

Nanocellulose Valley

Enabling today's forests to launch tomorrow's sustainable products

Today's sustainable products from forests



What is nanocellulose?

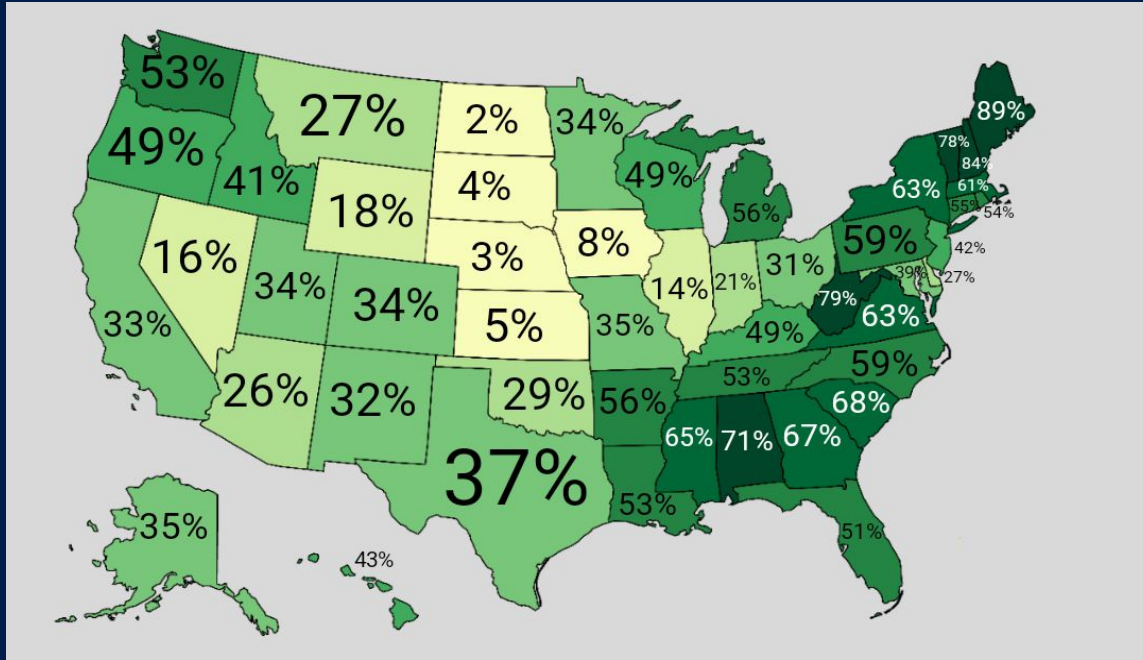
Nanocellulose is a material made from tiny particles of cellulose, which is the main component of plant cell walls.

These particles are so small that they can only be seen under a microscope.

Nanocellulose is very strong and lightweight, and can be used to make things like paper, textiles, and even some kinds of plastics.

It's also environmentally friendly because it's made from renewable resources and can be easily recycled.

Maine – the most densely forested state in the U.S.



- Largest contiguous, privately owned working forest in the U.S. – 16.3 million acres
- Infrastructure to support production of over 13 million tons of wood per year
- Proximity to largest consumer market in the world (Northeast US)



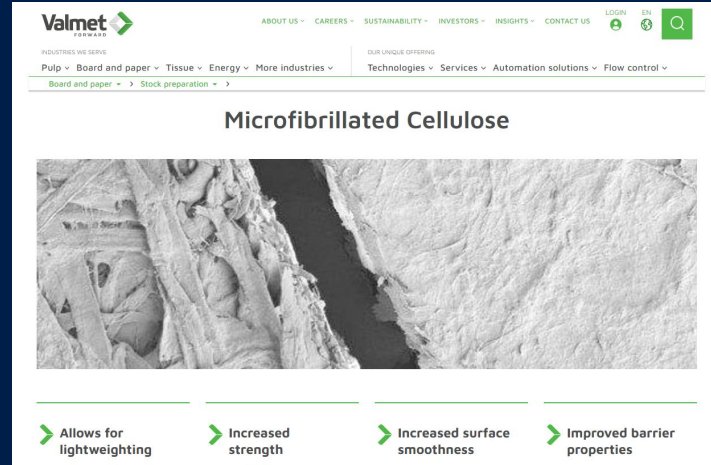
Nanocellulose Valley

Skilled Workforce • Research Expertise • Sustainable Forests

Nanocellulose – Unlocking nature’s potential



Commercial Nanocellulose Production



- 6 global, commercial installations in the U.S., Europe, and Brazil
- 4 sites in development in South America and Australia

