

ALUVIA Photonics

Revolutionizing photonic integrated circuits
with Al_2O_3 technology

 December 2025

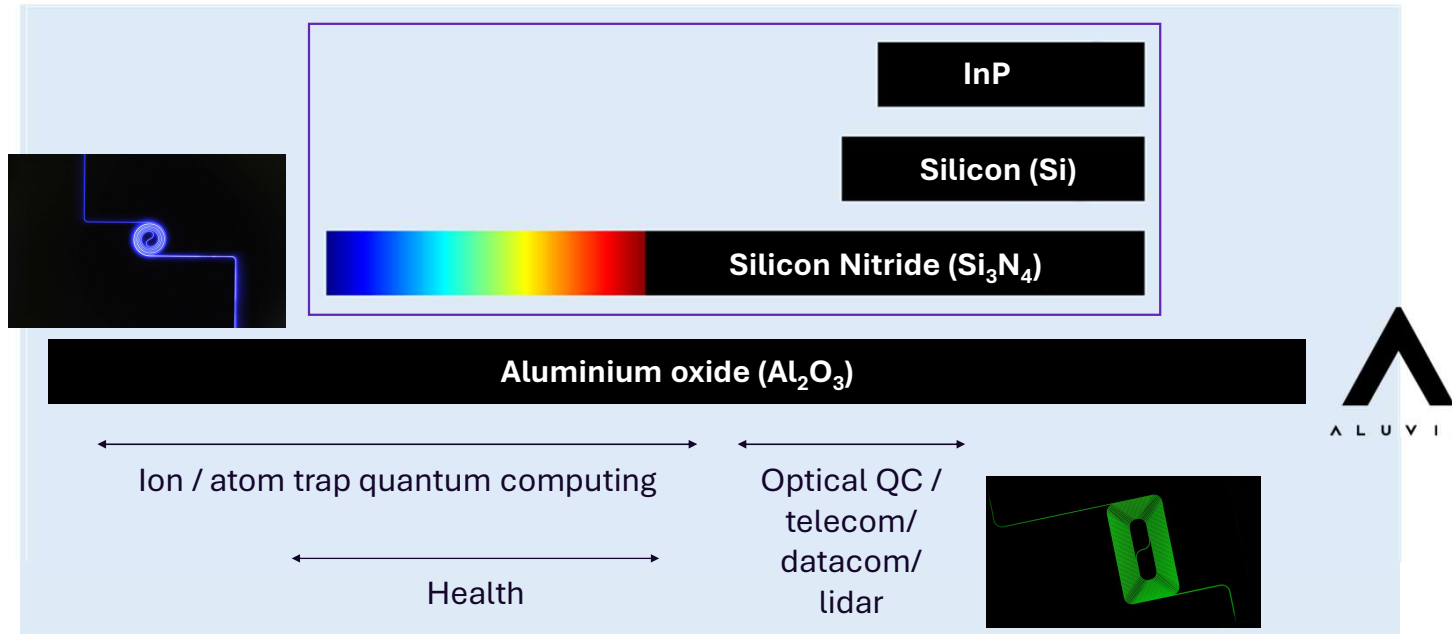
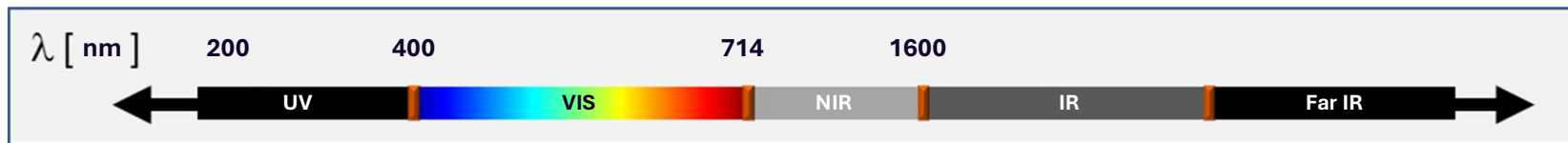
ALUVIA
PHOTONICS

THE Al_2O_3 PIC PLATFORM

BROAD OPERATING SPECTRAL WINDOW + ON-CHIP AMPLIFICATION

UV:

Lack of a commercial PC platform



World-leading low losses*:

- 1-5 dB/m @ 1550 nm
- ~1 dB/cm at 405 nm

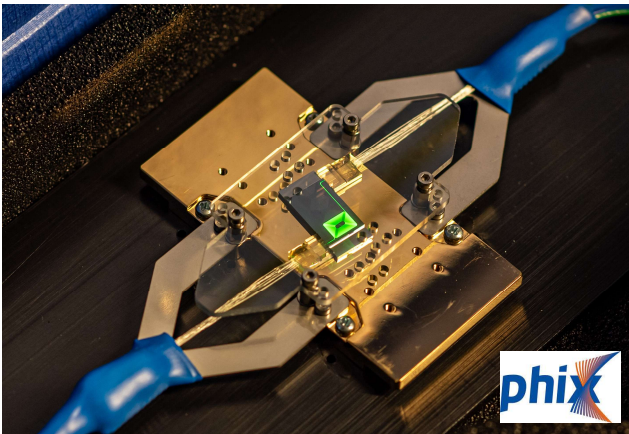
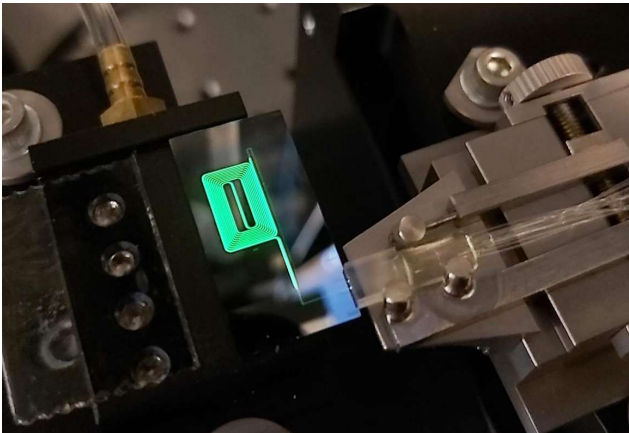
Integrated amplification

