



Understanding the Reinforcement behaviour of Modified Hydrothermally treated Lignin

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Use of Hydro-Thermally Treated (HTT) lignin as a rubber filler is a promising approach to improve sustainability of elastomers. By applying the HTT process, renewable and abundantly available lignin feedstocks can be successfully converted to a reinforcing filler for rubber application with stable morphology, purity, enlarged functional surface and thermal stability. This study focusses on the effect of HTT lignin on the mechanical properties of rubber compounds in the presence of modifiers to open new opportunities of this bio-based reinforcing filler.

Keywords: *Lignin, Hydrothermal treatment, Bio filler, Sustainability, Renewability, In-rubber properties*