

## **CHUETSU PULP & PAPER CO., LTD.**

25 April, 2017 Marubeni Corporation Chuetsu Pulp & Paper Co., Ltd.

## Marubeni and Chuetsu sign Memorandum of Understanding for developing application and sales of cellulose nanofiber

Marubeni Corporation ("Marubeni") and Chuetsu Pulp & Paper Co., Ltd. ("Chuetsu") have agreed to jointly develop the application and sales of cellulose nanofiber "nanoforest<sup>®</sup>" produced by Chuetsu and signed a Memorandum of Understanding ("Agreement") on 17 April, 2017.

Cellulose nanofiber ("CNF") is made from plant fiber (pulp) that has been defibrated to the nano level. Although the material is derived from plant fibers, it is five times lighter and five times stronger than iron and steel. CNF is seen as a promising material for use in building materials, electronic devices, automobiles, cosmetics and other products. The Ministry of Economy, Trade and Industry in Japan estimates that the market related to cellulose nanofiber will expand to 1 trillion yen by 2030.

CNF "nanoforest<sup>®</sup>" is produced by the Aqueous Counter Collision method ("ACC method") invented by Professor Tetsuo Kondo of Kyushu University. Although it is made of just pulp and water it has high-sorbability, high-strength, high-transparency, high dimensional stability and a low thermal expansion. It is also "amphipathic" due to the ACC method which defibrates natural pulp very softly.

Chuetsu is building its first commercial plant which can produce 100MT CNF per year at Sendai mill (Satsuma-Sendai city, Kagoshima). Operation is expected to start in June 2017.

As of April 1, 2017, Marubeni established the CNF Business Incubation Section in its Wood Chip & Pulp Department. Marubeni is working to develop new applications of CNF and expand sales channels by fully utilizing the customer network it has established through its chemical and paper & pulp business.

Marubeni and Chuetsu will start to exchange information and set out to create new business and applications with a view of creating a Joint Venture in the CNF business field.