

Presentation title: Reinforcing elastomers with more durable fillers.

Corresponding Author name: Auché Doriane

Affiliation: PhD student

Ph. No: +33 7 83 20 26 36

Email ID's: doriane.auche@univ-rennes.fr

WhatsApp No: +33 7 83 20 26 36

Presentation type: Poster presentation



Abstract:

Carbon black filled natural rubber (CB-NR) is the most commonly used elastomer for anti-vibratory applications in the automotive industry. However, 95% of CB is derived from the partial combustion of heavy petroleum products. Its production exhausts fossil resources and consumes significant amounts of energy. The production of one ton of CB emits around 2.4 tonnes of CO₂. With the objective of reducing the environmental impact of rubber products, this study investigates the mechanical properties of compounds filled with alternative fillers such as lignin, rice husk ash and recovered carbon black. Alternative compounds were prepared, and samples were molded by injection. Then, the static and dynamic properties were characterized. The results are presented and discussed in terms of filler dispersion and filler-matrix interface.

Biography:

After graduating with a degree in materials engineering, I am currently working on a PhD thesis supported by Continental at the Institute of Physics (University of Rennes). This PhD thesis gives me the opportunity to apply my knowledge of materials science to the rubber industry, but also to work on a sustainable development aspect by trying to reduce the environmental impact of rubber formulations.