

## Crosstalk improvement of polymer in glass thermo-optical multimode interference switch

### Abstract :

A new structural design of combined variable optical attenuator (VOA) and optical switch has been proposed in this paper. The design is based on the multimode interference (MMI) architecture and it has been demonstrated for crosstalk improvement of optical switch. The device operates by manipulating thermo-optic (TO) effect that naturally existed in all optical waveguide material. By applying a polymer on glass material platform, the optimized VOA with optical attenuation of 21.52 dB has been achieved with applied power of 36.4 mW. The simulation result shows that the VOA helps to achieve significant improvements of optical switch performance particularly in crosstalk reduction up to 89.66%.