Project: CerAM SLS

Presenter: Fraunhofer IKTS

Abstract:

The CerAM SLS project aimed to develop additive manufacturing methods, specifically Selective Laser Sintering (SLS and µ-SLS) for the production of photocatalytically active TiO2 water filter systems. The project partners – TIGER Coatings, Laser Institute Hochschule Mittweida and Fraunhofer IKTS – combined their expertise in materials and process development to achieve this goal.

A novel thermosetting polymer-based feedstock was created to support the manufacturing of complex ceramic structures while preserving the photocatalytic activity of TiO2. The project successfully established SLS processes for creating ceramic green parts and optimized parameters for both traditional SLS and µ-SLS, enabling high-resolution printing.

The developed water filter units demonstrated effective degradation of organic contaminants in water when exposed to UV light. Future work will focus on enhancing the efficiency and scalability of these photocatalytic systems.