

Practice-based comparison of imaging methods for visualization of toolmarks on an Egyptian Scarab

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Abstract

3D representations were made of a small Egyptian scarab with a gold band by a number of methods, based on photogrammetry and photometric stereo. They were evaluated for colour fidelity and spatial detail, in the context of a study of toolmarks and manufacturing techniques of jewellery in ancient Egypt. It was found that although a 3D laser scanner gave the best geometric accuracy, the camera-based methods of photogrammetry and photometric stereo gave better representation of fine detail and colour on the object surface.

Keywords: Digital heritage, image acquisition, 3D imaging, visualisation, gold.