

NEWS

PARTNERSHIP SELECTS CELLULOSIC NANOMATERIAL PROPOSALS

Work to lead to green products of the future while creating jobs and advancing forest health

U.S. Endowment for Forestry and Communities, Greenville, SC

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The U.S. Endowment for Forestry and Communities (Endowment) today announced the selection of nine scientific proposals designed to advance the commercialization of Cellulosic Nanomaterials (CN). The projects are being funded through P³Nano – a public-private partnership founded by the Endowment and the USDA Forest Service (USFS) with federal matching funds being provided by the Forest Service’s State and Private Forestry and Research and Development branches and work coordinated with the USFS Forest Products Laboratory. The initial projects total more than \$3 million in partnership funding.

Through a review process that included experts in business, government, and academia with extensive experience in CN, proposals were selected from 65 submissions requesting more than \$20 million.

Carlton Owen, Chair of the P³Nano Steering Committee and President of the Endowment stated, “Our partnership is committed to finding new high-value products that build on the renewability of the nation’s forests. Cellulosic nanomaterials offer the promise of not only advanced green products for a more sustainable future but they do so while putting Americans to work in family-wage jobs at the same time that we advance the health and vitality of forests.”

Cellulose Nanomaterials are simply natural structural building units that originate from trees. A nanometer is one millionth of a meter or about 1/100,000th the width of a human hair. Materials at the nanoscale possess unique properties and can facilitate the development of new, high-value products with novel properties such as exceptional strength. Some product applications include: packaging, automotive and aircraft components, paper and paperboard, reinforced cement, polymer composites, medical and defense applications, and electronics. Products made from CN are abundant, renewable and sustainable and hold the potential to create additional demand for wood-based products and markets for low-value wood generated from forest restoration efforts. Such markets will help keep forests as forests while helping to ensure their long term health by using a raw material that is renewable, considerably lighter weight, and less expensive compared to many other competing nanomaterials.

Each individual grant is approximately \$350,000. Proposals awarded include:

- **Purdue University** to explore incorporation of CN in Portland cement and a separate investigation to remove roadblocks to CN-reinforced nanocomposite fibers.

- **Georgia Institute of Technology** to incorporate CN into a glass fiber composite in conjunction with a major manufacturer in the power sport industry.
- **Oregon State University** to produce two polymer composites reinforced by CN at commercially-scalable levels for a variety of industries.
- **University of Maine** to produce particleboard panels by replacing urea-formaldehyde resin with CN and an additional effort to engineer and construct a commercial-scale Cellulose Nanofibril (CNF) manufacturing plant with a capacity of 2 tons/day.
- **Virginia Polytechnic Institute and State University** to develop a method to detect whether, and to what extent, nanocellulose exposures may occur in the workplace.
- **USDA Forest Service Forest Products Laboratory** to investigate sustainable packaging applications that include CN reinforced bioplastic composites and an economic study to investigate the costs of production of CN.

“We were pleased with the response to our request for proposals and the opportunity to review such outstanding initiatives. Unfortunately we cannot fund them all. However, the projects we have selected will rapidly advance commercialization of this important, and sustainable material of the future,” said Owen. Advances in cellulosic nanotechnology will help stimulate the economy by cost-effectively enabling new and improved products that meet the needs of people and the environment. Demand for forest products helps create value in forests allowing for better management and restoration of forests across all ownerships.

P³Nano had previously awarded its foundational grant focusing on the environmental health and safety of cellulosic nanomaterials ensuring that priority one is the understanding of the environmental impacts and public safety.

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About the Endowment: The **U.S. Endowment for Forestry and Communities** (the Endowment) is a not-for-profit public charity working collaboratively with partners in the public and private sectors to advance systemic, transformative, and sustainable change for the health and vitality of the nation’s working forests and forest-reliant communities – www.usendowment.org

About the **USDA Forest Service, Forest Products Laboratory**: The Forest Products Laboratory (FPL) is the Nation’s leading Federal wood utilization research laboratory and serves the entire United States. The FPL develops science and technology to conserve, extend, and sustainably utilize forest resources in order to improve the health, diversity, and productivity of the Nation’s forests to meet the needs of current and future generations.

For more information contact:

Michael Goergen, Director, P3Nano, 240-475-5741, michael@usendowment.org