NAPLES, ITALY 30 JUNE - 4 JULY
ACEX2025 NAPLES
18th International Conference on Advanced Computational Engineering and Experimenting

ABSTRACT

Metal Additive Manufacturing for Dental Instruments: Benefits, Challenges and Regulatory Hurdles

Leonhard Hitzler [1,2]

[1]Technical University Munich, Institute of Materials Science, 85748 Garching, Germany.
[2]KaVo Dental GmbH, Bismarkring 39, 88400 Biberach, Germany.
Contact: Leonhard.Hitzler@tum.de

Additive Manufacturing offers unprecedented access to geometrical features and shaping of the microstucture. Thereby enabling us to combine multiple functions into a single part, whilst achieving location specific properties. As such, it is a fascinating technolgy for improved medical tooling, providing improved functionality and comfort for the dentist, whilst enhancing the comfort of the patient.
However, the pathway for a new product to be accepted for reclaimable medical tool in direct contact with the patient is long and filled with hurdles, not just comprised of sceptisism towards new technologies, but also riddled with regulatory hurdles to be passed. In this talk, I'll provide an overview through the current offerings in the dental tooling industry, to get an impression about what's readily available today. This is followed by a summary of the current regulations in the market and why these exist. As often, it's a compromise. Meant to ensure that only safe products are be sold, the costs for verification can outweigh the financial gains and thus, hinder innovation.
Considering the strive towards the optimum which we as scientist often have, the reality faced in industry is often rather different. This talk is meant to spread information and help to better understand the differing approaches between industry and research.