ASX Release

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NANOLLOSE AND GRASIM FILE JOINT PATENT APPLICATION FOR HIGH TENACITY LYOCELL

Highlights:

- **Nanollose and Grasim Industries Limited have filed a joint patent application for a high tenacity lyocell fibre made from Microbial Cellulose.**
- **A team of fibre experts at Grasim's Pulp and Fibre Innovation Centre have produced nullarbor™ lyocell fibre that is finer than silk and significantly stronger than conventional lyocell made from wood pulp.**
- **The lyocell market is predicted to be worth US$1.5 billion by 2024, growing with a CAGR of around 8%.[1]**
- **Nanollose and Birla Cellulose, Grasim's business unit focused on sustainable fibres, will now focus on taking this success to the pilot production phase to produce initial commercial quantities of fibre to enable commercial agreements with fashion brands.**
- **The joint patent provides the companies with additional intellectual property, a superior fibre, and enhances Nanollose's relationship with both Grasim and Birla Cellulose.**
- **In January 2020, Nanollose signed a Collaboration Agreement with Grasim, a company belonging to global conglomerate, Aditya Birla Group, one of the world's largest man-made cellulosic fibre producers, to exclusively develop, and commercialise Nanollose's Tree-Free fibres including nullarbor™ and nufolium™.**

Nanollose Limited (ASX:NC6) ("**Nanollose**", the "**Company**"), a leading bio-materials company commercialising scalable technology to create fibres and fabrics with minimal environmental impact, is pleased to announce that the Company has filed a joint patent application with Grasim Industries Limited ("Grasim") for a high tenacity lyocell fibre made from Microbial Cellulose.

The patent application, entitled *High Tenacity Lyocell Fibres From Bacterial Cellulose and Method of Preparation Thereof*, represents a major advancement over the Company's previous viscose versions of nullarbor™ and nufolium™. Using the lyocell process, a team of fibre experts at Grasim's Pulp and Fibre Innovation Centre have produced nullarbor fibre that is finer than silk and significantly stronger than conventional lyocell that is traditionally produced from wood pulp.

Lyocell is a form of rayon, made using a closed loop process with low demand on chemical and water usage and low waste generation, which makes it very environment-friendly resulting in an elevated demand from clothing brands.

Lyocell is widely used in textile and nonwoven applications and has become popular due to a number of desirable strength and comfort characteristics. Furthermore, the combination of the Nanollose's

[1] https://www.gminsights.com/industry-analysis/lyocell-fiber-market

Tree-Free cellulose, along with lyocell's closed-loop production process, could potentially make Nanollose's Tree-Free lyocell one of the most eco-friendly and sustainable fibres available.

The lyocell market is predicted to be worth US$1.5 billion by 2024, growing with a CAGR of around 8%, presenting a significant opportunity for Nanollose, Grasim and Birla Cellulose.

Following the filing of the patent, Nanollose and Birla Cellulose will now focus on taking this success to the pilot scale to produce initial commercial quantities of fibre to enable commercial agreements with a select number of fashion brands.

The joint patent application strengthens the intellectual property portfolio of both companies and provides protection for this innovative Tree-Free fibre technology.

Commenting on the patent, Nanollose Executive Chairman, Dr Wayne Best, said: "We are extremely pleased with the progress of our collaboration with Grasim and Birla Cellulose, which has already delivered this joint patent application. The nullarbor fibre produced by the team at Birla Cellulose has exceeded our expectations, and we now have a fibre that is not only more eco-friendly but has superior properties over conventional tree-based fibres. We are very much looking forward to commencing the pilot production and presenting textiles made from this remarkable fibre to the fashion industry."

Commenting on the patent, the Chief Technology Officer for the Aditya Birla Group and Birla Cellulose, Dr. Aspi Patel, said: "This innovative development is another important step in our continuing journey to make our fibres more sustainable. This is an exciting development in the area of next generation alternative feedstock and we are looking forward to scaling up this technology in collaboration with Nanollose."

In January 2020, Nanollose signed a Collaboration Agreement with Grasim, a company belonging to global conglomerate, Aditya Birla Group, one of the world's largest man-made cellulosic fibre producers, to exclusively develop, and commercialise Nanollose's Tree-Free fibres including nullarbor™ and nufolium™.

The Collaboration Agreement provides Nanollose with a world class and globally recognised industrial partner, with the ability to accelerate development, commercialisation and provide a manufacturing foundation for future textile and clothing brands that uptake Nanollose's Tree-Free fibres.

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AUTHORITY AND CONTACT DETAILS

This announcement has been authorised for release by the Board of Nanollose Limited.

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ABOUT NANOLLOSE

Nanollose Limited (ASX: NC6) is an innovative Australian company that uses an eco-friendly fermentation process to grow fibres that could become a sustainable alternative to conventional plant-derived cellulose fibres. The Company's process, which uses streams from the agriculture and food industries, has the ability to produce 'Tree-Free' Cellulose. Cellulose is the hidden natural polymer building block most consumers know nothing about, but forms a huge part of items used in their everyday life such as clothing, paper and hygiene products.

ABOUT BIRLA CELLULOSE AND GRASIM INDUSTRIES LIMITED

Birla Cellulose, a business unit of Grasim Industries Limited and part of the Aditya Birla Group (ABG), is a leading sustainability focused man-made cellulosic fibre producer, with its nature based fibres being produced from renewable wood sourced from sustainably managed forests. Grasim Industries Limited, a flagship company of the ABG, ranks amongst the top publicly listed companies in India and operates pulp and fibre business in India.

Grasim Industries operates its pulp and fibre business, which applies closed loop processes and environmentally efficient technologies that recycle raw materials and conserve natural resources. Grasim's five global advanced research centres are equipped with state of the art facilities and pilot plants. Its new generation innovative products like Livaeco™, Liva Reviva, Birla Excel (lyocell), Liva Antimicrobial and Birla Spunshades, are designed with superior sustainable credentials.

With an aim to create bigger and broader impact, Grasim collaborates actively with its value chain partners and works closely with organizations like Canopy Planet, Sustainable Apparel Coalition (SAC), Zero Discharge of Hazardous Chemicals (ZDHC), Changing Markets Foundation, Textile Exchange, WBSCD, Fashion for Good amongst others to continually learn and apply the best practices within its global operations and across its value chain.