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Abstract
In this paper, we proposed a novel process, which incorporates with the photolithography and soft molding techniques. For the Bragg grating fabrication, the stamping transfer technique, incorporated with holographic interference technology, was used to transfer the grating from photoresist master mold to the PDMS soft rubber mold. Then, we use the PDMS polymer mold to obtain the Bragg reflection grating waveguide on the OG146 polymer by using of the photolithography and soft molding techniques. Therefore, it utilized Micro-Electro-Mechanical System (MEMS) to produce a channel optical waveguide molding and then it fabricated a optical waveguide Bragg filter by using mentioned soft molding technology.
This technique has the advantages such as simple treatment, low loss and fabrication cost. Optical waveguide and grating were observed through SEM and AFM system. The observed results achieve the optimal diffraction efficiency. The optical transmission characteristics were measured in terms of optical spectrum analyzer (OSA).
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