

Fine Worsted Yak Yarns and Fabrics

精梳犛牛絨紗線和面料

Yak mainly survives at high altitude in the Tibetan Plateau and the Himalayas. There are over 16 million yaks in the world and 80% of them are in China. Yak yarn possesses excellent strength, warmth and breathability. To the hand, it feels like cashmere. However, machine conversion of yak fibres into a useful yarn is challenging, particularly to obtain a fine yarn. In this project, a new spinning method and system were developed, which used a multi-level spinning triangle to produce fine worsted yak yarns with good yarn properties. The system incorporates newly-developed technical units into a conventional ring frame. The resulting yarn is a fine worsted yak yarn of high strength, low hairiness and good evenness. Knitted fabrics are thin and soft, and exhibit better air permeability and heat retention than those made with cashmere and merino wool fibres.

犛牛主要生長在高海拔的青藏高原和喜馬拉雅山脈。全世界有1600多萬頭犛牛，其中80%以上分佈在中國。犛牛絨性能優越，手感接近山羊絨，且有優良的強力、保暖和透氣性能。但是用犛牛絨來生產紗線還有一定難度，尤其是高支數紗線。因此，為了紡製高支數的精紡犛牛絨紗線，本項目於傳統環錠紡紗機設計新的紡紗裝置，開發出一種多級紡紗三角區，從而研發出一種新型紡紗方法和系統。此紡紗系統紡製的犛牛絨紗線具有高強力、低毛羽、條幹均勻等特點，紡製出來的針織物輕薄、柔軟，並且具有比山羊絨和美麗諾羊毛針織物更好的透氣性和保暖性。



Application 應用

- A physical manufacturing method to produce fine worsted yak yarns;
 - A multi-roving feeding method applied to a modified conventional ring frame to produce fine worsted yak yarns of high strength, low hairiness and good evenness;
 - A multi-strand condenser and related components for the reduction of hairiness by controlling edge fibres on each draft strand;
 - A roving separator and related components for developing a multi-level spinning triangle by guiding each roving.
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- 在普通環錠細紗機上安裝簡單的改進裝置，通過物理方式紡製高支數的犛牛絨紗線；
 - 在普通環錠細紗機上使用多跟粗紗餵入的方式來紡製高支數具高強力和低毛羽的犛牛絨紗線；
 - 通過多束集聚器及相關部件有效控制每根牽伸須條的邊緣纖維，從而減少紗線毛羽；
 - 通過控制粗紗分離器及相關部件多根粗紗的餵入路徑，從而形成不同幾何形態的多級三角區。

Industry Benefits 業界效益

- Cost advantage of yak fibre as compared to cashmere fibre;
 - Improved tenacity and hairiness of fine worsted yak yarns as compared to conventional yak yarns at the same twist level;
 - Light and soft yak knitted fabrics with better air permeability and warmth than those derived from cashmere and merino wool fibres;
 - Eco-friendly as no chemicals, water or steam are required for production;
 - Increased added-value and enhanced competitive advantages.
- 相比山羊絨纖維，犛牛絨纖維成本較低；
 - 新型犛牛絨紗線具有比同撚度的普通犛牛絨紗線更好的強度，更少的毛羽；
 - 新型犛牛絨紗線製成的針織物輕薄、柔軟，並且具有比山羊絨和美麗諾羊毛更佳的透氣和保暖性能；
 - 環保，生產過程無需化學物質、水和蒸汽；
 - 增加了犛牛絨產品的附加價值和市場競爭性。

Licensing Details 獲取專利

A non-exclusive licence covers the knowhow of the technical device production and installation of spinning machine for production of the yak yarn.

非獨家專利授權製作紡紗裝置及安裝於紡紗機上的技術，以生產犛牛紗線。



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