Lignin Industries in media lately

PLASTICS TODAY

Lignin-rich Masterbatch Slashes Carbon Foo Compounds

Proprietary masterbatch from Sweden's Lignin Industries is set to have a major positive i in terms of bio content and lightweighting.

Stephen Moore
April 2, 2025
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Svenska Lignin Industries ingår avtal med brittisk kompounderare

in Industries AB, specialiserat på biobaserad plast tillver skogsindustrin, har ingått avtal med den brittiska komp ibutör av plastpolymerer, Hellyar Plastics.

t med avtalet är att det svenska ntech-företaget ska nå ut med sin de plast på nya marknader samt kommersialiseringen av sin e teknik.

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LIGNIN INDUSTRIES

Partnership with UK compounder Helly

11 December 2024

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— By PIE correspondent —

Bio-based producer signs partnership deal

DECEMBER 12, 2024
BIOPLASTICS & BIOPOLYMERS

BUSINESS

Lignin Industries partn with Hellyar Plastics t advance biobased plas

DANIELA CASTILLO MONAGAS — DECEMBER 4, 2024

TAGS: ABS BIO-BASED LIGNIN PP

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Swedish bio-based polymer producer Lignin Industries plans to scale up production after signing a partnership deal with a UK-based compounder and distributor. Following five years of R&D into a viable plastics alternative for large-scale production. Stockholm-based Lignin Industries is looking to Hellyar Plastics to scale up the commercialisation of its patented technology and bring its..

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Lignin Industries unveils two bio-based plastics projects

By RACHEL EVANS — April 3, 2025 — 4 Mins Read

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Bioform vacuum-formed ABS object

io-based materials, has signed a game-changing partnership mer expert with nearly seven decades of industry leadership. ilization of Renol®, Lignin Industries' patented bio-based ved from forest and agricultural residues.

synbiobeta — Want to explore the industry and connect

From Trees to Tupperware: Lignin Industries' Next-Gen Bioplastic Solution

In a breakthrough for sustainable manufacturing, Stockholm-based greentech firm Lignin Industries has teamed up with Hellyar Plastics, a leading UK polyr compounder, and distributor, to bring its eco-friendly plastic, Renol®, to market

December 4, 2024

Lång dags färd mot plast

KNIVSTA. **Efter många år av utvecklingsarbete verkar Lignin Industries stå inför ett genombrott för sin ligninbaserade termoplast. Råvaran finns inte bara i virke utan även i rester och avfall från jordbruket, där det i dag sällan tas till vara.**

Renol från Lignin Industries är en termoplast av växtlignin och växtbaserade oljor som kan blandas in i vanliga fossilplaster som polypropen och ABS för att minska miljöpåverkan. FOTO: LIGNIN INDUSTRIES

© Lignin Industries

TEXT
Ulf Aronsson

Allt som kan göras av olja och kol kan också göras av träråvara. Det har varit ett mantra under några år, allt sedan det stod klart att svensk skogsindustris tidigare paradprodukt, tidningspapperet, hade en tynande tillvaro framför sig. Men vägen till de nya produkterna är lång och än så länge är det få som tillverkas i någon större skala. Det hoppas Lignin Industries kunna ändra på.

Thermokunststoff

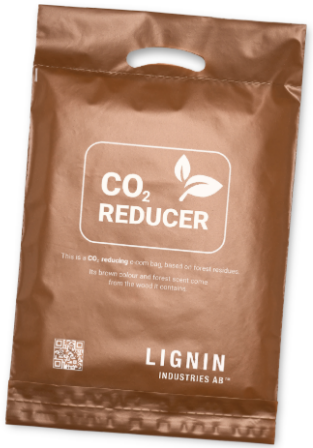
Biobasierte Kunststoff-Alternative

Der erneuerbare, biobasierte Thermoplast Renol bietet eine Alternative zu Kunststoff auf fossiler Basis.

Lignin Industries hat ihn sich gleich patentieren lassen: den Thermoplast Renol. Laut Unternehmen ist er erneuerbar, biobasiert und wird aus Lignin gewonnen, einem komplexen organischen Polymer, das nach Zellulose als das zweithäufigste natürliche Polymer auf der Erde vorkommt. Traditionell ist Lignin ein wenig genutztes Nebenprodukt der Forst- und Landwirtschaft, das oft zur Energie-gewinnung verbrannt wird. Laut dem schwedischen Unter-nehmen Lignin Industries steckt jedoch reichlich Potenzial in dieser erneuerbaren Ressource. So nutzte das Unter-nehmen die einzigartigen chemischen Eigenschaften des Stoffes, um eine biobasierte Alternative zu herkömmlichem Kunststoff zu schaffen – Renol.

2018 in Schweden gegründet, entstand die Technologie von Lignin Industries aus der Überschneidung der akademi-schen Arbeit des Firmengründers Dr. Christopher Carrick und seiner familiären Verbundenheit mit der europäischen Forstindustrie, die über fünf Generationen in die Vergangenheit reicht. Grüne Chemie zur Wiederverwertung von Reststoffen aus der Forstindustrie und die Vision, die Zukunft von Kunststoffen neu zu gestalten, verhalfen Carrick zur Entwicklung des neuen Thermoplasts. Die erste Produktionsanlage und der Hauptsitz von Lignin Industries befinden sich in Knivsta, in der Region Stockholm.

