

FORMATO EUROPEO PER IL
CURRICULUM VITAE



PERSONAL INFORMATION

Name

FRANCESCO FERRARA

Date of birth

Nationality

Address

Email

WORK EXPERIENCE

2022 – present

Name and address of employer

Consiglio Nazionale delle Ricerche

Occupation or position held

Permanent researcher at the Institute of Nanotechnology of Italian National Research Council

Type of business or sector

Nanotechnology, biotechnology, microelectronics and microfabrication.

2004 – 2022

Name and address of employer

STMicroelectronics - Italy

Occupation or position held

Application Engineer with functions of research project drafting and fundraising, technical research and development and research project management.

Type of business or sector

Worldwide High technological Company in the field of microelectronics and biotech.

Selected Research Projects and Fund Raising

2023 – present

Position held

Principal Investigator

Project Name

MSP4Water

Main partners

CNR NANOTEC, Università del Salento, MSPackaging.

Funder:

Ministero delle Imprese e del Made in Italy – Accordi per l'innovazione

Main activities

Study, fabrication e prototyping of new carbon-based nanocomposites for water purification

2021 – present

Position held

Head of devices division, Work-package leader, Research Project Drafter

Project Name

TITAN: Tumor ImmunoTherApy by Nanotechnology

Main partners

CNR NANOTEC, STMicroelectronics, Ospedale San Raffaele.

Funder:

Ministero dell'Istruzione dell'Università e della Ricerca – PON Ricerca&Competitività

Main activities

Implementation and control of the process of CAR-T production and amplification, to improve efficiency of current procedures.

Technical Research and Development

Within the Institute of Nanotechnology of National Research Council of Italy:

2022-present

Group Name

Main activities and responsibilities

Liquid Biopsy

- Head of device fabrication division;
- Project and realization of new fluidic system for liquid biopsy;
- Study of biocompatible materials for exosomes fabrication;
- Micro/nanofluidic channels cleanroom fabrication;

Research Project Management

On behalf the Institute of Nanotechnology of National Research Council of Italy:

2022-present

Group Name

Main activities and responsibilities

Micro/Nano Fabrication Group

- **Head** of Micro/Nano Fabrication Group
- **Coordinator** of medical devices system group for liquid biopsy, personalized medicine and immunotherapy applications;
- **Coordinator** of the multidisciplinary team (biologists, physicists, engineers, chemists) focused on the use of nanotechnologies in the field of medicine, health, environmental protection.
- **Responsible** of the **Joint Lab** with Università del Salento (Lecce, Italy), Ospedale San Raffaele (Milano, Italy), Politecnico di Milano (Milano, Italy), STMicroelectronics (Milano, Italy).

On behalf of the Advanced System Technology Unit of STMicroelectronics:

2015-2022

Group Name

Main activities and responsibilities

Research & Innovation

- **Coordinator** of new generation system for DNA sequencing project planning with internal (i.e., ST Business Unit) and external (e.g., CNR, Universities) partners;
- **Coordinator** of the multidisciplinary team committed with the development of DNA sequencing system (biologists, physics, engineers);
- **Responsible for the** selection of national and international research funding programs and research projects planning, design and submission at the STMicroelectronics Lecce;
- **Responsible** of the **Joint Lab** with CNR, Università del Salento (Lecce, Italy) and Ospedale San Raffaele (Milano, Italy).

EDUCATION AND TRAINING

2013

Name of Organization

Title of qualification awarded

University del Salento – Dipartimento di Matematica e Fisica, Lecce - Italy

Doctor of Philosophy (PhD) in Bio-molecular Nanotechnology. (XXV ciclo)
Thesis title: Novel functional building blocks for DNA lab on chips

2010

Name of Organization

Title of qualification awarded

Ministero dell'Istruzione, dell'Università e della Ricerca
Qualified engineer after Professional Practice Exam (Abilitazione all'esercizio della professione di Ingegnere)

2004-2018

Name of Organization

Title of qualification awarded

STMicronics,Italy

Courses & Training for career development in several areas, in particular: Project Management, Team Management, Marketing for non-marketers, Personal Effectiveness, Personal Development, Job Effectiveness, Team Effectiveness.

Courses & Training for research/development tools skills, in particular: 1) SolidWorks, 2) JMP (Design of Experiment software), 3) MATLAB, LabView, 4) COMSOL Multiphysics

Selected publications and patents

1. A Smart Procedure for the Femtosecond Laser-Based Fabrication of a Polymeric Lab-on-a-Chip for Capturing Tumor Cell, *Engineering*, 2021, DOI: 10.1016/j.eng.2020.10.012. Authors: Volpe A., Krishnan U., Chiriaco M.S., Primiceri E., Ancona A., Ferrara F.
2. Beyond liquid biopsy: Toward non-invasive assays for distanced cancer diagnostics in pandemics. *Biosens Bioelectron.* 2022; 196:113698. DOI: 10.1016/j.bios.2021.113698. Authors: Ferrara F., Zoupanou S., Primiceri E., Ali Z., Chiriaco M.S.
3. Cartridge For Sample Preparation And Molecule Analysis, Cartridge Control Machine, Sample Preparation System And Method Using The Cartridge. Inventors: F. FERRARA et al (Publication number: US20220161259A1, 2022)
4. Magnetically Controllable Valve And Portable Microfluidic Device Having A Magnetically Controllable Valve, In Particular Cartridge For Sample Preparation And Molecule Analysis. Inventors: Davide CUCCHI, Lorenzo BRUNO, F. FERRARA (Publication number: US20190201894A1, 2019)
5. Membrane microfluidic valve and process for manufacturing a membrane microfluidic valve. Inventors: Marco Pugliese, F. Ferrara (Patent number: US10197189, 2019)
6. Apparatus and method for nucleic acid sequencing based on nanowire detectors. Inventors: Marco Angelo Bianchessi, F. Ferrara (Patent number: US10190161, 2019)
7. Apparatus and method for nucleic acid sequencing based on nanochannels. Inventors: F. Ferrara, Marco Angelo Bianchessi (Patent number: EP2927329, 2019)
8. Apparatus And Method For Nucleic Acid Sequencing Based On Nanowire Detectors. Inventors: Marco Angelo Bianchessi, F. Ferrara (Publication number: US20150284792, 2015)
9. Apparatus And Method For Nucleic Acid Sequencing Based On Nanochannels. Inventors: F. Ferrara, Marco Angelo Bianchessi (Publication number: US20150284707, 2015), Patent Award 2020.
10. Technology Translation: - Led development of real-time DNA analysis system deployed during COVID-19 pandemic (with Alifax, Italy) - Pioneered microarray DNA detection platform (with Veredus Laboratories, Singapore) - Developed novel insulin pump system (with Debiotech SA, Switzerland)

Lecce, li 13/05/2025

Autorizzo il trattamento dei miei dati personali presenti nel curriculum vitae ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 e del GDPR (Regolamento UE 2016/679)

Il dichiarante