

PERSONAL INFORMATION

Nicolas Hanine

CURRENT POSITION

SSD (if applicable)

RESEARCH TOPICS / EXPERIENCES

SCIENTIFIC / TECHNICAL QUALIFICATION

(source: Scopus)

PhD in Information and Communication Technology (ICT)

Optoelectronics, Integrated photonic circuits, MOEMS, Telecommunication

- H-index: 2
- No. publications: 8
- No. citations: 13

EDUCATION AND TRAINING

From 11/2023 to ongoing

PhD in Information and Communication Technology (ICT)
Sapienza University of Rome

From 09/2020 to 10/2023

Master's degree in Nanotechnology Engineering
Sapienza University of Rome

From 09/2015 to 03/2020

Bachelor's degree in mechanical engineering
University of Brescia

WORK EXPERIENCE

11/2024

Tutoring of the 'Electronic systems for mechatronics' course
Tutoring for laboratory exercises in the 'Electronic systems for mechatronics' course of the Master of Mechanical Engineering degree in Sapienza University of Rome.

11/2023

Tutoring of the 'Electronic systems for mechatronics' course
Tutoring for laboratory exercises in the 'Electronic systems for mechatronics' course of the Master of Mechanical Engineering degree in Sapienza University of Rome.

05/2023

Tutoring of the 'Applied Electronics' course
Tutoring for laboratory exercises in the 'Applied Electronics' course of the Bachelor of Mechanical Engineering degree in Sapienza University of Rome.

05/2025

Tutoring of the 'Applied Electronics' course
Tutoring for laboratory exercises in the 'Applied Electronics' course of the Bachelor of Mechanical Engineering degree in Sapienza University of Rome.

06/2025

Tutoring of the Micro Electromechanical Systems course
Tutoring for laboratory work in the 'Micro Electromechanical Systems' course of the Master of Electronic Engineering degree in Sapienza University of Rome.

MAIN RESEARCH EXPERIENCE

From 11/2024 to ongoing	OTELLO (Development of high-performance, low-power photonic microsystems based on metamaterials and liquid crystals for optical communication applications). Projects for Research Start-up - Type 1 – Sapienza University of Rome, 2024 Principal Investigator
From 11/2024 to ongoing	WATER COOKIE: cookie-shaped integrated multiparametric water analyzer. Progetti di Ricerca Grandi - Progetti Grandi – Sapienza University of Rome, 2024 Component
From 11/2023 to ongoing	RIGOLETTO (Engineering photonic devices and systems towards a green optical network infrastructure for 6G) Funded by the European Union under the Italian National Recovery and Resilience Plan (NRRP) of NextGenerationEU, partnership on “Telecommunications of the Future” (PE00000001 - program “RESTART”). Component

ADDITIONAL INFORMATION

Publications

- Mannelta, A. Buzzin, N. Hanine, B. Alam, V. Ferrara, and R. Asquini, “Coupling efficiency enhancement between SU-8 waveguides and plasmonic nanostructures through indium tin oxide thin films,” 2023 Int. Conf. Numer. Simul. Optoelectron. Devices, pp. 5–6, 2023.
- R. Asquini, A. Buzzin, N. Hanine, A. Mannelta, B. Alam and V. Ferrara, "Enhancing the Scattering Induced by Gold Periodic Arrays Over Optical Waveguides Through Indium Tin Oxide Buffer Layers," in IEEE Photonics Journal, vol. 16, no. 2, pp. 1-6, 2024, Art no. 0600606.
- N. Hanine, A. Mannelta, A. Buzzin, V. Ferrara and R. Asquini, "Development of a Through-Glass Programmable Optical Interferometer made of Liquid Crystal Tilted Gratings," 2024 47th MIPRO ICT and Electronics Convention (MIPRO), Opatija, Croatia, pp. 1706-1711, 2024.
- Mannelta, N. Hanine, A. Buzzin, V. Ferrara and R. Asquini, "Enhanced Scattering Induced Fluorescence through Gold Nanoarrays and Zinc Oxide Thin Films," 2024 47th MIPRO ICT and Electronics Convention (MIPRO), Opatija, Croatia, pp. 1712-1715, 2024.
- N. Hanine, A. Mannelta, A. Buzzin, V. Ferrara, and R. Asquini, "Through-Glass Programmable Coupler made of Liquid Crystal Tilted Gratings for Optical Interferometry", XXII Conferenza Nazionale Sensori e Microsistemi (AISEM 2024), Bologna, Italy, 2024.
- Mannelta, N. Hanine, A. Buzzin, V. Ferrara, and R. Asquini, "Study of Indium Tin Oxide Thin Film as Fluorescence Enhancers for Optical Biosensing in Water Quality Analysis", XXII Conferenza Nazionale Sensori e Microsistemi (AISEM 2024), Bologna, Italy, 2024.

