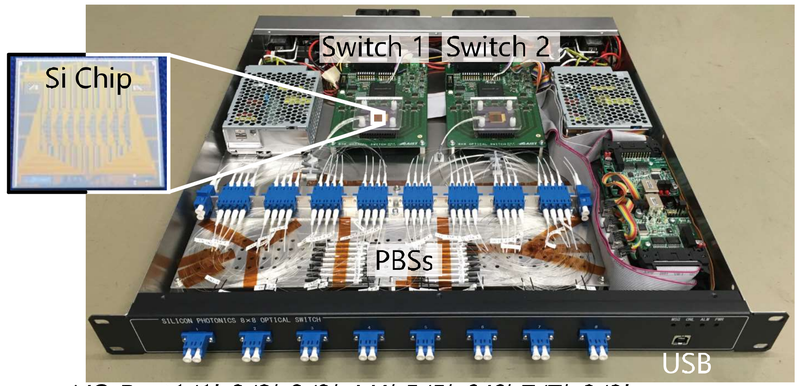
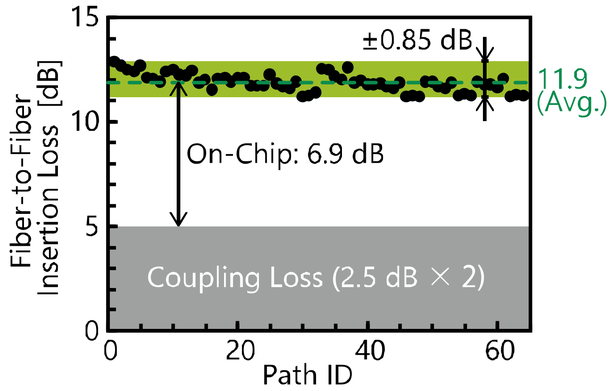
Highly Integrated Silicon Photonics Switches

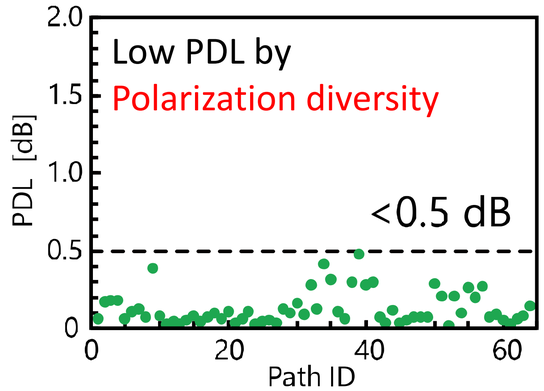
Highly-integrated large-scale optical path switches are crucial for energy-efficient flexible networking, such as the Dynamic Optical Path Network. We have developed various optical path switches, including an 8 x 8 and 32 x 32 blade switch, based on CMOS-compatible silicon photonics.

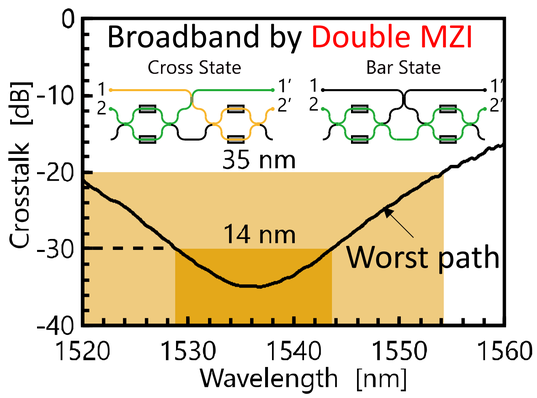
Polarization-insensitive broadband 8 x 8 strictly-non-blocking blade switch



I/O Port1/1′ 2/2′ 3/3′ 4/4′ 5/5′ 6/6′ 7/7′ 8/8′







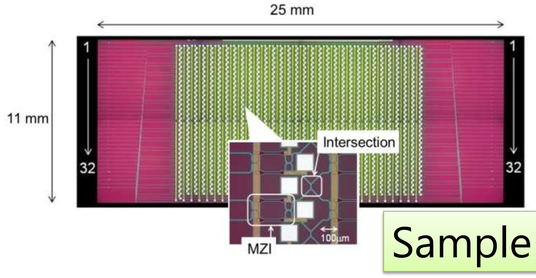
Now operating in the demonstration section