Over 20 dB fiber-to-fiber net gain and over 30 dB of internal net gain when doped with erbium

*Depending on cross-section

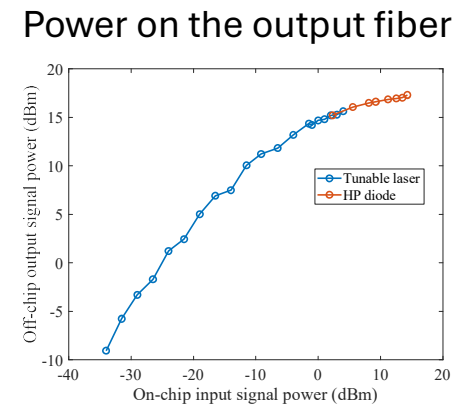
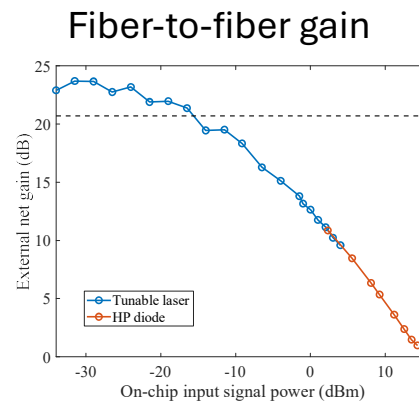
HIGH RARE-EARTH ION SOLUBILITY

ERBIUM DOPED Al_2O_3 AMPLIFIERS

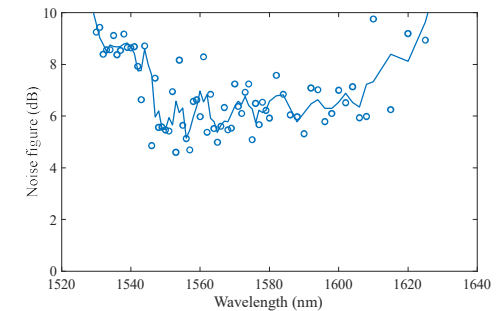


Example of performance:

- 50 cm long spiral
- 1.5×10^{20} ions/cm³ erbium concentration
- Cross-section waveguide: 770 nm x 1.75 μm

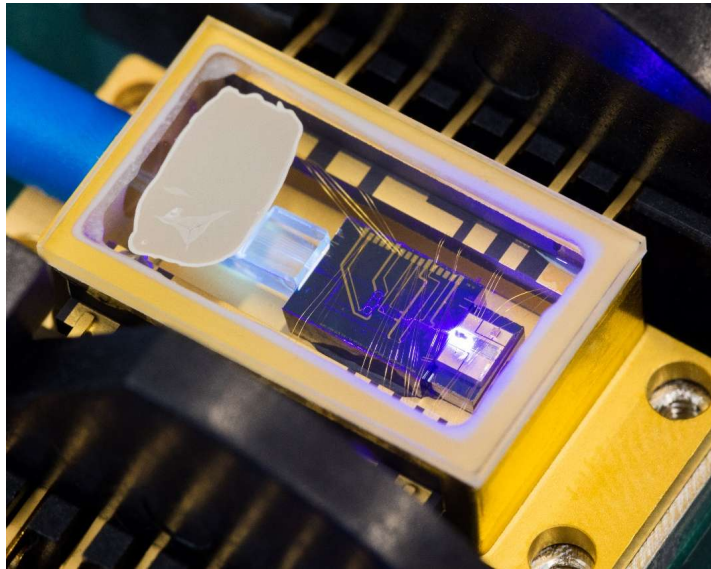


Fiber-to-fiber NF (internal noise figure ~2dB less)

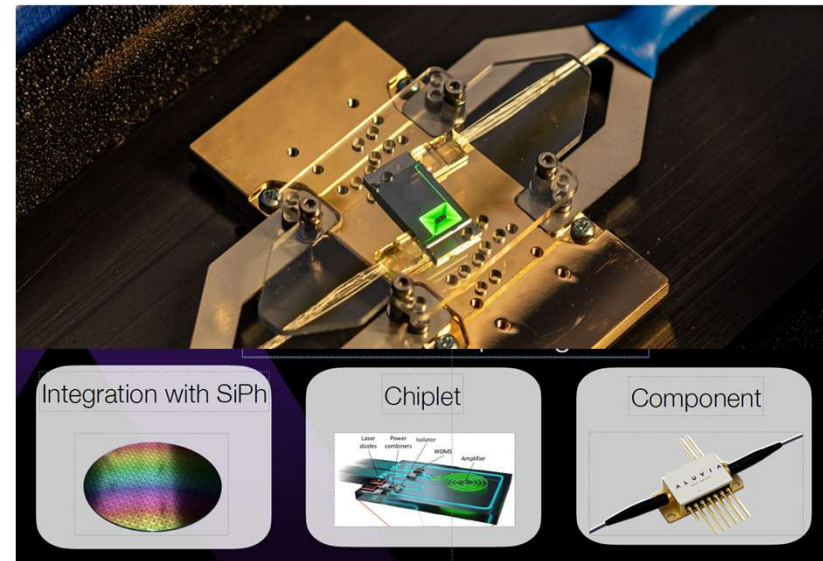


Demonstrators with ALUVIA's technology

Tunable laser at 405 nm



PIC-EDWA



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Thanks!

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