

# SEMINAR

Wednesday, 22.4.2026, 14:00 , Kolar's Lecture Hall

## Slurry-based additive manufacturing of ceramics: a 10 years journey from porcelain cups to the smallest 3D-printed technical ceramics

**Andrea Zocca,**

**Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin**

Many successful additive manufacturing (AM) technologies for technical ceramic materials are based on slurry or paste feedstocks. This may seem unexpected given that the main technologies for metals and polymers use powders or filament feedstocks. Slurries can be challenging to formulate and handle, but offer a unique possibility: to homogeneously disperse the very fine, often sub-micrometer, particles that are the typical raw materials for technical ceramics.

This presentation will introduce three AM technologies developed in the past three years at BAM. The first two, the "layerwise slurry deposition" and the "laser-induced slip-casting" use water-based slurries to offer unique combinations of materials selection and part's size. The third technology uses nanoparticle suspensions in a photocurable resin to shape complex geometries down to the micrometer by two-photon polymerization.

While different in working principle, all three technologies have as a fundament the principles and know-how of colloidal science and processing, which run like a common thread throughout the presentation.

## Kindly invited.