- A. Buzzin, N. Hanine, A. Mannetta, A. Alaeddini, V. Ferrara, and R. Asquini, "Programmable optical interferometer based on tunable tilted liquid crystal gratings", Italian Conference on Optics and Photonics – ICOP 2024, Firenze, 17-19 Giugno 2024
- Buzzin, A., Hanine, N., Alaeddini, A., Giannini, L., Baiocchi, M., Focardi, A., Ferrara, V. and Asquini, R., 2025. Hybrid waveguide photonic devices and functional materials for sensing and telecommunication applications. In *Book of Abstracts NOMA2025-17th Mediterranean Workshop and Topical Meeting "Novel Optical Materials and Applications"*.
- A. Buzzin, A. Alaeddini, N. Hanine, R. Asquini, "Practical and Inexpensive Evanescent-Wave Sensing Platform for Methylene Blue Detection in Water." 2025 10th International Workshop on Advances in Sensors and Interfaces (IWASI). (pp. 1-5). IEEE.
- A. Focardi, N. Hanine, A. Alaeddini, V. Ferrara, R. Asquini, "Enhanced Optical Scattering in Glass Waveguides for Lab-on-Chip optimized Detection Using ITO Thin Films and Periodic Nanoarrays". 2025 10th International Workshop on Advances in Sensors and Interfaces (IWASI) (pp. 1-6). IEEE.
- Hanine, N., Buzzin, A., Giannini, L., Alaeddini, A. and Asquini, R., 2025. Tunable MOEMS Microring Resonator Based on In-Plane Bending Through Rotary Comb Drives. In *CLEO®/Europe-EQEC-2025: Conference Digest, Munich ICM, International Congress Centre Munich, Germany, 23-27 June 2025: www.cleoeurope.org*. IEEE Conference Publications Management Group.
- N. Hanine, A. Buzzin, L. Giannini, A. Alaeddini, N. P. Belfiore, R. Asquini, "A Tunable MOEMS Open Microring Resonator for the Detection of Water Concentration in Ethanol Solutions". 2025 International Conference on Numerical Simulation of Optoelectronic Devices (NUSOD), Łódź, Poland, 2025.

Conferences and seminars

- Participation in the seminar: "Building the interface between the universe of molecules and data with optical sensors", 24 June 2024, Rome
- Participation in the Advanced School of Liquid Crystals, December 2023 to 12 May 2024
- Seminar participation: Scientific Communication Skills, 17 November 2023, Rome
- Poster presentation at the workshop: RESTART Plenary dissemination workshop "Light Coupling Performance Analysis Between SU-8 Channel Waveguides and Gold Nanostructures", 30-31 January 2024, Bologna
- Poster presentation at the conference: XXII Conferenza Nazionale Sensori e Microsistemi (AISEM 2024). "Through-glass programmable optical interferometer made of liquid crystal tilted gratings", 7-9 February 2024, Bologna

- Oral presentation at the conference: 47th ICT and Electronics convention MIPRO 2024, Opatjia, Croatia, 2024. "Development of a Through-Glass Programmable Optical Interferometer made of Liquid Crystal Tilted Gratings",
20-24 May 2024
- Participation in the summer school: International summer school on Nanosciences & Nanotechnologies (NANOSUM 2024),
16-21 June 2024, Blaubeuren (Germany)
- Conference staff member: The 10th International Conference on Antennas and Electromagnetic Systems (AES 2024),
25-28 June 2024, Rome
- Participation in the conference Nanoinnovation,
9-13 September 2024, Rome
- Participation in the seminar: "IEEE Authorship and Open Access Symposium",
24 October 2024
- Participation in the advanced course: "5th Edition Silicon Photonics Design Course"
07-11 April 2025
- Poster presentation at the conference: "CLEO®/Europe-EQEC-2025"
21-25 June 2025
- Oral presentation at the conference: "Numerical Simulation of Optoelectronic Devices (NUSOD)",
14 – 18 September 2025

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