

Bio-based ink made from bleached lignin and cellulose derivative

Compositions comprising modified Lignin useful for additive manufacturing

Technology

This invention involves a bio-based ink for Direct Ink Writing (3D printing), which is made of modified lignin and hydroxypropyl cellulose and contains ethanol as a solvent. It is based on green engineering principles and have comparable properties to petroleum-based plastic parts. The desired mechanical properties can be customized with lignin type and lignin content. The ink is completely bio-based and allows a lignin content of up to 50%. Furthermore, the mechanical properties can be adjusted from stiff to elastic. The color of the materials can be changed from black to light yellow and transparent with the help of bleaching.

Innovation

- Alternative to synthetic petroleum-based materials with 100% bio-based carbon
 - Environmentally friendly as biodegradable
 - Petroleum resources are saved
- Use of the waste product lignin generated during paper production (sustainability) or during biorefining

Application

- Direct Ink Writing (3D printing)
- manufacturing of goods
- Free shaping

Developmental Status

- Laboratory scale

Responsible Scientist

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Green engineering
Sustainable products

Patent Status

PCT app. WO 2023/062239 A1
EP 22802963.3
US 18/700761

Reference Number

ZEE2020092501
Status: NOV-24



CTF – The R&D Company of the
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