World’s First Pilot Plant for Production of Nanocellulose Inaugurated

Swedish research firm hopes to someday bring pilot program to commercial-scale level.

The world’s first pilot plant to produce nanocellulose was inaugurated on February 22 by the research company Innventia in Stockholm, Sweden.

According to Innventia, the facility makes it possible to produced nanocellulose on a large scale for the first time and is an important step towards the industrialization of a new energy efficient manufacturing process.

“With larger volumes, we can study the use of nanocellulose in applications that require more material,” said Michael Ankerfors, a research manager at Innventia.

Nanocellulose is a material derived from wood fibers. It has exceptional strength characteristics of the class with Kevlar, a light weight material. However, in contrast to Kevlar and other materials based on fossil fuels, nanocellulose is completely renewable, according to Innventia.

Previously, the production process was much too energy-consuming for the commercialization of nanocellulose to be conceivable, says Innventia, but due to the process developments carried out by the research firm, the energy consumption has been reduced by a total of 98%, representing a saving of 29 000 kWh per ton.

To give a comparison, the heating of a normal sized house takes approximately 18,000 kWh per year, Innventia added.

“For a long time, there’s been a great deal of interest from the industry in utilizing nanocellulose as a strengthening component in other materials, such as paper, composites and plastics,” Ankerfors noted. “We can also have the opportunity to continue the development of the process and to show interested parties how it could work in reality.”

Innventia said that all sub-steps are now in place in the process and production began the week prior to the inauguration.

“We’re extremely proud to be able to offer the industry real opportunities to participate in this field, which is so important for the future,” Ankerfors concluded. “Now we begin to work towards the next step — the installation of a full scale process with a partner in the industry.”

The inauguration was attended by representatives from the industry as well as public funders and participants in research related to nanocellulose.

Innventia noted that beyond simply looking at the new facility, attendees had the opportunity to take a closer look at samples of nanocellulose and various examples of applications such as barrier films, textile fibers and nanofoams made from nanocellulose.

Innventia AB is a world leader in research and development relating to pulp, paper, graphic media, packaging and biorefining.