

## **Polymer based multimode interference optical couplers**

### Abstract

Weakly guiding Multimode Interference (MMI) optical cross couplers based on photo definable BenzoCyclobutene (BCB 4024- 40) polymer are presented. The devices are designed based on general and paired interference mechanisms of MMI and fabricated on BK7 glass substrate with a thin layer of SiO<sub>2</sub> as cover. A cost effective chemical etching technique is used in the fabrication process to take advantage of the photosensitive nature of the polymer. The 2×2 cross couplers are testified to demonstrate a maximum crosstalk of -17.81 dB and maximum loss of 3.37 dB.