

# Forest Energy & Bioproducts



# Forest Products



**The University of Maine has marshalled a broad array of researchers, scientists and partnerships to create energy solutions and fossil fuel replacement products with science and technology that is grounded in responsible forest and ecosystem management.**

As part of the vision and goals of advancing forest-based technologies and supporting our region's forest businesses, the University of Maine operates an inter-departmental research institute focused on increasing Maine's research infrastructure in sustainable forest bioproducts.

Our team of forest-focused researchers, engineers and professionals collaborate to fulfill their mission to advance the understanding of the scientific underpinnings, system behavior, and policy implications for the production and adoption of forest-based bioproducts which meet the societal needs for fuels, chemicals and advanced materials in an economically and ecologically sustainable manner.

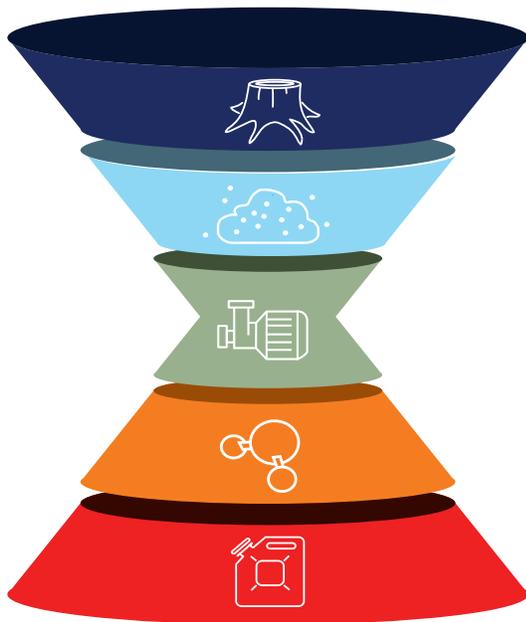
This investment gives Maine's forest products industry the opportunity to move forward in unprecedented ways.

Innovations at the University of Maine will help support state and regional forest-based industries to harness our available forest resources to manufacture bio-based fuels, chemicals and other nature-based advanced materials, changing the way we use wood today.

The University of Maine operates a dedicated testing and commercialization center focused on forest biochemical research and innovation. The 40,000 ft<sup>2</sup> research and pilot-scale conversion facility located near campus is a fee-for-service operation which provides biochemical businesses and startups objective and independent access to pilot operations and trials, evaluation and testing services, and collaborative development and commercialization opportunities with university faculty and visiting researchers while offering research opportunities for graduate students and hands-on experience for undergraduates.

Our team both protects intellectual property and shares precompetitive best practices, while meeting all necessary approved environmental permitting standards.





## FOREST RESIDUAL BIOPRODUCTS CONVERSION PROCESS

- RAW MATERIAL** Wide variety including forest residues, wood waste, paper & packaging
- REDUCTION** Creates a uniform size based on process requirements and raw material type
- BREAK DOWN** Chemical and thermal processes reduce the raw materials to their chemical constituents
- INTERMEDIATES** Chemical constituents are processed into a range of intermediate chemicals
- FINISHED GOODS** Bio-based sources of petroleum-based goods such as textiles, fuels, paints, cleaners and lubricants for specific end products

## BEAKERS, BUCKETS AND BARRELS

Rapid prototyping at a benchtop scale to quickly screen and determine viable chemical pathways and products

Biomass to Bioproducts (B2P2) pilot plant converts one dry ton of biomass per day into bio-based chemicals for commercial evaluation



Batch and continuous reactors which validate benchtop results, increase efficiency and improve chemical purities



[forestbioproducts.umaine.edu](https://forestbioproducts.umaine.edu)

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