Renewable Cellulose-based Fillers

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The substitution of petrochemical materials with those obtained from renewable raw materials is an important step towards increasing sustainability. Materials derived from plant cellulose are promising candidates for this application area. They are renewable, abundant and have a low environmental impact. In the rubber industry, microfibrillated cellulose (MFC) is receiving a lot of attention due to its high stiffness, the morphology of its fibrils, its low density and its mechanical properties. Thus, it has a high potential to improve the properties of rubber compounds.

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The results show good compatibility between the MFC filler and the rubber matrix with strong reinforcing effects, even better than those achieved with conventional petroleum-based aramid fibers. The development of these novel fillers will be an important step towards increasing the sustainability of rubber products such as pump diaphragms.

Two years from research to industy implementation

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"This project is a very good example of how valuable Innosuisse's support is for such successful innovation projects, which not only strengthen and economically advance the companies themselves through novel products and processes, but ultimately also the entire location of Switzerland", says Empa researcher Thomas Geiger.

Read the original article on Empa.