M SQUARE
株式会社 エムスクエア http://www.mxmco.com info@mxmco.com
〒101-0051 東京都千代田区神田神保町1-34-2F
TEL(03)3294-0560 FAX(03)3294-0563
〒815-0041 福岡市南区野間1-10-18
TEL(092)554-6800 FAX(092)554-6802

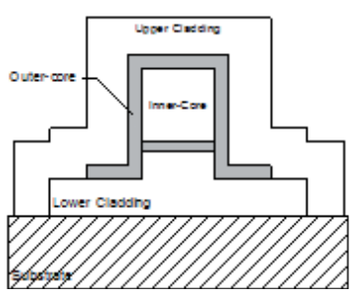
Reconfigurable Optical Components

In the future, network components will increasingly be required to be all-optical to avoid costly optical-electrical-optical (OEO) conversions. Low cost will be a key attribute, however, since many components located close to the customer premises can not be shared among multiple customers. Integrated-optic devices are the key to achieving high system functionality at low cost since they offer:

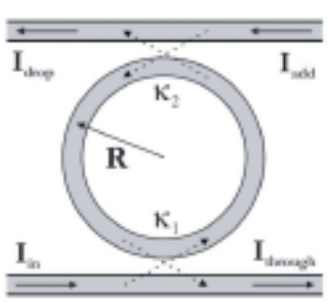
- No electro-optical(EO) conversion in the data path
- Monolithically-integrated of multiple functions
- Cost savings in packaging, device area and power consumption
- Reconfigurability – increased system flexibility

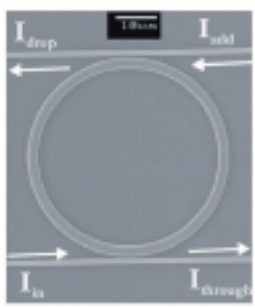
Suitable devices must provide low-attenuation with negligible polarization dependence at low cost. Conventional waveguide technologies can not satisfy these requirements.
XiO Photonics is developing network components based on the TriPleX™ waveguide technology available from LioniX, BV, Enschede, The Netherlands. TriPleX™ waveguides are the first integrated-optic technology to offer:

Requirement	TriPleX Technology
Low modal birefringence	≤ 10-4
Low propagation loss	≤ 0.1 dB/cm
Low coupling loss	0.2 dB/facet
Integration	+++
High-Contrast	3% - 25%
CMOS Compatibility	☑



The basic building block of XiO Photonics' devices is the Microring Resonator.



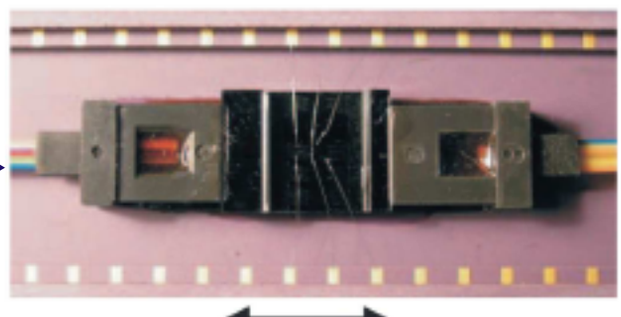


Integrated-optic Microring Resonator

- Space switch and wavelength selector
- small device area (low-cost)
- reconfiguration through thermal-tuning
- scalable to very complex structures

ROADM based on the Microring Resonator

- 4 microring resonators
- 40+ Gbit/s transmission
- Pigtailed and fully packaged
- Completely reconfigurable



Xio Photonics expects that the combination of low loss and polarization independent waveguide technology together with the flexibility of multiple microring resonator structures will provide components with very competitive functions

09-2008

Excellence in Integrated Optics