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Real-time Profilometry Using Double Fringe Projection Techniques: A Compact Design for Endoscopes

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Abstract

A profile measurement approach using two diffractive elements to generate two fringe patterns is presented. Only one phase measurement needed for operation. In conjunction with the endoscope, the compact design makes it possible to inspect dynamic object inside the body cavity.

Key words：Fringe projection; Hologram; Projected fringe profilometry; Sinusoidal grating