

## Subwavelength metamaterial for communications and sensing

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Silicon photonics is considered a breakthrough technology with strong impact in areas as diverse as data center interconnection, high performance computing, the deployment of 5G future communication systems or lab-on-a-chip sensors. The emergence of sub-wavelength grating waveguides (SWG) has been fundamental to achieve advanced devices with unprecedented performance in integrated optics. In this talk we will focus on our recent progress in designing sub-wavelength engineered devices like ultra-broadband mode (de)multiplexers and converters [1], ultra-narrowband Bragg filters [2], sensing waveguides with enhanced sensitivity [3], or suspended silicon mid-infrared waveguides capable of covering the full transparency window of silicon [4], among other.

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### References

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