

OBJECT'S SURFACE ROUGHNESS MEASUREMENT USING HIGH RESOLUTION DIGITAL CAMERA

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ABSTRACT

This study aims to present extracting the three dimensional positions and precision measurements of Object's surface roughness using stereo digital image data obtained from a high resolution DCS 420 digital camera.

For real-time processing, a primary window operating roughness measurement system was constructed by means of Visual basic 6.0 in windows.

This system is composed of six modules; image edit, control point survey, bundle adjustment, automatic matching, three dimensional positions generation , and roughness measurements.

As the analysis results of measurement accuracy of digital camera using this system, the roughness error of the normal distance between the best fitting reference surface obtained by least square method and sample points in the ideal plane or surface did not exceed $\pm 0.1\text{mm}$

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