

Application BRUSH FOR WASHING DISHES

Assignment

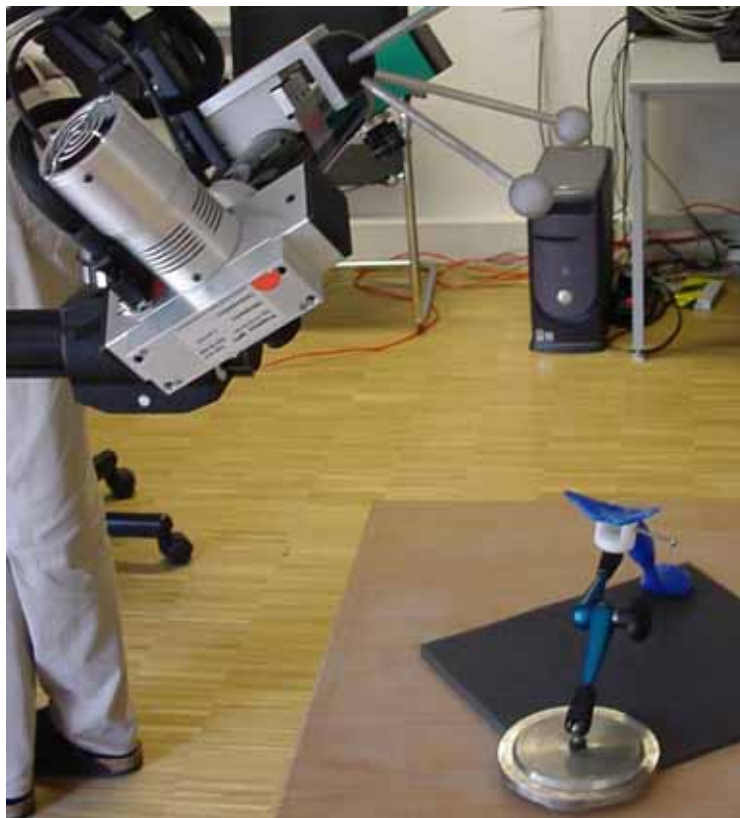
- Digitization of a designer brush for washing dishes. A complete volume model shall be included. After the digitization a surface reconstruction is carried out by the company Polytec.
- Accuracy of 0.1 - 0.2 mm

Measuring Object

- Brush for washing dishes from plastic, approx. 30 cm long

Measuring system

- opto *TOP*-HE 400 (OT200-23)
- Calibration from 13.06.03
- Field of view: 320 x 250 mm
- Sensor accuracy: $\pm 40 \mu\text{m}$
- OPTOCAT Version 3.1



Measuring scene with opto *TOP*-HE 400



front side of the object



back side of the object

Measuring principle

- Topometry; imaging measurement technique with structured illumination
- Combination of GrayCode and phase-shift method
- ICP matching; align of the single view by mean of the object geometry

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Specifications

- No pre-treatment of the object surface, particularly non spraying with micro powder
- Non contact measurement
- Low measuring time
- The surface data of a closed volume model shall be delivered in STL format

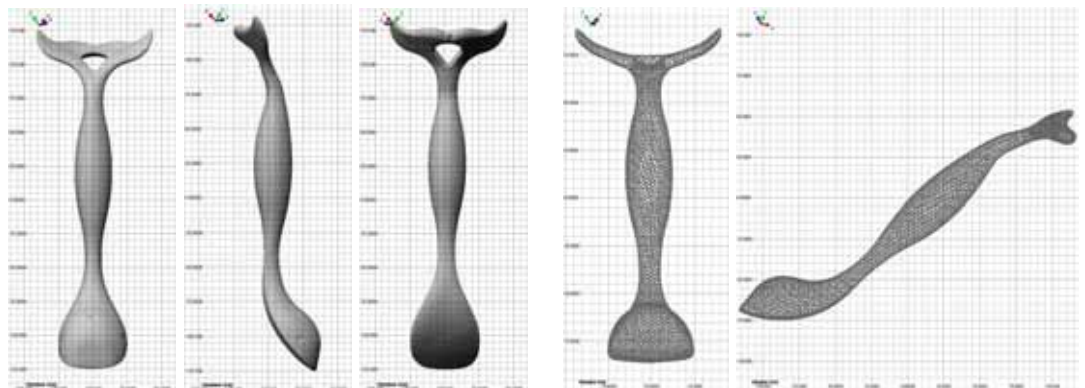
Measuring assembly

- Because the alignment of the single views by means of the object geometry is realized interactively, no special fixing of the object is necessary. The brush for washing dishes is taken by hand in different positions and the 3D-data are received with the measuring sensor, which is mounted on a tripod.

Execution

- Fast acquisition mode without image average
- 14 single image acquisitions were required

Visualization of the measuring data



Full view front

left

back

Front and side view with parallel 2 mm IGS plots in x-, y- and z-direction

Data Output

- STL models with thinned out point raster of 10 μm , 50 μm and 100 μm

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