

## Neue Metallmatrix-Verbundwerkstoffe mit natürlicher Diatomeenverstärkung

Laufzeit: 01.05.2019 - 31.12.2021 Vorhaben-Nr.: 248 E

## Forschungsvereinigung:

Stifterverband Metalle e.V. Wallstraße 58/59 D-10179 Berlin

Tel.: +49 30 726207-119 E.Mail:simon@gdb-online.org www.wvmetalle.de/die-wvmetalle/stifterverba Gefördert durch:



Bundesministerium für Wirtschaft und Klimaschutz

aufgrund eines Beschlusses des Deutschen Bundestages

## Forschungseinrichtung

Fraunhofer-Gesellschaft e.V., Fraunhofer-Institut für Keramische Technologien und Systeme IKTS Institutsteil Materialdiagnostik IKTS-MD

## Vorhabenbeschreibung:

The goal of the project is to develop, manufacture and characterize novel non-ferrous metal matrix composites, MMC, with Al-allov matrix and diatoms as reinforcement. Diatom frustules have excellent specific mechanical properties and are available as natural/cultivated resource. The pre-competitive R&D will be focused on novel MMC with extraordinary combinations of structural and functional material properties. A benefit for participating SME is involvement in research actions, which ensures direct influence to and knowledge about the MMC, thus resulting in competitive advantage. The price of the reinforcement components will be lower than so-far used reinforcements and the leap between properties of conventional (non-reinforced) metallic materials (matrix) and MMC will be large enough to justify higher manufacturing costs. We will prove the concept for AI-MMC applied in lightweight constructions (e.g. parts for cars, other transportation and electr. engineering), with a perspective for lower costs at significantly increased specific strength and stiffness. Applications will be demonstrated for wrought and cast Al-alloy-MMCs. The potential of the concept will be discussed for other non-ferrous matrices (e.g. Zn, Cu alloy) too. The challenge of this pre-competitive project is to explore and consolidate a new technological direction in engineering of diatom-reinforced MMC. The project consortium with Fraunhofer IKTS, Bia?ystok University of Technology and industrial partners have the competence to fulfil the requirements of the project on materials technologies and characterization. Each partner contributes to the value chain of the project with own expertise. access to advanced materials processing and characterization equipment. Fraunhofer IKTS is recognized in the field of material characterisation and nanoanalytics, the Faculty of Mechanical Engineering is recognized metal physics, engineering and processing as well as advanced microscopy and mechanical testing.

Weitere Informationen zum Projekt erhalten Sie bei der AiF-Forschungsvereinigung: Stifterverband Metalle e.V.