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Study on Properties of Natural Rubber from Different Countries

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Abstract: In this study, the relationship between physicochemical properties and processing properties of the standard 20# natural rubber was studied. The No. 1 NR was produced in Malaysia and the No. 2 NR was from Thailand. The results showed that, the volatile content and ash content of No. 1 and No. 2 NR raw rubber were basically the same. The Mooney viscosity of the No. 1 NR compound was significantly lower than that of the No. 2 NR compound, while the Mooney viscosity of the No. 1 NR raw rubber was higher than that of the No. 2 NR raw rubber, indicating that the Mooney viscosity of NR could not accurately reflect the processing property of NR in the mixing process, which should be analyzed in conjunction with the plasticity retention rate. The Payne effect of the No. 1 and No. 2 NR compounds showed little difference, indicating that the fillers had the same dispersibility in the two NR, and the addition of peptizers to the NR was beneficial to the dispersion of filler in the rubber matrix. When the Mooney viscosity of the tread compound was similar, the roll-wrapping performance of the No. 1 NR compound was obviously better than that of the No. 2 NR compound, but the shrinkage of the No. 1 NR compound after extrusion was slightly worse, and the extrusion quality of both kinds of the tread compounds was good.

Key words: NR; physicochemical property; physical property; processability

一种轮胎失效检测系统

由天津久荣工业技术有限公司申请的专利(公布号　CN 115031999A,公布日期　2022-09-09)“一种轮胎失效检测系统”,公开的轮胎失效检测系统包括转鼓、轮胎、三轴加速度传感器,机械滤波器装置,振动信号采集模块和信号分析检测系统。其中转鼓安装在耐久试验机的传动轴上;轮胎安装在耐久试验机的轮轴上,且表面贴紧抵触在转鼓外表面;三轴加速度传感器安装在耐久试验机的轮轴上;机械滤波器装置置于三轴加速度传感器与轮轴之间,安装在轮胎安装的轮轴表面。本发明可监测高速耐久性能室内试验中轮胎是否正常,并能够在检测到轮胎出现失效后自动停机,提高了轮胎失效检出的准确率。

(本刊编辑部　马　晓)

一种轮胎胎面花纹中镶钉自动排布的方法

由赛轮集团股份有限公司申请的专利(公布号　CN 114905895A,公布日期　2022-08-16)“一种轮胎胎面花纹中镶钉自动排布的方法”,公开了一种轮胎胎面花纹中镶钉自动排布的方法。本技术方案在于CATIA软件中的product环境下,通过配置表的方式,将镶钉图形放置在需要放置的点上,并自动计算一定范围内镶钉的总数量。如出现需要调整镶钉位置的情况,亦能快速通过配置表进行驱动生成图形,重新自动计算一定范围内镶钉的总数量并输出。本发明的优点在于无须提前生成带有镶钉的单个模型再组合装配进行计算或调整,实现了雪地轮胎镶钉排序的快速自动生成,节省了设计时间和设计成本。

(本刊编辑部　马　晓)