

脂的硫化胶60~90℃时的 $\tan\delta$ 值变化不大,从而保证轮胎具有较低的滚动阻力和生热。

3 结论

对两种功能性胎面树脂在高性能半钢子午线轮胎中的应用研究得出:

(1) 与添加TDAE的胎面胶相比,添加两种功能性胎面树脂的胎面胶强伸性能较好,耐磨性能提高,在保证低滚动阻力的前提下,轮胎的抗湿滑

性能和操控性提高。

(2) 添加两种功能性胎面树脂的胎面胶各项性能相差不大,基本处于同一水平。

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Application of Functional Tread Resin in Tread Compound of High Performance Steel-belted Radial Tire

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Abstract: The effects of domestic functional tread resin LUKATOTAC[®] CSR6009 and imported functional tread resin Sylvatraxx[™] 4401 on the properties of tread compound of high performance steel-belted radial tire were studied and compared with environmentally friendly aromatic oil (TDAE). The results showed that the tensile strength, elongation at break, tear strength and wear resistance of tread compound with functional tread resin were improved compared with the tread compound with TDAE, and the wet skid resistance and drivability of the finished tire were improved under the premise of low rolling resistance. The properties of the compounds with these two tread resins were similar.

Key words: functional tread resin; tread compound; semi-steel radial tire; wet skid resistance; rolling resistance

北京化工大学和玲珑轮胎开发出 3D打印聚氨酯轮胎

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北京化工大学和山东玲珑轮胎股份有限公司联合开发出3D打印165 70/R12聚氨酯轮胎,并对成品轮胎进行了测试,这是国内首次通过3D打印方式制备出标准规格轮胎(如图1所示)。该轮胎采用热塑性聚氨酯材料、通过熔融沉积法(FDM)完成3D打印,为免充气轮胎,内部为正六边形空心结构。在双方的前期研究中发现,由于聚氨酯材料具有低生热、高耐磨、抗撕裂等特性,因此具有相分离结构的聚氨酯胎面比传统橡胶胎面具有更低的生热和滚动阻力,聚氨酯材料有望成为新一代绿色轮胎的主打材料。该研究将聚氨酯材料

与3D打印技术结合,实现了轮胎一体成型;无需模具,就可以制备出具有各种花纹结构的低滚动阻力、高耐磨轮胎。



图1 3D打印聚氨酯轮胎及其测试照片

(本刊编辑部)