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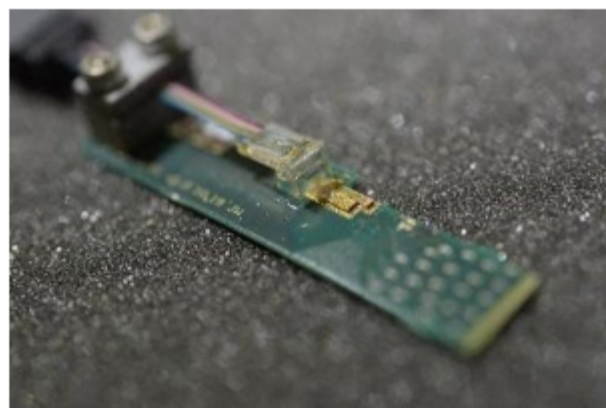
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Top Stories

Integrated, High-Speed QKD Broadens Reach of Quantum Security

A University of Geneva research team led by professor Hugo Zbinden has developed a QKD system based on silicon photonics that can transmit secure keys at a speed of 2.5 GHz. The new QKD system is a potential advancement for the state-of-the-art in integrated QKD and could provide the groundwork for the implementation of QKD in everyday applications.

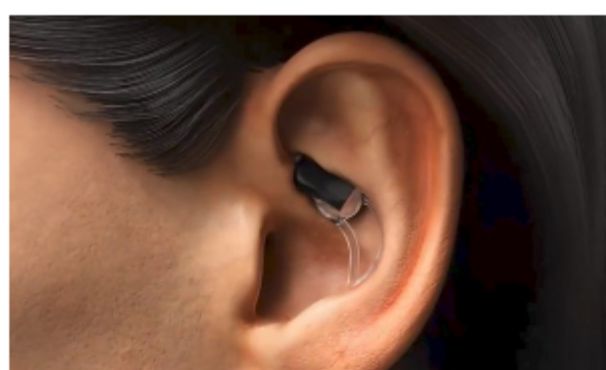
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In-Ear Wearable Measures Blood Flow to the Head

Digital health company STAT Health has unveiled a 24/7 in-ear wearable that uses optical sensors to measure blood flow to the head to better understand symptoms such as dizziness, brain fog, headache, fainting, and fatigue that occur upon standing. All are common symptoms for illnesses such as long COVID.

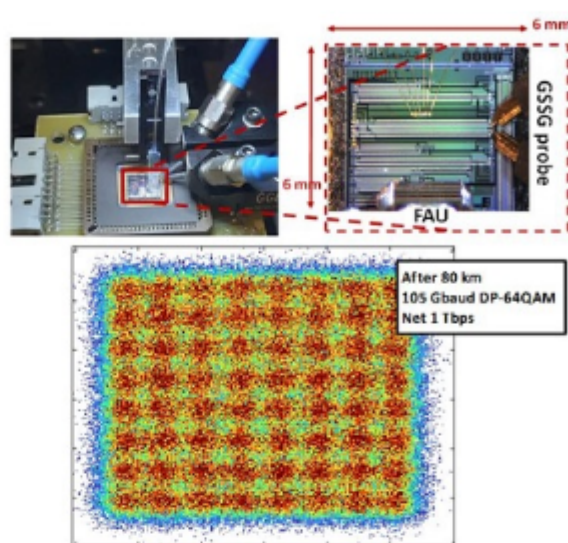
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Modulator Drives Record-Fast Transmission in Face of Data Traffic

Although silicon photonics holds potential as a platform for optical transceivers, owing largely to its CMOS compatibility, the approach is limited in its electro-optic bandwidth. It also carries high driving voltage requirements. The qualities can hinder its use in optical communications network scaling, which is needed for the rapid growth of data traffic. Using standard chip technology and standard data encoding algorithms, researchers at McGill University and Ericsson Canada demonstrated optical communication at 105 Gbaud with net 1 Tbit/s transmission. The team designed the system using a CMOS-compatible silicon photonic modulator, claiming a record data rate of 1 Tbit/s.

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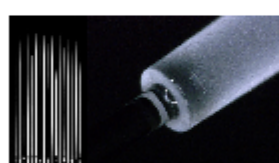
Photonics Spectra Reference Chart

Photonics Media

This full-color, 30 x 20.5-inch poster of the photonics spectrum displays the major commercial laser lines, detectors and optical materials in the ultraviolet to the far-infrared and beyond. The convenient format makes it easy to quickly find the information you need.

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Confronting the Drug Epidemic with Portable Spectroscopy

Thu, Jul 6, 2023 1:00 PM - 2:00 PM EDT

Portable spectrometers have the potential to be a powerful tool for combatting the modern illicit drug trade in the field. The most significant advantage of portable spectrometers over other field tests is their capability to provide confirmatory analysis, which is rapid, reliable, and creates a reviewable record. Although no single portable spectrometer can analyze all samples, for example from bulk to trace or pure substances to complex mixtures, each modern instrument has its advantages and limitations with regard to the detection and identification of illicit drugs. Ultimately, a toolbox approach is needed to ensure that the right tool is used for the right job in the right way. Brooke Kammrath and Pauline Leary highlight applications of portable spectroscopy and spectrometry in field detection of illicit drugs which both have notable effects on the delivery of improved criminal justice. Sponsored by Metrohm USA Inc.

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