

LICENSING OPPORTUNITY: NANOPHOTONIC SPECTRAL TRANSLATION OF ELECTRO-OPTIC FREQUENCY COMBS

DESCRIPTION

Problem

The problem with on-chip coherent light generation in nanophotonics is the difficulty of integrating efficient, stable, control, and electrically pumped, while maintaining high coherence and low power consumption.

Invention

The technology consists of an apparatus and process using an electro-optic frequency comb as the pump laser, used with a nonlinear microresonator to output one or more spectrally translated frequency combs in spectroscopy.

BENEFITS

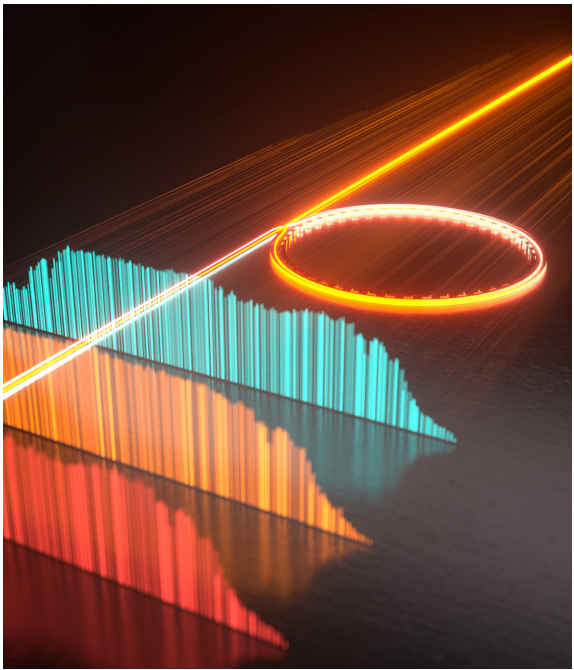
Potential Commercial Applications

The technology enables compact, efficient, and high-speed optical systems for applications such as data center interconnects, LiDAR, biosensing, chemical detection, atomic clocks, and quantum photonics.

The technology can allow data centers to become faster and more energy-efficient. It can support scalable cloud infrastructure, reduce cooling and infrastructure costs, and enable exascale computing and AI workloads.

Competitive Advantage

The technology provides greater opportunities over the existing approach for providing frequency agility, narrowly spaced comb teeth, calculable wavelength, and flexible wavelength access, while only requiring a single input laser.



An electro-optic frequency comb is spectrally translated via nanophotonics.

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