

## **Frei formbare Halbzeuge aus vorwiegend nachwachsenden Rohstoffen für die Anwendung in Innen- und Außenräumen - Biokunststofffassade**

Förderkennzeichen: UT 400

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Today, architecture increasingly relies on free formed building envelopes of mostly oil-based plastics. Bio-based plastics and composites could combine the advantages of free forming with ecological benefits but such materials are not yet available. In the coming years, large quantities of high-quality raw materials from biomass waste will be provided. It will be possible to actually use these raw materials before their combustion or composting (cascade use). In view of this, it makes sense to develop high-tech materials that can be manufactured from nearly infinitely available biomass. The objective of the research project is to develop slabs of predominantly renewable raw materials that are suited for interior and exterior walls that do not bear loads. Such walls are required to be weather- and impact-resistant and must meet the demands of fire protection. Since besides functional aspects, visual and haptic qualities are relevant to architecture applications, the long-term behavior of selected plastics will be analyzed and properties will be modified successively. In addition, foamed slabs with closed-cell top coatings for additional thermal insulation effects will be manufactured. A walk-in pavilion will be built to illustrate the realization of a freeform surface with the developed semi-manufactured products. This pavilion will serve as demonstration object for builders, architects, construction companies, and others interested in the subject. Perhaps, the mold parts manufactured will prove to be suitable as well for other outdoor applications.