

Quantum Technologies within INFN: status and perspectives



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Nanowires quantum detectors

In recent years semiconductor nanowires (NWs) for quantum technologies have been raising great interest, due to the development of quantum devices and detectors. Among them InAs and InAs-GaSb core shell NWs are of special interest as they are shown to be suitable as sensors, with applications in domains as detectors of radiation [1,2] and of chemical species [3], and can readily be fabricated within current nano-processing technologies. In last years our teams have been fabricating and studying, with experiments and theoretical analysis, the functioning and response of these detectors and sensors. I will present some results of our research [1-3].

1. V. Demontis et al, Sensors 19, 2994 (2019).
2. M. Rocci et al., Nano letters 16 (12), 7950 (2016).
3. F. Floris et al., Materials 12, 3572 (2019).

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