

## Optical Microtopographic Characterization of Archeological Ceramics

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### Abstract:

Optics and optics and photonics based inspection tools and methods had extensively proven their invaluable importance in the preservation of cultural heritage and artwork. The non-invasive inspection of the 3D shape of objects and of the micro-relief structure of its surfaces can be of high importance in the characterization process required in most works of restoration or preservation of archeological artwork. In this communication we will report on a method of optical non-invasive microtopographic characterization of the surface of archeological ceramics. The samples used in this study are pre-historical and pre-colonial ceramics and pottery of tribes in the Paranaíba valley in Minas Gerais, Brazil. The pottery found is decorated with incisions with different geometric distributions and levels of complexity corresponding to two periods of indigenous Indian occupations: one from a period dated at  $1,095 \pm 186$  years ago and another of the early nineteenth century dated between  $212 \pm 19$  years and  $190 \pm 30$  years ago seemingly corresponding to the occupation of the territory by southern Kayapós tribes.