

Production of Rice Straw Fiber Board Using Lignin from Catalytically Depolymerized Rice Straw

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Categories:

- Materials and Manufacturing

Keywords:

- Binder
- Board
- Carcinogen
- Composite
- Fibers
- Formaldehyde
- Lignin
- Low Cost
- Manufacturing
- PMDI
- Rice Straw

Purdue University researchers developed a method for extracting lignin and reinforcing fibers from rice straw for use in composite board manufacturing. Contemporary fabrication of composite binders requires use of formaldehyde or PMDI resin, one poses a health hazards and the other is expensive. To remediate these drawbacks, researchers at Purdue University have developed a process for extracting depolymerized lignin from rice straw, which is then formulated into a sustainable binder. Combination of lignin-based binder with clean cellulose fibers from the reaction produced composite boards with desirable physical properties. A cost analysis shows a significant cost reduction over formaldehyde-free composite board production when fabricating medium density fiber boards. This technology provides a low-cost sustainable, green method for producing composite boards that could deliver higher margins to composite board manufactures.

Advantages:

- Less Expensive
- Non-carcinogenic materials

Potential Applications:

- Manufacturing
- Construction

People:

- Caruthers, James M (Project leader)

Intellectual Property:

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