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INFORMAZIONI PERSONALI **Federico Rondelli**

EDUCATIONAL QUALIFICATION Ph. D in Translational Neurosciences and Neurotecnologies

EDUCATION AND TRAINING

Ferrara
Now 2021-Nov 2024

PhD in Translational Neurosciences and Neurotechnologies (University of Ferrara – UNIFE / Italian institute of technologies - IIT)
Evaluation: Ph. D *cum laude*

Thesis: "Transient phenomena in Organic Neuroelectronics: Fundamentals and applications".

This transformative PhD experience significantly enhanced my expertise in independent research, critical analysis, and the development of advanced problem-solving skills. My research focused on the development and validation of organic neuromorphic and neuroelectronic devices, successfully translating a bench-top neuromorphic architecture into an in vivo model for dynamic neurotransmitter sensing. I designed and implemented organic circuits for on-board signal processing and pattern discrimination, utilizing both active components (e.g., electrolyte-gated organic transistors, EGOTs) and passive elements to exploit the neuromorphic properties of organic materials.

This work deepened my understanding of the physical chemistry of organic materials and electronic devices, while also expanding my knowledge of brain physiology and animal model handling (rats) for electrophysiological recording and biosensing applications.

Modena
Oct 2019-July 2021

Master degree in Industrial Biotechnology
(University of Modena and ReggioEmilia - UNIMORE)
Evaluation:110L/110 with congrats (Encomio)

Thesis: "Electrolyte-Gated Organic Field Effect Transistor (EGOFET) for label-free detection and discrimination of Sars Cov-2 Wuhan and UK variants".

This multidisciplinary education provided a strong foundation in both biotechnology and materials science, with practical and research-oriented experience in key areas relevant to R&D:

- Development of organic electronic and electrochemical devices for biosensing and real-time monitoring of biological and environmental signals.

- Analytical chemistry techniques, including the isolation and structural characterization of small molecules through chromatographic methods and HPLC.

- Industrial and microbial biotechnology, focusing on enzyme and metabolite

production via fermentation processes using stirred-tank and pneumatically agitated bioreactors.

- Genetic engineering of microorganisms for the biosynthesis of value-added biopolymers (e.g., cellulose, PHA) and sustainable compounds for applications in green plastics and food technology.

- Thermo-mechanical analysis and processing of polymeric and composite materials, with attention to performance optimization.

- Implementation of quality control and assurance protocols in biotech and biomedical product development.

- Business and project management fundamentals, including cost assessment and strategic planning through tools like the Business Model Canvas.

Modena
Oct 2016- Oct 2019

Bachelor degree in Biotechnology
(University of Modena and ReggioEmilia - UNIMORE)
Evaluation: 107/110

Thesis: "Ruolo del gene MEF2C in cellule di Rabdomiosarcoma: studio di colture bi- e tri-dimensionali"

My Bachelor's degree provided a comprehensive foundation in the biomedical and food sciences, with a strong interdisciplinary focus across chemistry, molecular biology, and cellular biology. Particular emphasis was placed on hands-on experience with both 2D and 3D cell culture techniques, as well as key biological and molecular protocols, including:

- Immunofluorescence and immunohistochemistry

- Western blotting

- Real-time PCR

- Eukaryotic cell transfection

- Bacterial cell transformation and conjugation

This academic training strengthened both my theoretical understanding and practical proficiency in laboratory methodologies relevant to biomedical research and biotechnological applications.

Modena
Sep 2010-July 2016

Technical High School Diploma in Industrial Chemistry (Perito Chimico)
Istituto tecnico industriale statale (ITIS) Enrico Fermi
Evaluation: 82/100

My technical high school education, with a specialization in Chemistry, Materials, and Biotechnology, provided a strong foundation in both theoretical and applied chemical sciences. The curriculum covered key areas including:

- **Analytical Chemistry**: Hands-on experience with titrations (acid-base, argentometric, permanganometric, colorimetric, iodometric) and gravimetric analysis.

- **Instrumental Analysis**: Training in advanced techniques such as atomic absorption spectroscopy, HPLC, IR and UV-VIS spectroscopy, NMR, and gas chromatography.

- **Applied Sample Analysis**: Preparation and analysis of diverse samples across food (e.g., oil, vinegar, meat, fruits, vegetables), metallurgical (Fe, Cu, Al alloys), and ceramic (feldspar, kaolin) industries.

- **Organic Chemistry**: Synthesis and bench-top characterization of compounds, including essential oils and pigments.

- **Industrial Chemistry**: Basic design of chemical plants following UNICHIM standards, along with chemical process management.

- **Fermentation Chemistry**: Cultivation and metabolic profiling of bacterial strains.

This program culminated in a state exam qualifying me for the professional title of *Chemical Technician (Perito Chimico)*.

PERSONAL SKILLS

Native Language   Italian

Others Language

COMPRENSION		SPEAKING		WRITING
Listening	Reading	Interaction	Oral production	
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user
		B2		

English — row above

Communicative skills

I developed strong communication and synthesis skills through numerous presentations and oral exams during my Master's degree in Industrial Biotechnology. These abilities were further refined during my PhD experience, where I gained confidence presenting complex research in front of international audiences through contributed talks at scientific conferences.

Organizaton and Management skills

My Master's degree included coursework and projects designed to foster teamwork, both as a leader and as a contributing member. I have developed a highly adaptable and flexible approach, allowing me to effectively assume different roles based on the needs of the team.

During my PhD, I collaborated with international researchers and colleagues in a diverse, multidisciplinary research center. This experience significantly enhanced my ability to work effectively in cross-cultural teams, adapt to varying work styles, and communicate complex concepts in a collaborative environment. Exposure to global perspectives and cutting-edge research further strengthened my teamwork skills, enabling me to contribute meaningfully to both independent and group projects in an international setting.

Digital skills	AUTOEVALUATION				
	Info evalutation	Communication	Content creations	Security	Problem Solving
	High	High	high	Basic	Intermediate

- Proficient in text editors (Microsoft Word, LaTeX) and spreadsheet software (Microsoft Excel, Origin, RStudio)
- Experienced in presentation software (PowerPoint, Canva)
- Intermediate knowledge of image editing tools (Photoshop, ImageJ)
Proficient in MATLAB and Python for data analysis

Driver's Licens   B (Italian)

ATTACHMENTS

Personal Data   Il sottoscritto autorizza il trattamento dei propri dati personali ai sensi del GDPR 679/16 "Regolamento europeo sulla protezione dei dati personali".

Il sottoscritto acconsente alla pubblicazione del presente curriculum vitae sul sito dell'Università degli Studi di Ferrara