The Role of Lithium Niobate and Silicon Photonic Chips in Optical Modules

Utilizing a dual-external-cavity structure, the lasers leverage complementary low-loss silicon-nitride photonics and ultrafast thin-film lithium-niobate (TFLN) photonics via hybrid integration ...

Hybrid silicon-LN optical devices merge the superior nonlinear optical properties of LN with the mature integration technologies of silicon photonics, enhancing overall device performance and ...

Widespread application of thin-film LiNbO 3 requires a reliable solution with precise lithographic control. Here we demonstrate a heterogeneously integrated LiNbO 3 photonic platform...

The ability to span the entire spectral range from radio to optical wavelengths illustrates the versatility of lithium niobate as a platform material in integrated photonics.

Photonics is poised to play a unique role in quantum technology for computation, communications and sensing. Meanwhile, integrated photonic circuits--with their intrinsic phase stability and high ...

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The emergence of thin-film lithium niobate (TFLN) brings this proven material into the domain of integrated photonics, enabling tightly confined waveguides with low loss and direct access to the ...

Heterogeneous integration of silicon photonics and thin-film lithium niobate (TFLN) combines the advantages of both platforms, and enables co-integration of high-performance ...

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Hybrid thin-film lithium niobate Mach-Zehnder electro-optic modulators can be incorporated within silicon and silicon nitride photonic circuits for improved performance in both classical and quantum ...

In this review, we will discuss the latest and important developments of the above technologies and devices, as well as the remaining bottlenecks towards fully integrated LN photonics for complex ...

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