

参考文献:

- [1] 王世杰,李勤. 潜油螺杆泵采油技术及系统设计[M]. 北京: 冶金工业出版社,2006:14.
- [2] Han H,Wang S J,Lu X R. Investigation of the Friction Properties of Halogenated Modification on the Surface of Nitrile Rubber[J]. Advanced Materials Research, 2011, 230-232: 704-707.
- [3] Heng H,Wang S J,Lu X R. Study on the Heat-oil Resistance Capacity of Surface Chemically Modified Nitrile Rubber[J]. Advanced Materials Research,2012,418-420:954-958.
- [4] 郑亮. 原油对丁腈橡胶密封件性能的影响[J]. 橡塑技术与装备,2012,38(3):53-57.
- [5] 吕晓仁,王世杰,孙浩. 干摩擦和原油润滑下丁腈橡胶、氟橡胶磨损行为研究[J]. 润滑与密封,2011,36(8):63-66.
- [6] 石锐,田明,齐卿,等. 橡胶表面改性方法[J]. 橡胶工业, 2006,53(3):186-191.
- [7] 金山,冯永海,鲁选才. 表面化学处理在丁腈硫化胶中的应用研究[J]. 特种橡胶制品,2000,21(6):43-45.
- [8] Heng H,Wang S J,Lu X R. Study on the Friction Properties of Surface Iodide Modified Nitrile Rubber[J]. Applied Mechanics and Materials,2012,157-158:114-118.
- [9] 陈继国. 聚四氟乙烯颗粒在复合钛基脂中的摩擦磨损性能研究[J]. 机械设计与制造,2010(11):103-104.
- [10] 韩珩,王世杰,吕晓仁,等. 表面氧化改性对丁腈橡胶力学性能的影响[J]. 沈阳工业大学学报,2013,35(6):662-666.

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Effect of Surface Modification on Oil Resistance and Wear Resistance of NBR

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Abstract: The halogenation (fluoride, bromide and iodide) and mixed oxidation method were used for chemical modification of NBR surface, and the effect of surface modification on the oil resistance and wear resistance of NBR was studied. The results showed that, fluoride, bromide, iodide and mixed oxidation could improve the physical properties of NBR, such as Shore A hardness, tensile strength and elongation at break, wherein the effect of fluorination and mixed oxidation was quite effective. The oil resistance of NBR was significantly improved by using mixed oxidation. The wear resistance of all the modified NBR was improved, wherein the effect of mixed oxidation was the best.

Key words: NBR; surface modification; halogenation; mixed oxidation; oil resistance; wear resistance

利用改性微晶纤维素制备轮胎胎面胶的方法

中图分类号: TQ336.1+1 文献标志码: D

由青岛科技大学申请的专利(公开号 CN 103627055A, 公开日期 2014-03-12)“利用改性微晶纤维素制备轮胎胎面胶的方法”, 提供了一种利用改性微晶纤维素制备轮胎胎面胶的方法, 其制备步骤包括: (1) 利用功能性离子液体改性微晶纤维素; (2) 以改性微晶纤维素部分替代白炭黑用于胎面胶配方中, 通过常规的混炼工艺得到混炼

胶; 将混炼胶在 130~180 °C 下按照工艺正硫化时间进行硫化定型制得硫化胶。该发明利用功能性离子液体(含双键、橡胶促进剂或硫化剂等)改性微晶纤维素(制备工艺简单, 无环境污染), 有效提高了微晶纤维素在橡胶基体中的分散性, 增强了微晶纤维素与橡胶基体、白炭黑的相互作用, 同时限制了白炭黑网络结构的形成。将改性微晶纤维素应用于胎面胶中可以提高胎面胶的强度, 显著提高胎面胶的抗湿滑性, 同时降低轮胎滚动阻力。

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