

Thermal-mechanical Coupling Simulation of Aircraft Tire under Different Slip Conditions

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Abstract: The finite element simulation analysis was carried out for the rubber wheel, and a thermal-mechanical coupling process considering the friction heat build-up and the hysteresis heat build-up was established. According to the variation curve of the slip rate of aircraft tires with temperature during landing, the temperature field distribution of the rubber wheel under different slip rates was studied. The results showed that with the decrease of the slip rate, the surface temperature of the contact area of the rubber wheel gradually decreased, the distribution range of the heat build-up temperature inside the rubber wheel increased continuously, and the heat build-up temperature increased gradually. In the process of decreasing the slip rate from 0.8 to 0.2, the maximum temperature of the overall temperature field of the rubber wheel appeared in the contact area of the outer surface, and as the slip rate decreased, the maximum temperature of the rubber wheel gradually decreased.

Key words: aircraft tire; rubber wheel; slip rate; thermal-mechanical coupling; finite element simulation

益阳橡胶机两项金属加工工艺获奖

近日,第四届金属加工工艺创新论坛暨金属加工工艺创新奖颁奖典礼、金属加工工艺征文大赛颁奖典礼在湖北武汉举行。益阳橡胶塑料机械集团有限公司(简称益阳橡胶机)的“密炼机转子体高效铣削毛坯工艺设计”和“转子体堆焊合金焊接程序离线优化”论文分获“金属加工工艺创新奖”和“金属加工工艺征文大赛一等奖”。

“密炼机转子体高效铣削毛坯工艺设计”通过理论与实践的结合,实现对密炼机产品的关键核心工件转子体加工工艺的创新,满足了密炼机转子体的加工需求,实现了密炼机转子体毛坯件大批量的高效生产。

“转子体堆焊合金焊接程序离线优化”提高了离线自动化编程的效率和质量,保证了程序的通用性。这项创新技术使密炼机转子体焊道及节点排布更均匀,焊接基准与毛坯一致,焊接路径及节点更标准,并且焊枪角度可根据实际焊接情况进行统一调整,以达到更优的焊接状态。

(摘自《中国化工报》,2023-08-23)

神马帘子布精算“节流账”,深挖“盈利点”

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(摘自《中国化工报》,2023-08-22)