

# Efficient Method for Pretreating Lignocellulosic Materials to Produce Paper with Improved Properties



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**WARF: P07307US**

[View U.S. Patent No. 8,092,647 in PDF format.](#)

**The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in a more efficient method for producing high quality pulp for paper manufacturing.**

## OVERVIEW

To make paper from wood, wood first must be transformed into pulp. However, current pulping techniques require high amounts of energy or large quantities of wood and can result in poor quality paper.

The inventors previously developed an efficient method for producing pulp from wood chips by pretreating the chips with oxalic acid and sodium bisulfate (see WARF reference number P00342US). This processing step required little time and improved both the economics of the pulping process and the properties of the finished paper product.

## THE INVENTION

UW-Madison researchers now have improved their previous technology by using derivatives of oxalic acid, preferably diethyloxalate (liquid) and dimethyloxalate (solid). These derivatives work better than oxalic acid in the pulping process. They can be added to the wood chips as dry components and then treated with steam.

## APPLICATIONS

- Paper manufacturing

## KEY BENEFITS

- Reduces energy consumption in generating thermomechanical pulp
- Improves paper strength and optical properties
- Reduces the amount of chemicals needed for chemical pulping
- Sugars can be extracted before or after the refining process and used to create additional value-added products.

## THE WARF ADVANTAGE

Since its founding in 1925 as the patenting and licensing organization for the University of Wisconsin-Madison, WARF has been working with business and industry to transform university research into products that benefit society. WARF intellectual property managers and licensing staff members are leaders in the field of university-based technology transfer. They are familiar with the intricacies of patenting, have worked with researchers in relevant disciplines, understand industries and markets, and have negotiated innovative licensing strategies to meet the individual needs of business clients.



- In contrast to oxalic acid, which works best when applied as a solution in water, these derivatives can be applied as dry components.
- Process is suitable for materials including hardwoods, softwood chips, recovered paper or agricultural residues.

## ADDITIONAL INFORMATION

### Related Technologies

[WARF reference number P00342US describes a method for treating fibrous materials with oxalic acid to more efficiently produce paper.](#)

### Tech Fields

Clean Technology - Energy & resource efficiencies

Materials & Chemicals - Paper

## CONTACT INFORMATION

For current licensing status, please contact Joshua Carson at [jcarson@warf.org](mailto:jcarson@warf.org) or 608-960-9844.

