

Polariton Releases Reliability Data

September 24, 2024
Zurich, Switzerland

Polariton Technologies announces today a groundbreaking generation of plasmonic electro-optic non-hermetically packaged modulators for applications at temperatures up to 85 °C. Such devices will be essential supporting future data center connectivity with 1.6T and 3.2T optical transceivers. This corresponds to 400 Gbit/s intensity modulation and direct detection (IM/DD) per single lane and to coherent dual-polarization 1.6 Tbit/s modulation per wavelength for inter-data center communication.

The announcement is made in conjunction with an accepted paper at the European Conference for Optical Communication (ECOC) 2024 and a talk given by Wolfgang Heni, co-CTO of Polariton, in Frankfurt this week; “We have been testing dozens of devices in continuous operation and long-term storage at various temperatures. It turns out that the prevention of oxygen diffusing into the plasmonic device also protects it from other agents”.

The paper published at ECOC displays long-term measurement for more than 4000 hours continuous operation in air with less than 10% in V_{π} variation. An increase of V_{π} is usually associated with the degradation of the electro-optic material, the stability of the other key performance indicators is the result of an effective encapsulation from the environment and stressors like oxygen, water, and heat.

Further highlights of the paper include a predictable insertion loss of the plasmonic slot of 0.4 dB/ μm and grating couplers that attenuate light by less than 2 dB. On top of optical transceivers, the new generation of modulators targets microwave photonics and microwave antennas up to 300 GHz.

About Polariton

Polariton is a Swiss designer and manufacturer of high-performance photonic integrated circuits (PICs) for ultra-high-bandwidth and low-power applications in communication, computing, test & measurement, space and quantum technologies markets. Exceptional performance is achieved by combining the established silicon photonics platform with plasmonic active devices enabling operation in sub-THz regimes, in particular with Mach-Zehnder and ring resonator modulators.

About Polariton

Polariton is a Swiss designer and manufacturer of high-performance photonic integrated circuits (PICs) for ultra-high-bandwidth and low-power applications in communication, computing, test & measurement, space and quantum technologies markets. Exceptional performance is achieved by combining the established silicon photonics platform with plasmonic active devices enabling operation in sub-THz regimes, in particular with Mach-Zehnder and ring resonator modulators.

Follow us on LinkedIn [@polariton-technologies](#) and visit our [website](#).

Media Contact

Helena Echeverri
info@polariton.ch
+41 44 589 51 29