*Jakub Krzesłowski*

# Study on close range digitisation techniques integrated with reflectance estimation.

## Abstract

As 3D imaging techniques gain popularity in non-invasive cultural heritage (CH) digitisation, additional modalities, such as spectral and microgeometric properties of surface, are introduced to the resulting models. Reflectance estimation enables visualization of CH objects with photo-realism and increases the descriptiveness of a digital copy. The optical behaviour of surfaces can be visualized by creating textures from multiple viewpoints or by retrieving intrinsic optical properties of the surface's material using photometric techniques and by utilizing physically based rendering. The developed method concentrates on structured light projection combined with multidirectional illumination in order to retrieve reflectance information along with surface geometry. The goal of this approach is to provide quantitative description of objects in accordance with human perception and to enable realistic visualisation of virtual 3D models under arbitrary illumination conditions.

OGX|OPTOGRAPHX  -  http://ogx.mchtr.pw.edu.pl
tel:(+48) 22 234 86 30 | fax:(+48) 22 234 86 01
Institute of Micromechanics and Photonics
Warsaw University of Technology
8 Sw. A. Boboli Str.
02-525 Warsaw, Poland