

A method for producing a low ash content lignin from Kraft lignin

ABSTRACT

- The inorganic content (also known as ash content), typically including metal ions, present in kraft lignin hampers its use in higher value applications.
- The production of carbon fiber, carbon fiber reinforced polymers, and anode materials requires low ash content lignin as raw material.
- The only state-of-the-art industrially adopted technologies for kraft lignin production are LignoBoost® and LignoForce™, which produce lignin with 0.5–3.0 wt. % ash.
- Currently, no options for low-ash content kraft lignin production are available.
- TalTech inventors have developed **a novel method** for producing a low ash content (0.03 wt. %) lignin from Kraft lignin achieving **up to 40-fold ash content reduction**.

SUGGESTED USE

The current global market size for CF is at least 173 000 tons, or 173 million kgs, per year. The minimum estimated CF market size is USD \$6.6 billion.

Production of:

1. **low ash content kraft lignin**
2. **carbon fiber**
3. **carbon fiber reinforced polymer**
4. **anode material**

ADVANTAGES

1. Environmentally friendly method.
2. Reduced risk for hazards in the production process.
3. The method could be integrated with already known kraft lignin separation processes in a simple way.
4. Patent pending.



ADDITIONAL INFORMATION

State of development

TRL3 – Critical function of technology/application demonstrated through experimentation (analytical & experimental Proof of Concept).

Intellectual property info

Patent pending.

Media/miscellaneous

Webpage for the research group: <https://chemlab.taltech.ee/>

Contact information

Andrei Nikonov, Technology Transfer Expert at TalTech

andrei.nikonov@taltech.ee