

Electroluminescence from carbon nanotubes

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Electrically generated light emission from carbon nanotubes is of great interest for the development of nanoscale on-chip electro-optical transducers and single-photon sources [1,2], operating in the telecom band and at GHz frequency [3]. To further advance device performance, reproducibility and reliability we need to better understand and control the mechanism of light generation, tailor the interface between the nanotube and environment and to locally modify nanotube properties with nanoscale precision. In my presentation I will report on our current efforts in this direction and present latest results.

[1] S. Khasminskaya et al., *Nature Photonics* **10**, 727 (2016).

[2] F. Pyatkov et al., *Nature Photonics* **10**, 420 (2016).

[3] F. Pyatkov et al., *Beilstein J. Nanotechnol.* **8**, 38 (2017).

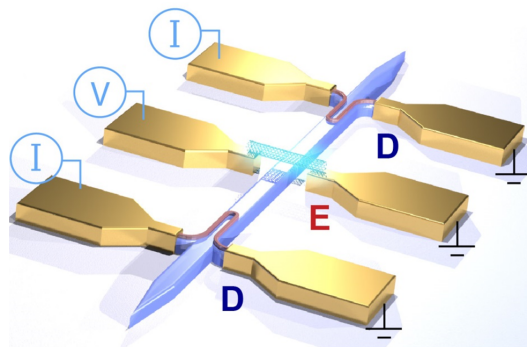


Fig.1 Quantum photonic circuit comprising of carbon nanotube emitter (E) and superconducting detectors (D).