Silicone-modified graphene oxide fillers via the Piers-Rubinsztajn reaction - DTU Orbit (08/11/2017)

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While graphene or graphene oxide can make significantimprovements in the properties of a wide variety of polymericmaterials, their incorporation can be challenged byincompatibility with the polymeric matrix. The modification ofgraphene oxide with silicones or silanes using the Piers-Rubinsztajn reaction improves dispersibility in nonpolar materials,including organic solvents and silicone pre-elastomers. Ahigh loading (up to 10 wt %) of modified graphene oxide insilicone elastomers could be achieved, which resulted inenhanced mechanical performance and reduced gas permeability.

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