Zur Herstellung von Renol wird Lignin mit biobasierten Ölen extrudiert. Das Ergebnis ist ein thermoplastisches Granulat, das sich nahtlos in bestehende Fertigungsprozesse einfügen lässt. Es lässt sich entweder mit recycelten oder neuen Polymeren mischen, was die Herstellung von Hochleistungs-Kunststoffprodukten ermöglichen kann. Gleichzeitig soll die Abhängigkeit von fossilen Rohstoffen verringert werden.



BIOBASED PLASTICS

We have value

AND IT'S ON OUR DOORSTEP!

[GD] Can you explain what Renol is?

[CC] Renol is a combination of a natural oil, like rapeseed or olive oil, and lignin. The latter is a byproduct of the forestry and agricultural sectors and makes up between 20% and 30% of the tree's structure. It connects cellulose and hemicellulose, contributing to the wood's strength. It's also a waste material – the most plastic-like part of the biomass that is converted to plastic instead of being burnt for its energy value. Lignin is then blended with a biobased oil into thermoplastic granules called Renol, which gets mixed into a masterbatch.

Renol helps decrease the dependence on fossil raw materials in the plastics industry without compromising performance and recyclability. It's a platform material that should be used in combination with recycled and/or virgin plastics to reduce carbon footprint.

[GD] Can you take

BP&R Editor **Giulia Daniele** speaks with Lignin Industries' Founder and CTO **Christopher Carrick**, CEO **Fredrik Malmfors** and CMO **Kerstin Lagerlöf** about the partnership with British polymer compounder and distributor Hellyar Plastics and how this aims to scale Renol.

"There's a lot of push on biomass usage, its recyclability and the resiliency

Lignin-based pla

The sustainable solution driving the au fossil dependency

By the middle of the century, global emissions from plastic production are forecasted to triple [1], accounting for as much as one-fifth of the Earth's remaining carbon budget.

The global plastics industry remains chained to its fossil dependence for an array of reasons, and alternatives like biobased plastics only make up 0.5 % of the current market [2]. The small market share of biobased plastics must change if defossilisation targets and regulations are to be met.

This has created a new, unique problem for the automotive industry, where companies are struggling to transition from virgin plastics to biobased and/or recycled plastics, due to a current lack of tried and tested alternatives.

However, new innovations in biobased plastics represent a sustainable and functional solution to ending global reliance on fossil-based plastics, driving industries such as the automotive industry towards their climate goals.

Founding Lignin Industries

Paired with my family's rich history working in the forestry industry, my studies and research opened my eyes to the idea that nature contained a solution to our global reliance on fossil-based plastics.

Right at our feet sat an untapped and incredibly abundant source material. Unwanted in the forest and agriculture industries, lignin is the second most abundant organic material on Earth, found in all plants and trees.

700 million tonnes of lignin is routinely incinerated or discarded each year, yet when incorporated within plastics, the life cycle and value chain of lignin could be extended, delivering emission reductions at scale. A renewable resource with a very low carbon footprint, lignin is a so-called secondary material, as it does not compete with food production.

Two research projects undertaken by Lignin Industries — the Swedish developer of Renol, a bio-based thermoplastic derived from lignin — have the potential to significantly benefit the automotive industry. Dr Christopher Carrick, founder and CTO of Lignin Industries and Dr Lars Jerpdal of Scania presented details of the initiatives at a recent industry event.

Renol can be used in polypropylene (PP) and acrylonitrile butadiene styrene (ABS) for thermoforming and injection molding. It reduces the CO_2 footprint by replacing fossil-based plastics and enables nucleation for the Ku-Fizz process, which produces lightweight parts to reduce CO_2 emissions even further. As a result, Renol is a promising option for meeting the ELVP regulation.

The first project, called Bioform, aimed to develop vacuum-formable materials to replace fossil-

As more industries transition towards net zero, the appetite for biobased alternatives is expected to grow, to a 10–15 % share of the market by 2050.

Biobased plastics represent an attractive proposition for the automotive industry in their search for cost-effective, scalable, and sustainable plastic alternatives.

As part of a recent study funded by Swedish Vinnova, Lignin Industries worked with Scania, Autoform, and KTH Royal Institute of Technology to create vacuum-formable materials, replacing fossil-based plastics with biobased alternatives. The project incorporated high biobased content into Acrylonitrile Butadiene Styrene (ABS).

The project ultimately succeeded in replacing up to 44 % of plastic content with biobased fillers, achieving a 40 % reduction in carbon footprint.

The results indicated that the bio-composites developed in the study present a significant breakthrough for the automotive sector, offering a sustainable alternative to conventional fossil-based materials.

The biobased materials highlighted an enhanced fire retardancy, mechanical performance, and environmental

11 December 2024

Partnership agreement with distributor in the UK

Hellyar Plastics to bring Lignin Industries inn commercialisation of its patented technology

Swedish greentech company Lignin Industries AB has signed independent compounder and distributor of polymers, Whits innovative bio-based plastic to new markets, as well as scale patented technology.

Lignin Industries has developed a means of ending the plastic industry's reliance on fossil fuel-based plastics: incorporating lignin, the second most abundant organic material on Earth (found in all plants, e.g. trees), within truly sustainable, recyclable bio-based plastic. Going public following five years of R&D, Lignin Industries has created Renol®, a patented bio-based material developed from the lignin.

As a feedstock for bio-based materials, lignin is perfectly suited; it is considered a secondary material, as it is non-competing with food production. Lignin Industries sources its lignin from the forestry and agriculture industries, where its remarkable scalability is currently not utilised, as more than 700 million tons of lignin is routinely incinerated or otherwise discarded or used for low value applications per year. When incorporated within plastics, the life cycle and value chain of lignin is extended, and it delivers emission reductions.