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## Beam-steering in hollow ZrO<sub>2</sub>/SiO<sub>2</sub> distributed Bragg reflector waveguides for one-dimensional RGB imaging

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### Abstract

A novel one-dimensional beam deflector based on a hollow Bragg reflector waveguide for RGB imaging was proposed and evaluated by modeling. Large steering range over 30 degrees is possible by only 100 nm change in the hollow air-core thickness. Electrostatic actuation enables fast and precise control of the beam-steering with a low operation voltage. An ultra-small divergence angle and super-high resolution are expected for device lengths of a few millimeters thanks to the high coherency of the output beam. The proposed hollow-waveguide type deflector is extremely compact and can be arrayed with high density. (C) 2014 The Japan Society of Applied Physics

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