tensile strength as affected by various mixing parameters

Reference:

J. Narongthong, P. Sae-Oui, **C. Sirisinha**, Effects of Mixing Parameters and Their Interactions on Properties of Carbon Black Filled Styrene-Butadiene Rubber, Rubber Chemistry and Technology 91 (3), 521-536, 2018.

