

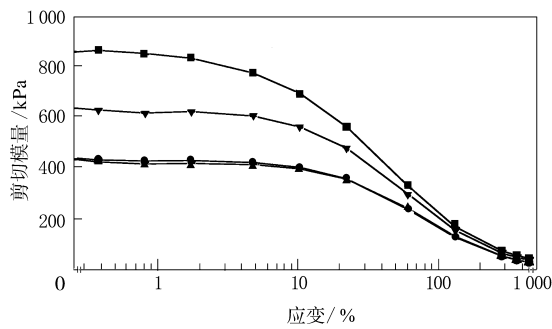


图 8 处理工艺对纳米氢氧化镁/EPDM(共混比 100/100)复合材料 Payne 效应的影响
■—工艺 1; ▼—工艺 2; ●—工艺 3; ▲—工艺 4。

3 结论

(1) 纳米氢氧化镁对橡胶基体具有较好的补

强作用, 纳米氢氧化镁分散越好, 其补强效果越显著, 可以实现复合材料物理性能和阻燃性能的兼顾。

(2) 对纳米粉体进行表面处理可以改善其与橡胶间的界面相互作用, 提高其分散性, 从而显著提高复合材料的物理性能。

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Properties of nano-magnesium hydroxide/rubber composite

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Abstract: The nano-magnesium hydroxide/NBR, nano-magnesium hydroxide/SBR and nano-magnesium hydroxide/EPDM and nano-magnesium hydroxide/silicone rubber composites were prepared, and their physical properties and flame-retardance were investigated. The results showed that the magnesium hydroxide gave the composites good halogen-free flame-retardance combined with the excellent reinforcement efficiency; the higher the dispersity of nano-magnesium hydroxide powder, the stronger the interfacial action between nano-magnesium hydroxide powder and rubber matrix, and the better the physical properties of composite; in terms of reinforcement efficiency, the nano-magnesium hydroxide was the best for NBR and the poorest for silicone rubber. The dispersity of nano-magnesium hydroxide powder in EPDM and the interfacial action improved by the surface modification of powder, thus the physical properties of the composite improved.

Keywords: nano-magnesium hydroxide; rubber; interface; dispersion; flame-retardance

炭黑院年产 2 万 t 软质炭黑生产装置建成投产

中图分类号: TQ330.38⁺1 文献标识码: D

中橡集团炭黑工业研究设计院承担的国家重点技术创新项目——年产 2 万 t 软质炭黑生产装置于 2003 年 9 月 30 日一次投料试车成功, 现已投入正常生产。

该工程是国家、省级重点项目, 是炭黑院调整产品结构、适应市场需求、形成规模化生产的重大举措。该生产装置在采用炭黑院自行开发的油-气路线炭黑新工艺生产技术、湿法造粒、自动包装和 DCS 计算机控制技术的同时, 采用了新型炭黑反应炉和独特的天然气燃烧系统。实践表明, 采用独特的天然气燃烧模型, 其燃烧较以油作燃料时更充分、更稳定, 从而显著提高了产品的纯度、质量稳定性和橡胶补强性能, 可生产适用于子午线轮胎和汽车用橡胶制品的优质炭黑品种。该装置现正批量生产 N500, N600 和 N700 系列炭黑产品供应国内外市场。

(中橡集团炭黑工业研究设计院 徐忠供稿)