



Birla Cellulose completes first pilot spin of lyocell fibres containing Nanollose's microbial cellulose

Highlights:

- **Birla Cellulose completes first pilot spin of eco-friendly next generation lyocell fibre containing 20% Nanollose microbial cellulose (Nullarbor-20™)**
- **Nullarbor-20™ further enhances the sustainability quotient of lyocell by using Nanollose's tree-free cellulose made from fermentation of food industry waste.**
- **Pilot plant run demonstrates potential for making lyocell fibre from microbial cellulose using existing industrial equipment.**
- **Birla Cellulose and Nanollose now well positioned to begin supply samples of Nullarbor – 20™ to renowned fashion and textile companies**
- **In January 2021, Birla Cellulose had filed a joint patent application with Nanollose for a high tenacity lyocell fibre made from bacterial cellulose.**

Birla Cellulose, the pulp and fibre business of Grasim Industries Ltd. a flagship company of the Aditya Birla Group and one of the world's largest man-made cellulosic fibre producers, is pleased to announce that it has successfully completed first pilot scale spin of eco-friendly next generation lyocell fibre containing 20% Nanollose Limited (ASX: NC6) microbial cellulose (Nullarbor-20™). The first pilot spin to produce 250 kg of this forest-friendly lyocell fibre marks a significant milestone in Birla Cellulose's strategy for commercialization of this technology that uses a sustainable biomass produced from fermentation of food industry waste.

The fibres produced maintain all superior attributes of Birla Excel (lyocell) such as comfort, strength, durability and moisture absorption while further enhancing the sustainability quotient by using Nanollose's microbial cellulose that reduces pressure on virgin wood based pulp.

The completion of pilot spin demonstrates the potential for making this forest-friendly fibre using Birla Cellulose's existing manufacturing setups and augurs well for the potential commercialization of this technology. It paves the way for Birla Cellulose and Nanollose to begin supplying multiple, renowned fashion and textile companies with initial samples of this innovative and eco-friendly lyocell fibre.

Commenting on the pilot spin completion, the Chief Technology Officer of the Aditya Birla Group and Birla Cellulose, Dr. Aspi Patel, said: *“Developing the state of art technology for industrial scale lyocell production, using tree-free cellulose, is an exciting development in the area of next generation alternative feedstock. We are looking forward to scaling up this technology in collaboration with Nanollose.”*

Executive Chairman of Nanollose, Dr Wayne Best, said: *“The completion of our first pilot spin is a significant milestone in the Company’s development and provides clear proof of concept of our offering at scale. This milestone provides Nanollose with a strong growth foundation for the next 12 months.*

The target is to increase the scale and/or percentage of microbial cellulose in subsequent pilot spins. This will allow Birla Cellulose to produce quantities of several Nullarbor fibres consisting of varied percentages of Tree-Free microbial cellulose, mixed with other cellulosic materials.

Completion of the first pilot scale spin process follows months of extensive work and highlights the capabilities of Birla Cellulose’s & Nanollose’s technical teams to overcome the challenges associated with scaling production from laboratory to industrial grade processing across multiple continents. This also included the procurement of microbial cellulose at carefully defined specifications, establishment of quality control and optimisation procedures, experimentation of drying and purification methods, and the exchange of technical information between Nanollose, its contract researchers and Birla’s technical team in relation to the fibre spinning process.

About Birla Cellulose:

Birla Cellulose, the pulp and fibre business of the Aditya Birla Group, is a leading sustainability focused Man-Made Cellulosic Fibres (MMCF) producer.

Birla Cellulose operates 12 sites that apply environmentally efficient closed loop technologies that recycle materials and conserve natural resources. Its five global advanced research centers are equipped with state-of-the-art facilities and pilot plants. Birla Cellulose’s fibres are made from renewable wood and are produced using a closed-loop process with significantly lower carbon emissions and lower resource consumption. Its eco enhanced fibers such as Livaeco viscose and modal, Birla Excel™ (lyocell), and Birla Spunshades™ are designed with superior sustainable credentials. Liva Reviva is a circular viscose fibre made using pre-consumer cotton waste and provides a solution to recycle fashion industry waste into fresh fibers.

Birla Cellulose collaborates actively with its upstream and downstream partners with an aim to create a bigger and broader positive impact on sustainability of its value chain. It works closely with global sustainability focussed organizations like Sustainable Apparel Coalition (SAC), Canopy, Zero Discharge of Hazardous Chemicals (ZDHC), Changing Markets Foundation, Textile Exchange, WBSCD, Fashion for Good, Global Fashion Agenda, The Microfibres Consortium amongst others to continually learn and apply the best practices in its global operations and across its value chain.

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