的损耗峰降低。

从图 2 还可以看出,NR、含有 20 和 40 份高级胶清复合橡胶硫化胶的玻璃化温度分别为 −54.7,−55.9 和 −54.2 ℃,表明纯化胶清经木瓜蛋白酶处理所得高级胶清的含量对复合橡胶的玻璃化温度没有明显影响。

3　结论

(1)当高级胶清并用量为 10～40 份时,高级胶清/新鲜胶乳复合橡胶的理化性质能够达到国产 5# 标准胶的要求。

(2)增大高级胶清含量能促进复合橡胶的硫化,缩短硫化时间,增大交联密度,提高物理性能。

(3)增大高级胶清含量能提高复合橡胶硫化胶的储能模量,但对玻璃化温度没有影响。

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Study on Preparation of Compound Rubber by Mixing High-performance Skim with Fresh Natural Rubber Latex

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Abstract: The natural rubber skim latex was filtered and concentrated in hollow fiber column, and reacted with papain to form high-performance skim. The compound rubber was then prepared by co-agglomeration of the blend of high-performance skim and fresh natural rubber latex. The effect of blending ratio of skim and natural rubber latex on the properties of compound rubber was investigated. The results showed that addition of high-performance skim could promote vulcanization of the compound rubber and improve its physical properties. When the addition level of high performance skim was 10～40 phr, the physico-chemical properties of compound rubber met the requirements of SCR 5#.

Key words: high-performance skim; fresh natural rubber latex; compound rubber; natural rubber; physical property

一种金属橡胶衬垫制造工艺

中图分类号:TQ336.4+3　　**文献标志码**:D

由沈阳黎明航空发动机(集团)有限责任公司申请的专利(公开号　CN 102950233A,公开日期　2013-03-06)“一种金属橡胶衬垫制造工艺”,提供了一种金属橡胶衬垫制造工艺。采用的工具包括螺钉、固定块、钢丝、精压模、下模和上模,即通过螺钉将 4 根钢丝紧固在 4 个固定块上,钢丝形成绷紧的矩形结构布置。其制造工艺为:按零件毛坯尺寸调整固定块的位置,采用数控缠绕机将不锈钢金属丝缠绕成螺旋卷,再进行编织。编织过程为:将螺旋卷在钢丝上,将螺旋卷先沿着 A 向缠绕 1 层,再按 B 向缠绕 1 层,轮换方向缠绕,重复 2～3 次,缠绕后,拆卸下来,毛坯缠绕完成。最后将毛坯在专用模具中进行压制。该发明的优点是所需设备简单,制造工艺简单,保证了金属橡胶衬垫的尺寸和密度,使衬垫耐用性显著提高,满足使用要求,能广泛适用于航空领域,可以大大提高发动机组件的使用寿命。

(本刊编辑部　赵　敏)