

EteRnAL - Electricity from eco-friendly Recyclable Energy mAterials derived from nanocelluLose

Initiative: "Experiment!" (beendet)

Ausschreibung: Explorative Phase

Bewilligung: 27.11.2018

Laufzeit: 1 Jahre 6 Monate

Projekt-Website: <https://www.lbf.fraunhofer.de/de/projekte-produkte/eternal-biobatterie.html>

The increasing number of mobile electronic devices all over the world demands an efficient and reliable power supply. Modern batteries contain a highly diverse mix of electrolytes, metals, plastics, salts, metal-organic compounds and various other substances. Used batteries do cause major environmental problems, due to the vast amount of energy needed to reprocess the mixture of materials. The main objective of this proposal is to utilize electrochemical systems already present in nature and transfer them into a biodegradable matrix, serving as carrier material. Nanocellulose is considered a suitable nanomaterial due to its ready availability, biodegradability, and biocompatibility. When interwoven, nanocellulose can form highly porous and mechanically strong bulk materials which can be used as substrates for the impregnation of a range of different nanomaterials. The project aims to synthesize suitable systems, and to insert them in different types of nanocellulose before evaluating them electrochemically. The most promising results will be tested to serve as electrodes.

Projektbeteiligte

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