

碳纳米管在聚合物基体中均匀分散并增强其与聚合物的结合,从而提高了复合材料的物理性能。

3 结论

(1)通过酚醛树脂包覆改性,碳纳米管表面有机基团增多,表面势能减小,自团聚效应降低,在橡胶基体中的分散性及与基体的结合能力提高,降低了导热填料与橡胶基体间的界面热阻,碳纳米管彼此更易接触形成导热网链,提高了复合材料的热导率和物理性能。

(2)提高酚醛树脂与碳纳米管用量比有利于提高复合材料的导热性能和物理性能。

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Effect of Modified Carbon Nanotubes on Thermal Conductivity and Physical Property of EPDM

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Abstract: The carbon nanotubes, unmodified and modified by phenolic resin, were filled into EPDM. The dispersion of carbon nanotubes in rubber was analyzed, and the thermal conductivity and physical properties of carbon nanotube/EPDM composites were investigated. The results showed that, after modification of carbon nanotubes, carbon nanotubes were well dispersed in rubber matrix, and the thermal conductivity and physical property of the composite were improved. When the mass ratio of carbon nanotubes to phenolic resin was 1 : 1, the thermal conductivity of the composite was higher, and the physical properties were better.

Key words: EPDM; modified carbon nanotubes; thermal conductivity; physical property

一种耐高温橡胶输送带及其生产方法

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由浙江保尔力胶带有限公司申请的专利(公开号 CN 103289152A, 公开日期 2013-09-11)“一种耐高温橡胶输送带及其生产方法”, 涉及的耐高温橡胶输送带包括主体材料和橡胶覆盖胶,

其中橡胶覆盖胶配方为: 丁苯橡胶 80~120, 炭黑 20~50, 硬脂酸 10~20, 软化剂 5~10, 防老剂 2~5, 多结晶水化合物 20~50, 硫化剂 2~10, 硫黄 0.1~1, 促进剂 2~3。该耐高温橡胶输送带具有耐热性能好、使用寿命长的优点。

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