

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

Development Status

- Laboratory scale

Responsible Scientist

Prof. Dr. Marie-Pierre Laborie

Albert-Ludwigs-University,
Dept of Forest utilization and
forestry work science

Patent Status

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Contact

Dr. Boris Brik
Campus Technologies Freiburg GmbH
Stefan-Meier-Str. 8 | D-79104 Freiburg
Email: boris.brik@campus-technologies.de
Tel: +49 (0)761 203-5203
Fax: +49 (0)761 203-5021