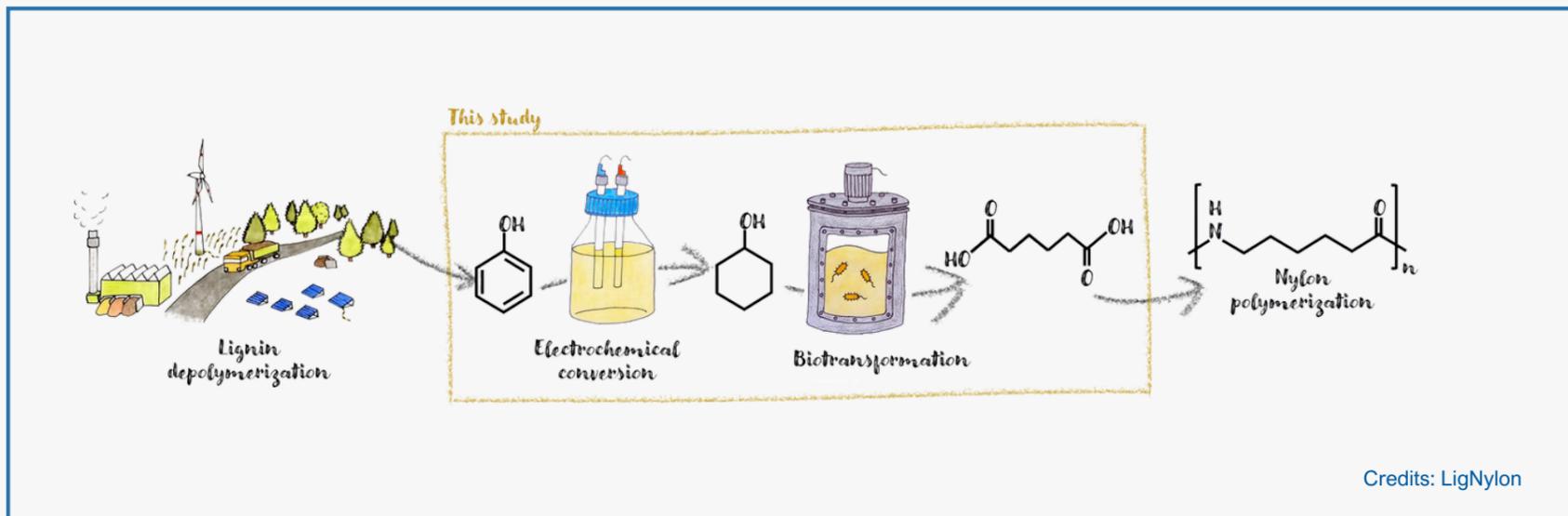


LigNylon Sustainable Production of Nylon



Project:

The team led by Falk Harnisch and Rohan Karande has developed a process for the sustainable production of nylon. Normally, fossil phenol is used for the production of nylon. The researchers showed that they can replace fossil phenol with lignin waste from the wood industry. To do this, they developed a two-stage process to produce adipic acid as a key precursor to nylon. In the LigNylon project the process is to be scaled up and validated in the lab (up to technology readiness level 4).

Financial Volume / Term:

250.000€ / 24 months

Team:

Project leader: Falk Harnisch

Cooperation partner: Rohan Karande and Tilo Pompe (University of Leipzig)

Mentor: Cornelia Hahnemann (DOMO Caproleuna GmbH)

Patents:

Patent application EP3510164

Status Quo:

Petrochemical-based polymers

Challenges:

Polymers based on renewable, sustainable raw material sources as part of a bio-based circular economy.

Solution:

The raw material for current industrial adipic acid (AA) production, such as cyclohexanol and cyclohexanone, is derived from fossil sources. Here, aromatics from lignin waste are electrochemically converted into cyclohexanol, which is then synthesised into adipic acid by microbial biotransformation. The overarching aim of LigNylon is to develop an integrated platform for producing Nylon 6.6-like polymers from renewable feedstocks for an environmentally friendly production of nylon in the industry.

Partners:



If you are also interested in funding, please get in touch with us by email, phone or in person!

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