

A CWDM/DWDM arrayed waveguide grating based on photodefinable polymer

New design of conventional AWG structures for CWDM/DWDM application based on photodefinable BenzoCyclobutene (BCB 4024-40) polymer is presented. The devices are designed on BK7 glass substrate and thin layer of SiO₂ as cover and operated at 1550 nm window. The crosstalk level for CWDM_AWG is simulated to be less than -23 dB while the value is less than -33 dB for DWDM_AWG. The insertion loss is better than 5 dB and 6 dB for CWDM_AWG and DWDM_AWG, respectively. Meanwhile, the device size has been significantly reduced with recorded size of 21.5 mm × 10 mm and 17.8 mm × 5 mm for DWDM_AWG and CWDM_AWG, respectively. Although numbers of conventional AWG structures have been designed and implemented, this work is considered to be the first based on BCB polymer.