

## Tommaso Venanzi - Curriculum Vitae

---

Research Interests 2D semiconductors, ultrafast spectroscopy, infrared spectroscopy, nanospectroscopy, plasmonics

Main experimental techniques **Steady-state spectroscopy**

Raman, Photoluminescence, FTIR, SNOM, and AFM-IR

**Time-resolved spectroscopy**

Pump-probe and time-resolved photoluminescence (non-linear optics for light generation)

**Others**

Low-temperature measurements, fabrication of 2D materials and van der Waals heterostructures, regular user of the infrared free-electron laser FELBE (HZDR)

## Education

### University of Rome Sapienza, Rome, Italy

Master degree in physics, condensed matter

May 2016

Thesis title: *Near-field investigation of nanoantennas made of metallic Germanium* Final mark: 110/110

Supervisor: Michele Ortolani

### Helmholtz Zentrum Dresden Rossendorf and TU Dresden,

Dresden, Germany

PhD student in physics

Sept 2016 till Oct 2020

Thesis title: *Optical and infrared properties of atomically thin semiconductors*

Final mark: *Summa cum Laude*

Supervisors: Harald Schneider, Manfred Helm

### University of Rome Sapienza, Rome, Italy

Post doc position

Nov 2020 till now

Main goal: *Study of electron-phonon interaction in van der Waals heterostructures*

Group leaders: Leonetta Baldassarre, Michele Ortolani

## Publications

E. Calandrini, **T. Venanzi** *et al.*, "Mapping the electromagnetic field confinement in the gap of germanium nanoantennas with plasma wavelength of 4.5 micrometers" *Applied Physics Letters* 109, 121104 (2016).

E. Calandrini, **T. Venanzi** *et al.*, "Electromagnetic field confinement in the gap of germanium nanoantennas with plasma wavelength of 4.5 micrometers" *Proc. SPIE* 10111, Quantum Sensing and Nano Electronics and Photonics XIV, 101110F (2017).

1 of ??

**T. Venanzi** *et al.*, "Exciton localization in MoSe<sub>2</sub> monolayers induced by adsorbed gas molecules", *Applied Physics Letters* 114, 172106 (2019).

H. Arora, Y. Jung, **T. Venanzi** *et al.*, "Effective hexagonal boron nitride passivation of few-layered InSe and GaSe to enhance their electronic and optical properties", *ACS Appl. Mater. Interfaces* 11, 43408 (2019).

H. Arora, R. Dong, **T. Venanzi**, *et al.*, "Demonstration of a broadband photodetector based on a two-dimensional metal-organic framework", *Advanced Materials* 32(9), 1907063 (2020).

**T. Venanzi** *et al.*, "Photoluminescence dynamics in few-layer InSe", *Physical Review Materials* 4, 044001 (2020).

X. Wang, C. He, **T. Venanzi** *et al.*, "Observation of polariton lasing in a CsPbBr<sub>3</sub> nanowire cavity", *Submitted*, (2020).

**T. Venanzi** *et al.*, "Terahertz induced energy transfer from hot carriers to trions in MoSe<sub>2</sub> monolayer", *Submitted*, (2020).

L. Balaghi, S. Shan, I. Fotev, F. Moebus, R. Rakesh, **T. Venanzi**, R. Hu<sup>¨</sup>bner, T. Mikolajick, H. Schneider, M. Helm, A. Pashkin, and E. Dimakis, "High electron mobility in strained GaAs nanowires", *Submitted*, (2021).

Computer  
Skills

Good command of C, Matlab, Maple, Igor, Origin, QUANTUM ESPRESSO, Office,  
LateX and others

Language  
skills

Mother tongue

Italian

Others languages

English C1

German B2

Spanish B1

Rome, 28.04.2021

---

Tommaso Venanzi