

Optimization of Tread Pattern of Truck and Bus Radial Tire to Lower Tire Noise Based on Spectrum Analysis

ZHANG Chunsheng¹, HOU Dandan¹, LIAO Fagen¹, XIANG Dabing², WEI Yintao²

(1. Zhongce Rubber Group Co., Ltd, Hangzhou 310018, China; 2. Tsinghua University, Beijing 100084, China)

Abstract: Taking truck and bus radial tire as an example, the tread pattern was optimized to lower tire noise. The pass-by noise of tire was tested, and the noise spectrum and Colormap were analyzed and compared with the benchmark tire. The test results showed that there was a significant noise peak in the noise spectrum of the tire to be optimized. It was found that the noise peak was mainly caused by the poor pattern design and arrangement of the pattern pitches. The pitch of the tire pattern was then redesigned and optimized. After the optimization, the peak noise of the tire was reduced, the sound pressure level reached the tested level of the benchmark tire, and its noise spectrum was close to that of the benchmark tire under the same test conditions. This study showed that the spectrum analysis method was effective in the diagnosis of tire noise source and optimization of noise performance.

Key words: truck and bus radial tire; pattern noise; spectrum analysis; tire pitch optimization

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日前,山东玲珑轮胎股份有限公司(简称玲珑轮胎)与腾讯云计算(北京)有限公司(简称腾讯公司)、深圳华制智能制造技术有限公司(简称华制智能)达成战略合作协议,共建全球首个轮胎行业工业互联网平台,通过全要素、全产业链、全价值链的全面连接,助力玲珑轮胎数字化、智能化和全球化发展。

据了解,此次三方携手,将在原有基础上,把数字化创新下沉,通过物联网、5G、人工智能等技术,将生产制造的“硬”环节和分析服务的“软”环节互联集成,实现研发、生产、营销、服务等全价值链数字化管控,为玲珑轮胎提供实时多维度、可视化的数据支持,促进产业链高效协同。

腾讯云将为玲珑轮胎打造营销云,利用企业微信、小程序等连接应用,更高效地触达用户,快速响应市场需求,同时通过电子商城进行线上线下门店的打通,为玲珑轮胎搭建智慧工业后市场云平台。华制智能将结合工业互联网领域的多年实践,为玲珑轮胎构建数字化驾驶舱,通过设备物联、智能生产、智能物流等,统一管控企业数据及

生产运营各系统资源,加强企业生产调度、运营管控、数据交互及智能决策。

玲珑轮胎董事长王锋说,此次三方携手,将通过智能制造、产品创新和技术升级提高生产效率,优化产品结构,提升质量品牌,推进服务体系建设,全面推进玲珑轮胎数字化和智能化转型。

腾讯公司高级执行副总裁、云与智慧产业事业群总裁汤道生表示,腾讯公司将科技能力和用户连接能力注入到玲珑轮胎数字化转型的进程中,做好玲珑轮胎的数字化转型助手,助力玲珑轮胎引入AI、区块链、边缘计算等最新技术,积极开拓中高端市场,塑造国际化品牌形象,打造标杆工厂,抢抓新基建机遇,全面推进数字化、智能化转型。

华制智能董事长夏妍娜指出,在新基建下的新工业中,万物皆互联,制造即服务。华制智能将通过高可配、快部署、易运维、强稳定的工业互联网解决方案,在设备互联、制造协同、运营管控、数据智能等领域为玲珑轮胎提供卓越的产品和深度的应用,助力玲珑轮胎实现数字化转型,打造世界级智能工厂。

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