Related technical presentation: Tu3F.5

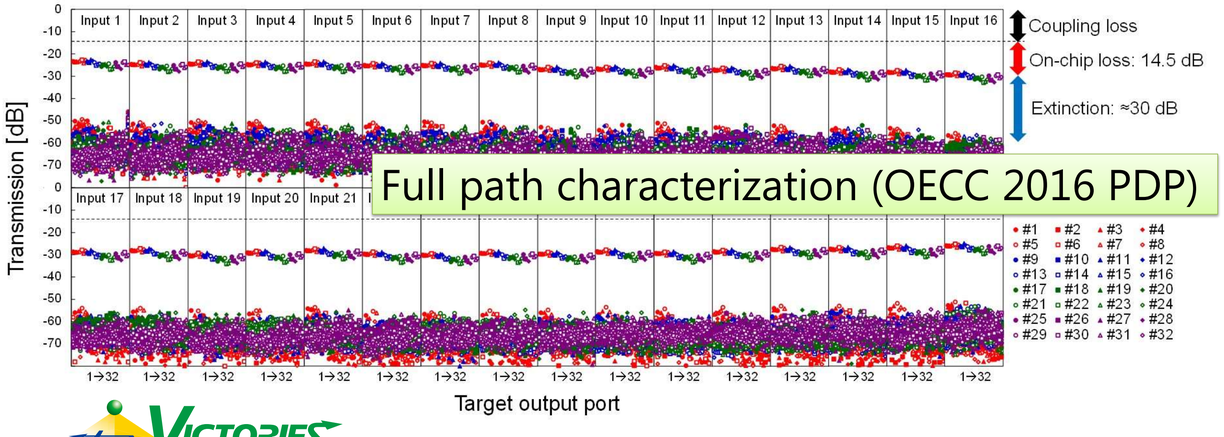
Switching speed acceleration: W4E.3
On-chip polarization diversity: W4E.5

32 x 32 strictly-non-blocking blade switch

FURUKAWA ELECTRIC



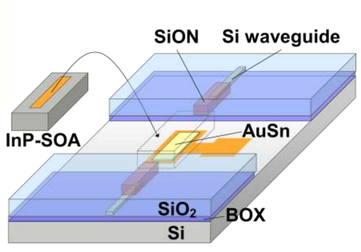
Sample on display

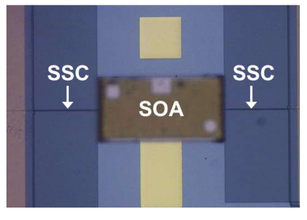


Full path characterization (OECC 2016 PDP)

Hybrid integration technology of InP-based optical-gain chip

FUJITSU

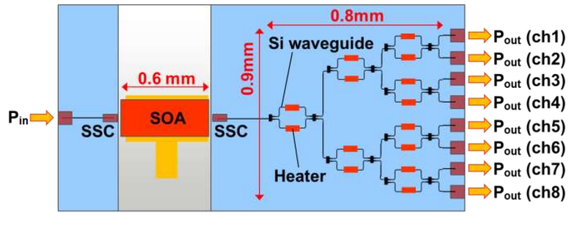




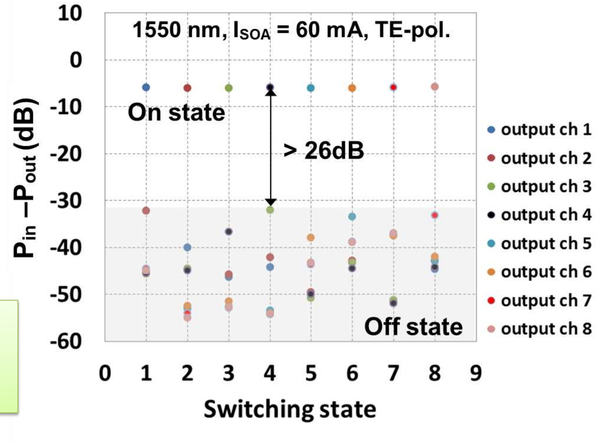
Sample on display

10-dB net gain achieved

1x8 silicon switch integrated with InP-SOA



Switching operation with optical amplification (OFC 2016 Th1C.1)



VICTORIES