Communications & Data Centres

Datacentre Optical Switch - collaboration with UC Berkeley, US

Data centers—the backbone of the internet—are under pressure to handle ever-growing traffic. Enter the UC Berkeley Switch, a silicon photonic device that moves data at lightning speed using light instead of electricity. Traditional switches rely on electrical signals, which create heat and slow things down. This photonic switch operates in sub-microsecond timeframes, dramatically improving efficiency and scalability. Why does this matter? Faster switches mean quicker cloud services, smoother video streaming, and better support for AI applications. They also reduce energy consumption, helping data centers become greener. The UC Berkeley Switch is a glimpse into the future of computing, by merging photonics with silicon, this innovation delivers speed, sustainability, and reliability—all in one tiny chip. It's not just about faster internet; it's about building the infrastructure for tomorrow's digital world.

PhotonicLEAP

PhotonicLEAP tackles one of the biggest challenges in photonics: cost. Photonic chips—devices that use light instead of electricity—are essential for high-speed internet, medical imaging, and advanced computing. But packaging these chips is expensive and complex. **PhotonicLEAP** introduces a scalable packaging solution that cuts costs by up to 90%, making photonic technology more accessible than ever. Why is this important? Lower costs mean photonics can move beyond research labs into everyday applications, from faster cloud services to portable diagnostic tools in hospitals. It also supports sustainability by minimizing materials and energy use during manufacturing. **PhotonicLEAP** is more than a technical upgrade—it's a game-changer that accelerates the adoption of light-based technologies worldwide, unlocking new possibilities for communication, healthcare, and beyond.