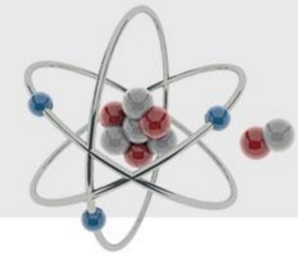
Q & A



Q : What is the meaning and application of this research?

A : Microcombs provide a path to broad-bandwidth integrated frequency combs with low power consumption, which are compatible with wafer-scale fabrication. Yet, electrically-driven, photonic chip-based microcombs are inhibited by the required high threshold power and the frequency agility of the laser for soliton initiation. By injection locking of laser diode and high-Q silicon nitride microresonator, the system operating at an electronically-detectable sub-100-GHz mode spacing requires less than 1 Watt of electrical power, can fit in a volume of ca. 1 cm3, and does not require on-chip filters and heaters, thus simplifying the integrated microcomb.

Q & A

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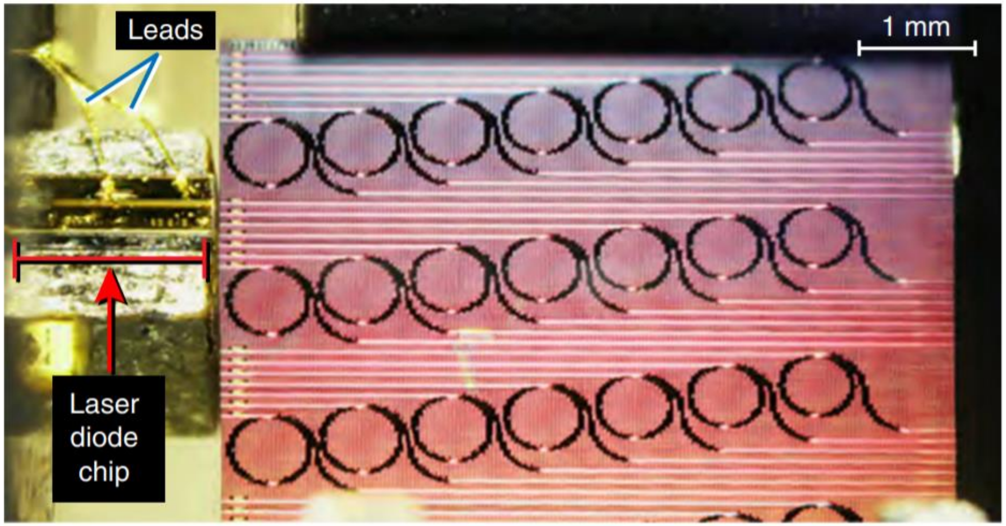
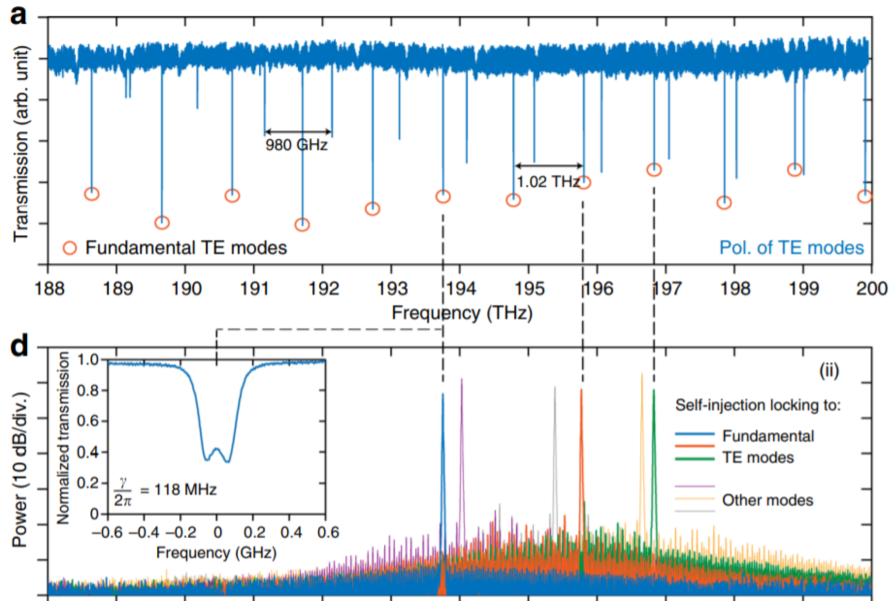


Q : In Fig. 1a, Si3N4 photonic chip contains multiple microresonators. Is there any difference between those microresonators?

A : According to the author, the ring's radius is same. The only things that they gave difference on them are wave-guide/resonator width and similarly they changed the gap distance between the bus waveguide and ring radius in order to know the ideality, critical coupling and intrinsic loss as well.

Q & A



Q : Why there's a peak in the inset of Fig. 2d.

A : All resonances, which give rise to the laser self-injection locking, feature mode splitting as a result of backscattering. The back-coupling rate for the measured resonance, extracted from its mode-splitting profile, is γ/2π = 118 MHz. Peak was made by two minimum transmission points near it and doesn't really have a physical meaning.