

An Improved Method for Modification of Lignocellulose Components to Produce Biocomposite Filler

TECHNOLOGY DESCRIPTION

This technology is a method for modification of lignocellulose biomass powder with minimal amount of hemicellulose content to be used as filler in bio-composite.

TECHNOLOGY FEATURES

This technology can reduce dependency on petroleum-based plastic. It has an improved characteristic of fiber which provides higher thermal stability. This technology can produce bio-composite with excellent melt-molding and mechanical properties can be produced. It utilizes superheated steam at 251-310 °C for 3 to 9 minutes. More than 85% of the lignocellulose powder produced through this method has particle size (length) of below 250 μm.

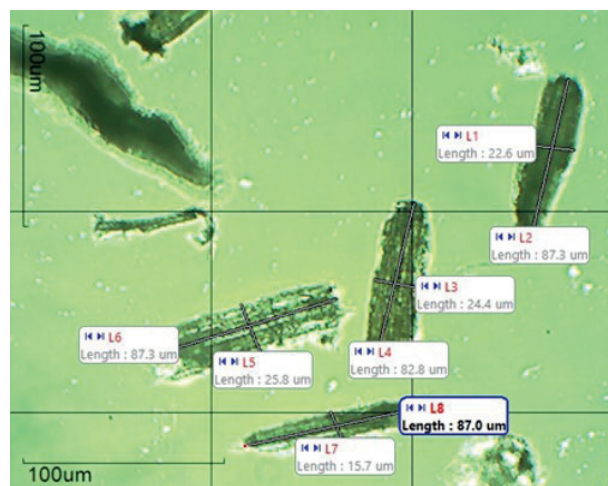
ADVANTAGES

- Improved method for isolation of lignocellulose components
- Improved characteristic of fiber with higher thermal stability

INDUSTRY OVERVIEW

Prospect: Bio Composite Manufacturers, Polymer Manufacturers

Many companies offering bio composites are aggressively trying to enhance their product portfolio to meet customer requirements and explore untapped markets, thus this method of modification would be a product of interest to the bio composite and polymer manufacturers. The global polymer market revenue was estimated at US\$ 250 billion in 2013. The market is estimated to reach US\$450 billion by 2025. On the other hand, global market of bio-based polymer is expected to grow at a CAGR of 10% - 11.5%. Increase in demand for bio composites is expected from regions of Asia Pacific due to increasing construction, manufacturing and automotive sectors. Asia-Pacific is also estimated to be the largest automotive composite market with total share of around 43% globally. Asia-Pacific is turning into a hub for bio composite manufactures and is expected to report a high demand for bio composites over the coming years. Commercial and residential construction industry in Asia Pacific is flourishing and bio composite is preferred for manufacturing due to increasing environmental concerns, stringent government regulations and as a social responsibility.



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