

CH-Bioforce strives for a cleaner world with unique bioforsense technology

openaccessgovernment.org/article/ch-bioforce-strives-for-a-cleaner-world-with-unique-bioforsense-technology/172354

16 January 2024



In this interview, Petri Tolonen, CEO of CH-Bioforce, sheds light on the environmental benefits of Bioforsense technology

Bio-based side streams to end industrial waste increase

In a world where the demand for sustainable and eco-conscious products continues to surge, manufacturers face the task of redefining their operations and approaches to align with sustainability goals.

CH-Bioforce stands at the forefront of this movement, ready to meet the surging demand with its innovative Bioforsense technology.

Bioforsense technology is designed for nearly chemical-free processing of various biomass types such as wood and straw. This process yields exceptionally pure biomaterials – Cellense (cellulose), Xylense (hemicellulose), and Lignense (lignin). These sustainable materials can replace fossil-based raw materials and cotton as binders, fillers, emulsifiers, textile fibres, and even components in medical applications.

In this interview, Petri Tolonen, CEO of CH-Bioforce, sheds light on the environmental benefits of Bioforsense technology.

“We use industrial side streams as a raw material – we are turning waste to value. Our technology is very environmentally friendly, carbon neutral, and uses fewer chemicals and fresh water than conventional biomass fractionation processes.

“The customers can use our biomaterials without decreasing product useability or durability. The products maintain their features while the manufacturing produces less CO2 emissions, emits fewer microplastics into the world and decreases the demand for fossil-based raw materials,” says Tolonen.

What sets Bioforsense apart is that it’s the only solution out there that gently extracts all the major biomass components in a single process, Tolonen notes.

“Bioforsense technology is not restricted to any specific raw material – the opposite is, in fact, true. The technology can extract biopolymers from wood and other lignocellulosic feedstock, like agricultural and industrial side streams. By 2025, it’s predicted that the industrial biomass waste market size will be tens of billions of U.S. dollars annually, and this estimate is increasing rapidly,” Tolonen adds.



Petri Tolonen, CEO

Solving a global problem

Modern consumer industries heavily rely on fossil-based raw materials, while many agricultural side streams, like straw, are burned in the worst case. This wasteful practice results in billions of tons of greenhouse emissions globally, whereas these side streams could replace harmful or fossil-based components in the manufacturing process, Tolonen notes.

“This doesn’t have to be the status quo. We want to change that. We aim to turn waste into high-value raw materials for our planet’s sake. Our technology is already making this a reality,” Tolonen emphasises.

“The world is drenched in non-renewable waste. Microplastics are present in rivers, seas, and lakes, while greenhouse gases alter the climate and overexploit our fragile environment. We yearn for a world free of plastic waste and fossil-based consumer goods that harm the planet.”

The consumer demand is clear

Today’s consumers demand more sustainable goods and apparel. Simultaneously, regulations and legislation, like the EU Single-Use Plastics Directive, drive manufacturers to locate renewable, bio-based raw materials for their products. CH- Bioforce has already addressed this need through collaborations with various partners.

“Manufacturers want to use the raw material as efficiently as possible. We can further enhance the utilisation of cellulose-containing raw materials by using the generated side streams as raw materials. In the best case, the customer can use the resulting products in their own production.

“For example, let’s mention the production of flour from grain. In this case, the husk of the grains often goes unused. For example, hemicellulose can be made from the husk material, which can be used as a health-promoting nutrient in foods.

“For example, cellulose can be a sustainable alternative for textile fibre production, replacing cotton-based textiles. We have partnered with companies like Spinnova, who create sustainable materials for clothing brands such as Marimekko. We are also active in the cosmetics industry, as seen in a recent project with the HETKINEN lifestyle brand that produced promising results.

“Right now, CH-Bioforce is on the cusp of a significant development leap.

“We are building our production plant, enabling us to undertake increasingly larger projects. We are collaborating with global partners, and many exciting discussions are underway. The importance of our technology is undeniable,” Tolonen concludes.

It all started in Raisio, Finland

In 2011, Nicholas Lax, Sebastian von Schoultz and Lari Vähäsalo, both wood chemistry specialists, discovered that utilising vacuum and ensuring precise chemical control made it possible to extract hemicelluloses in purity and high yield in their native polymeric form.

After a few years of experiments, they further developed their findings and established CH-Bioforce in 2016. Now, the company is operating globally and looking towards its most significant development steps with its own production facility.

Please Note: This is a Commercial Profile



This work is licensed under a [Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License](https://creativecommons.org/licenses/by-nc-nd/4.0/).