Target Applications:

- Enhanced pulp

Building Synthetic Bone From Wood Fibers



- *Bio-compatible composite material made from nanocellulose*
- *Promotes growth of natural bone*
- *Safely dissolves over time*
- *Surgical bone scaffold or bone grafting implement*

Eliminates the need for:

- *Metal devices*
- *Follow-up surgeries*

Revolutionizing Construction Materials



- *Using nanocellulose as a binder*
- *Wood flour and nanocellulose composites*
- *Produce particleboard, fiberboard and flooring panels*

Eliminates the need for:

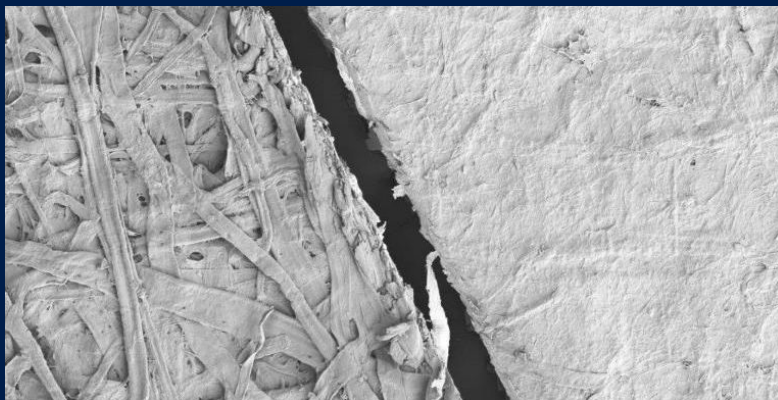
- *Formaldehyde*

Replacing Plastic Packaging

Using nanocellulose as a barrier



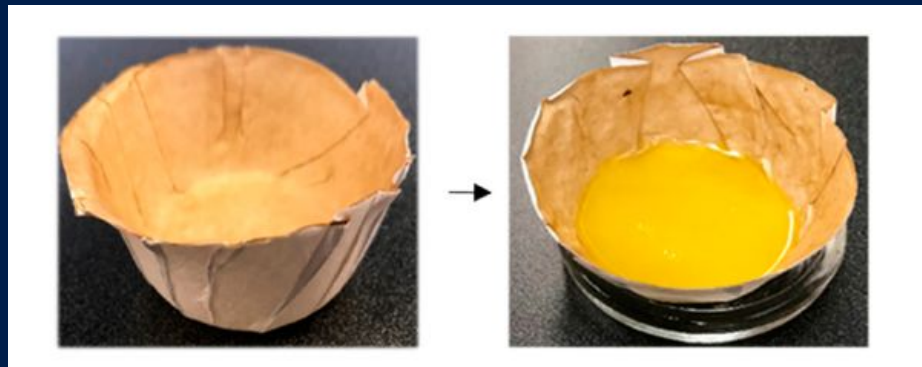
CNF Coated



Uncoated

Uncoated

CNF Coated



Biobased Composites



- *World's first 100% bio-based house*
- *Printed on the world's largest 3D printer located at the ASCC*



Resources for Developing Your Forest-based Solutions



**Sustainable
Forests**



**Skilled
Workforce**



**Research
Expertise**

Maine & Co

- Free and confidential consulting services for businesses seeking to locate in Maine.

Invest in Maine

- Identification of incubator workspace to low cost loans, a range of tax and financial incentives, and R&D funding for innovation, an ecosystem to maximize your company's chances of success exists here.

Maine Technology Institute

- Offers funding and programs to help Maine-based companies accelerate progress to market for new products, technologies, and processes.

My fellow bio-innovators:



***Dr. James Beaupre**
Director, Industrial
Cooperation
University of Maine*



***Dr. Susan MacKay**
Senior R&D Program
Manager II
University of Maine*



***Bri Bowman**
Senior Program Director
Maine Development
Foundation*

Nanocellulose Valley

Welcome to Nanocellulose Valley

Explore the Possibilities

Research at UMaine

Order Nanocellulose Samples

Contact Us

<https://umaine.edu/nanocellulosevalley/>



22-24 August 2023

Orono, Maine

Thank you!

Bedankt!

Danke!

Grazie!

Merci!

Gracias!