



Giuseppe Ronco

WORK EXPERIENCE

01/11/2023 – 01/11/2024 ROME, Italy

RESEARCH FELLOW SAPIENZA - UNIVERSITY OF ROMA

I conducted research activity in quantum optics, semiconductor physics, and two-dimensional materials. I investigated the optical properties of nanostructures as a function of strain and magnetic fields. I took care of experiment design, setup assembly, data acquisition, data analysis, scientific manuscript writing and editing.

EDUCATION AND TRAINING

01/11/2020 – 23/09/2024 Rome, Italy

PHD IN MATERIAL SCIENCE Sapienza University of Rome

I carried out my research activity on low-dimensional excitons, such as GaAs quantum dots and monolayer Transition Metal Dichalcogenides. I investigated the effects of strain fields on their optical and electronic properties, both in the context of quantum optics and novel electronic areas, such as valleytronics.

Website <https://www.uniroma1.it/it/pagina-strutturale/home> | **Field of study** Physics | **Final grade** Cum Laude |

Level in EQF EQF level 8 | **National classification** 10 |

Thesis Strain-engineering low-dimensional excitons: a building block for nanotechnology

10/01/2018 – 20/07/2020 Rome, Italy

MASTER DEGREE IN PHYSICS Sapienza University of Rome

Final grade 110/110 cum laude | **Level in EQF** EQF level 7 |

Thesis Polarization resolved optical spectroscopy of strained monolayer WS₂

01/10/2014 – 10/01/2018 Rome, Italy

BACHELOR DEGREE IN PHYSICS Sapienza University of Rome

Final grade 107/110 | **Level in EQF** EQF level 6 | **Thesis** Distribuzione spaziale di probabilità per microrganismi fotocinetici

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B1	B1	B1	B1	B2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Programming

Mathematica Wolfram | Matlab | C

Data Analysis

Microsoft Excel | Microsoft Office | Origin

Graphics

Microsoft Powerpoint | Inkscape | Blender

Writing

Microsoft Word | Latex

● PUBLICATIONS

2022

[**A source of entangled photons based on a cavity-enhanced and strain-tuned GaAs quantum dot**](#)

Michele B Rota, Tobias M Krieger, Quirin Buchinger, Mattia Beccaceci, Julia Neuwirth, Hêlio Huet, Nikola Horová, Gabriele Lovicu, Giuseppe Ronco, Saimon F Covre da Silva, Giorgio Pettinari, Magdalena Moczała-Dusanowska, Christoph Kohlberger, Santanu Manna, Sandra Stroj, Julia Freund, Xueyong Yuan, Christian Schneider, Miroslav Ježek, Sven Höfling, Francesco Basso Basset, Tobias Huber-Loyola, Armando Rastelli, Rinaldo Trotta

arXiv preprint, arXiv:2212.12506

2023

[**Daylight entanglement-based quantum key distribution with a quantum dot source**](#)

Francesco Basso Basset, Mauro Valeri, Julia Neuwirth, Emanuele Polino, Michele B Rota, Davide Poderini, Claudio Pardo, Giovanni Rodari, Emanuele Roccia, SF Covre da Silva, Giuseppe Ronco, Nicolò Spagnolo, Armando Rastelli, Gonzalo Carvacho, Fabio Sciarrino, Rinaldo Trotta

Quantum Science and Technology, 8 025002

2023

[**Signatures of the Optical Stark Effect on Entangled Photon Pairs from Resonantly-Pumped Quantum Dots**](#)

Francesco Basso Basset, Michele B Rota, Mattia Beccaceci, Tobias M Krieger, Quirin Buchinger, Julia Neuwirth, Hêlio Huet, Sandra Stroj, Saimon F Covre da Silva, Giuseppe Ronco, Christian Schimpf, Sven Höfling, Tobias Huber-Loyola, Armando Rastelli, Rinaldo Trotta

Physical Review Letters, 131, 166901

2023

[**Strain-induced dynamic control over the population of quantum emitters in two-dimensional materials**](#)

