

Journal of Physical Chemistry C, 2008, 112 (49): 19443-19448.

[8] 申作利, 类延达, 唐征海, 等. 双离子型功能离子液体改性白炭黑/丁苯橡胶复合材料的研究[J]. 橡胶工业, 2012, 59(1): 5-12.

[9] Guo B C, Wan J J, Lei Y D, et al. Curing Behavior of Epoxy/Graphite Composites Containing Ionic Liquid[J]. Journal of Physics D: Applied Physics, 2009, 42(14): 154307-154312.

[10] Stepnowski P, Mrozik W, Nichthauser J. Adsorption of Alkylimidazolium and Alkylpyridinium Ionic Liquids onto Natural Soils [J]. Environmental Science and Technology, 2007, 41(2): 511-516.

[11] Pernak J, Walkiewicz F, Maciejewsk M, et al. Ionic Liquids as Vulcanization Accelerators[J]. Industrial & Engineering Chemistry Research, 2010, 49(10): 5012-5017.

[12] Przybyszewska M, Zaborski M. Effect of Ionic Liquids and Surfactants on Zinc Oxide Nanoparticle Activity in Crosslinking of Acrylonitrile Butadiene Elastomer[J]. Journal of Applied Polymer Science, 2009, 116(1): 155-164.

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Effect of Ionic Liquid-Accelerator on Properties of SBR Compound

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Abstract: The effect of ionic liquid-accelerator IL-M on the properties of ESBR compound was investigated. The results showed that, compared with accelerator M, the curing rate of ESBR compound increased, while the processing property deteriorated, the interaction of carbon black and ESBR was enhanced, the dispersion of carbon black in ESBR compound was improved, the Shore A hardness, modulus and tensile strength of vulcanizate increased, and the abrasion resistance changed little.

Key words: ionic liquid; accelerator; ESBR; processing property; physical property

含氮链端链中多功能化溶聚丁苯橡胶及其制备方法

中图分类号: TQ333.1 文献标志码: D

由大连理工大学申请的专利(公开号 CN 104017133A, 公开日期 2014-09-03)“含氮链端链中多功能化溶聚丁苯橡胶及其制备方法”, 涉及的一类含氮链端链中多功能化溶聚丁苯橡胶(SSBR)是丁二烯、苯乙烯、含氮功能化单体 1,1-二苯基乙烯衍生物三元共聚物。共聚物的链两端均含有含氮功能化单体 1,1-二苯基乙烯衍生物单元, 链中含有不少于 2 个含氮功能化单体 1,1-二苯基乙烯衍生物单元; 结合含氮功能化单体 1,1-二苯基乙烯衍生物质量分数为 0.005~0.100; 含氮功能化单体选自单胺基 1,1-二苯基乙烯衍生物、双胺基 1,1-二苯基乙烯衍生物。该发明改善了炭黑在橡胶中的分散性, 增大了 SSBF 功能化基团的数量, 并有效地控制了活跃高分子链端的运动摩擦生热, 最终可实现降低轮胎内耗生热的目标。

(本刊编辑部 赵敏)

一种石墨烯高岭土复合纳米橡胶填料的制备方法

中图分类号: TQ330.38⁺3 文献标志码: D

由淮北师范大学申请的专利(公开号 CN 103275524A, 公开日期 2013-09-04)“一种石墨烯高岭土复合纳米橡胶填料的制备方法”, 提供了一种石墨烯高岭土复合纳米橡胶填料的制备方法: (1)高岭土预处理。将高岭土矿石原料粉碎成颗粒(粒径为 1~100 μm), 然后利用化学插层法将高岭土颗粒剥离形成纳米级高岭土, 利用复合球磨使纳米高岭土粒度均匀。(2)高岭土改性。采用偶联剂对纳米高岭土进行表面改性。(3)制备石墨烯。将氧化石墨分散到去离子水中制成石墨烯分散液。(4)制备石墨烯高岭土复合纳米橡胶填料。该填料性能可控, 工艺流程简单, 成本低, 适于工业化规模生产, 具有高导电、耐摩擦的特性, 用其制备的橡胶制品具有优良的弹性、抗屈挠性、抗静电性和耐摩擦性能。

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