VERSION 1

APR 11, 2019

Spectral photogrammetry protocol V.1

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OPEN ACCESS

DOI:

dx.doi.org/10.17504/protocols.io.v52e88e

Protocol Citation: Aurore Mathys 2019. Spectral photogrammetry protocol.

protocols.io

<https://dx.doi.org/10.17504/protocols.io.v52e88e>

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Protocol status: Working

We use this protocol and it's working

Created: Dec 05, 2018

Last Modified: Apr 11, 2019

PROTOCOL integer ID:

18330

Acquisition

1 Place de specimen at the center of the turntable with scales, photogrammetry marker and MSI

calibration card (CHSOS).

- 2 Setup lamp and camera distance. Place the camera at approximately 30°.
- 3 Setup the correct exposure for each wavelength and verify that the exposure is correct in spectrashoot using the MSI calibration card. Adjust exposure until the specimen is correctly lit.
- 4 Start capturing: for one specimen position capture at all the 15 wavelengths + white light. Then add the UV-pass filter and capture pictures in the UV wavelengths (UVR). Next place the UV-cut off filter and capture picture for each UV wavelengths (UVF). Pictures should be captured in raw format.
- 5 Rotate the turntable of 10° and repeat step 4. Do this for the complete rotation.
- 6 Move the camera at an angle of 60° at the approximately the same distance than previously and repeat the operation for the complete rotation.
- 7 If necessary turn the specimen and repeat the process for as many rotation/views as necessary.

Pre-processing

- 8 Separate the wavelengths in different folders.

Processing

- 9 Open Agisoft Photoscan and create a chunk for each wavelengths (rename the chunks accordingly). Import the pictures.
- 10 Go to workflow > batch process and add the following step: align pictures (highest), build dense cloud (high), build mesh (high).
- 11 Repeat the processing 3 times to make sure the results are reliable.
- 12 If the results are reliable, export the models as .stl for surface analysis.