Giuseppe Ronco, Abel Martínez-Suárez, Davide Tedeschi, Matteo Savaresi, Aurelio Hierro-Rodríguez, Stephen McVitie, Sandra Stroj, Johannes Aberl, Moritz Brehm, Victor M García-Suárez, Michele B Rota, Pablo Alonso-González, Javier Martín-Sánchez, Rinaldo Trotta

arXiv preprint, arXiv:2301.10273

2023

[**Polarized and Un-Polarized Emission from a Single Emitter in a Bullseye Resonator**](#)

Giora Peniakov, Quirin Buchinger, Mohamed Helal, Simon Betzold, Yorick Reum, Michele B Rota, Giuseppe Ronco, Mattia Beccaceci, Tobias M Krieger, Saimon F Covre Da Silva, Armando Rastelli, Rinaldo Trotta, Andreas Pfenning, Sven Hoefling, Tobias Huber-Loyola

arXiv preprint, arXiv:2308.06231

● CONFERENCES AND SEMINARS

11/07/2022 – 15/07/2022 Donostia-San Sebastian, Spain

Novel Electronic Properties of Two-Dimensional Materials (NEP2DM)

Presented poster on strain-tuning the optical properties of quantum emitters in monolayer WSe2

15/12/2022 – 16/12/2022 Stuttgart, Germany

Engineering of Quantum Emitter Properties (EQEP)

Presented poster on strain-tuning the optical properties of quantum emitters in monolayer WSe₂

04/09/2023 – 08/09/2023 Milan, Italy

General conference of the condensed matter division of the EPS (CMD30)

Presented talk on exciton redistribution in strained monolayer WSe₂

17/09/2023 – 20/09/2023 Freueninsel, Germany

International Conference on Nonlinear Optics and Excitation Kinetics in Semiconductors (NOEKS16)

Presented talk on exciton redistribution in strained monolayer WSe₂

● **PROJECTS**

01/12/2022 – 30/11/2023

A novel device for valleytronics in strained monolayer Transition Metal Dichalcogenides

Progetti per Avvio alla Ricerca - Tipo 1
Fundings approved

● **MANAGEMENT AND LEADERSHIP SKILLS**

Co-supervisor of Bachelor theses

Candidate : Pierpaolo Bassetti
Title : Proprietà ottiche di materiali bidimensionali a gap diretta
Thesis defended : 15/12/2021

Candidate : Fabrizio Cienzo
Title : Eccitoni in campo magnetico
Thesis defended : 09/2022

Co-supervisor of Master theses

Candidate: Federico Trezzini
Title: Temperature-resolved optical spectroscopy on strained WS₂ and WSe₂ monolayers
Thesis defended: 18/01/2023

PhD Seminars Organization Committee

Member of the PhD seminars organization committee at the Sapienza University of Rome

● **DISSEMINATION**

13/07/2023

Sapienza Porte Aperte - 2023

Guide for the nanophotonics lab tour during Porte Aperte Sapienza 2023

13/05/2023

Notte bianca dei ricercatori - 2023

Guide for the Nanophotonics lab tour during the "Notte bianca dei ricercatori", edition 2023

12/04/2023 – 21/04/2023

Dire l'indicibile - Italian Quantum Weeks

Guide for the exhibition: "Dire l'indicibile", edition 2023 of the Italian Quantum Weeks

01/04/2022 – 12/04/2022

Dire l'indicibile - Italian Quantum Weeks

Guide for the exhibition : "Dire l'indicibile", edition 2022 of the Italian Quantum Weeks

● **TECHNICAL SKILLS**

Micro-photoluminescence techniques

Fabrication of two-dimensional materials via Dry-Transfer techniques

Mechanical deformation of two-dimensional materials

Raman spectroscopy

Polarization-resolved optical spectroscopy

Auto-correlation measurements

Quantum key distribution

Atomic Force Microscopy (AFM)

Training under the supervision of Prof. Ernesto Placidi (Sapienza - University of Rome) in 2022