

Phase Structure and Thermoelectric Properties of One-dimensional MWCNTs Reinforced IIR/PP TPV Composites

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Abstract: The one-dimensional multi-walled carbon nanotubes (MWCNTs) reinforced butyl rubber (IIR) / polypropylene (PP) thermoplastic dynamic vulcanizate (TPV) composites were prepared. The effects of IIR/PP dosage ratio (rubber/plastic ratio) on the phase structure, dielectric property, thermal conductivity and physical properties of the composites were studied. The results showed that the composites had a “sea-island” phase structure, and the IIR phase was dispersed in PP phase as crosslinked micron-size particles. MWCNTs were mainly dispersed in PP, and began to agglomerate with the increase of the rubber/plastic ratio. The AC conductivity, dielectric constant and thermal conductivity of the composites increased with the increase of the rubber/plastic ratio, and the increase rate decreased when the rubber/plastic ratio was above 6/4. With the decrease of the rubber/plastic ratio, the tensile strength of the composites increased first and then decreased. When the rubber/plastic ratio was 5.5/4.5, the physical properties of the composites were better.

Key words: MWCNTs; TPV; IIR; PP; phase structure; thermoelectric property

橡胶行业多个项目上榜山东省2022年 重大化工项目名单

日前,山东省下达2022年省重大项目名单,其中重大实施类项目449个、重大准备类项目151个,总投资2.14万亿元。橡胶行业多个项目入选。

星宇新材料股份有限公司年产40万t高性能合成胶乳项目和5万t水基型聚氨酯胶粘剂项目、山东昌泰高分子材料股份有限公司年产10万t丙烯酸酯橡胶新材料项目、山东恒源石油化工股份有限公司退城入园转型升级项目(其中包括年产橡胶增塑剂12.5万t)、山东日科橡塑科技有限公司年产20万t橡胶胶片项目、东恒舜新材料有限公司连续化生产6万t·a⁻¹高性能橡胶促进剂MBT项目入选重大实施类项目(石油和化工类)。山东道恩高分子材料股份有限公司新材料扩产项目、山东大业股份有限公司年产20万t子午线轮胎用高性能胎圈钢丝项目入选重大准备类项目(石油和化工类)。

(本刊编辑部)

《石化绿色低碳工艺名录(2021年版)》发布

为响应国家“双碳”目标,推进先进绿色低碳工艺技术在石油和化工行业的推广应用,2022年1月17日,中国石油和化学工业联合会发布《石化绿色低碳工艺名录(2021年版)》,同时《石化绿色低碳工艺名录(2020年版)》废止。

中国石油和化学工业联合会希望相关企业在技术改造、项目建设中积极采用绿色、低碳工艺,提高石化化工行业绿色低碳发展水平。

无水氟化铝生产工艺/氟硅酸制无水氢氟酸联产白炭黑生产工艺、高热稳定性不溶性硫黄连续法工艺、贵金属催化氢化法合成对苯二胺类防老剂6PPD工艺、复合固体酸催化连续合成2,2,4-三甲基-1,2-二氢化喹啉聚合体(TMQ)工艺以及新型微纳态、超分散、低锌橡胶硫化活性剂生产工艺均被纳入《石化绿色低碳工艺名录(2021年版)》。

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