



# Filippo Bonafè

**Date of birth:** 14/10/1996 | **Nationality:** Italian | **Gender:** Male | **Phone number:** (+39) 3333683350 (Mobile) |

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**Address:** Via Provinciale 7, 40063, Monghidoro, Italy (Home) |

**Address:** Viale Carlo Berti Pichat 6/2, 40127, Bologna, Italy (Work)

## ● ABOUT ME

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PhD Candidate in Nanoscience for Medicine and the Environment

## ● EDUCATION AND TRAINING

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01/11/2020 – CURRENT Bologna, Italy

**PHD STUDENT IN NANOSCIENCE FOR MEDICINE AND THE ENVIRONMENT** University of Bologna

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**Field of study** Material Physics, Bioelectronics |

**Thesis** Organic Mixed-Ionic Electronic Conductors for Bioelectronics Interfaces

01/03/2022 – 01/08/2022 CB3 OFF, United Kingdom

**VISITING PHD STUDENT AT THE BIOELECTRONICS LABORATORY** University of Cambridge

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Development of polymer-based soft robots for bioelectronics interfaces

01/10/2018 – 01/10/2020 Bologna, Italy

**MASTER DEGREE IN MATERIAL PHYSICS AND NANOSCIENCE** University of Bologna

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**Field of study** Physics | **Final grade** 110 Cum Laude |

**Thesis** Charge Accumulation and Transport in Degenerately Doped Conductive Polymers with Mixed Ionic-Electronic Conductivity

10/09/2015 – 19/10/2018 Bologna, Italy

**BACHELOR DEGREE IN PHYSICS** University of Bologna

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**Final grade** 110 Cum Laude

## ● WORK EXPERIENCE

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01/07/2019 – 30/09/2019 Monghidoro, Italy

**CENTRO CONTABILE APPENNINO S.A.S. DI VACIRCA CLAUDIO & C**

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Seasonal work as office clerk

01/01/2020 – CURRENT Bologna

**PRIVATE TUTORING TEACHER**

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-Teaching support in Scientific Subjects for high school and bachelor university students

10/10/2023 – CURRENT Bologna, Italy

**DIDACTIC LABORATORY TUTOR** UNIVERSITY OF BOLOGNA

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-Didactic Laboratory tutor for the course of Laboratory of Condensed Matter Physics in the Master Program in Material Physics and Nanoscience at the University of Bologna

## ● LANGUAGE SKILLS

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Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
<b>ENGLISH</b>	C1	C2	C1	C1	C1
<b>FRENCH</b>	A1	A2	A1	A1	A1

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

## ● DIGITAL SKILLS

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Microsoft Office (Outlook, Excel, Word, PowerPoint) | Matlab/Simulink | C,C,C++ | data processing and analysis software: Origin (advanced)

## ● ADDITIONAL INFORMATION

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### CONFERENCES AND SEMINARS

31/05/2021 – 03/06/2021 – online conference

**E-MRS Spring Meeting 2021** European conference on Material Research. Participation with a poster presentation

06/12/2021 – 08/12/2021 – Online conference

**MRS Spring Meeting 2021** Global conference on Material Research. Participation with a poster presentation

26/05/2021 – 28/05/2021 – Online conference

**Technologies for neuroengineering** Conference on technologies for neuroengineering organized by the Nature Journal

13/09/2021 – 17/09/2021 – Bologna

**Congress of the Italian Physics Society** National Congress of the Italian Physics Society. Participation with an oral contribution

15/06/2023 – 16/06/2023 – Cambridge, UK

**Cambridge Bioelectronics Symposium** Congress on Bioelectronics Research. Participation with an oral contribution

16/10/2023 – 20/10/2023 – Torremolinos, ES

**MATSUS Fall 2023 Conference** Congress on Sustainable Materials for Bioelectronics. Participation with two oral contributions

10/04/2023 – 14/04/2023 – San Francisco, US

**MRS Spring Meeting 2023** Global conference on Material Research. Participation with an oral presentation

19/09/2022 – 21/09/2022 – Bologna

**XXII International Conference on Mechanics in Medicine and Biology** Congress on Materials for Bioelectronics. Participation with an oral contribution

03/07/2022 – 09/07/2022 – Erice, IT

**2022 Orbitaly Congress** Congress on Materials for Bioelectronics. Participation with an oral contribution

### PUBLICATIONS

[AC amplification gain in organic electrochemical transistors for impedance-based single cell sensors](#)  
– 2022

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Bonafè, F., Decataldo, F., Zironi, I. et al.; Nature Communications 13, 5423 (2022).

## [Charge Carrier Mobility in Organic Mixed Ionic-Electronic Conductors by the Electrolyte-Gated van der Pauw Method](#)

– 2021

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Bonafè, F., Decataldo, F., Fraboni, B. et al.; Advanced Electronic Materials ; Wiley (2021)

## [Oxygen Gas Sensing Using a Hydrogel-Based Organic Electrochemical Transistor for Work Safety Applications](#)

– 2022

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Decataldo, F.; Bonafè, F.; Mariani, et al. ; Polymers ; MDPI (2022)

## [Flexible microelectrode array based on PEDOT:PSS for neural recording and stimulation](#) – 2022

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Filippo Bonafè ; Il Nuovo Cimento (2022)

## **High endurance long term potentiation in neuromorphic organic electrochemical transistors by PEDOT:PSS electrochemical polymerization on the gate electrode**

– 2023

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Mariani, F.; Decataldo, F.; Bonafè, F. et al., in press at ACS applied materials & interfaces

## **Ionic Solvent Shell Drives Electroactuation in Organic Mixed Ionic-Electronic Conductors** – 2023

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Bonafè, F., Decataldo, F., Cramer, T. et al., under revision at Advanced Science

## **Electrochemically actuated microelectrodes for minimally invasive peripheral nerve interfaces** – 2023

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Dong, C., Carnicer-Lombarte, A., Bonafè, F. et al., under revision at Nature Materials

## **HONOURS AND AWARDS**

09/07/2022

**Best Oral Presentation award – 2022 Orbitaly Congress**

16/06/2023

**Best Oral Presentation award – Cambridge Bioelectronics Symposium**

20/10/2023

**Best Oral Presentation award – MATSUS Fall 2023 Conference**

## **COMMUNICATION AND INTERPERSONAL SKILLS**

**Good public speaking skills obtained through presenting at scientific conferences** Write here the description...

**Efficient collaboration in group working activities obtained through collaborations in scientific research**

**Good writing skills gained through my experience in scientific writing in international, peer-reviewed journals**

**Good public speaking skills obtained through presenting in political campaigns**

## **DRIVING LICENCE**

**Driving Licence:** AM

**Driving Licence:** A1

**Driving Licence:** B

## **SOCIAL AND POLITICAL ACTIVITIES**

05/10/2021 – CURRENT Monghidoro

**Municipal Councilor for Environmental Policies**

## **VOLUNTEERING**

01/01/2010 – CURRENT Monghidoro

**Volunteering activity for "Associazione di Volontariato Oltr'Alpe"** Volunteering activities for the protection and enhancement of local environment

01/03/2020 – CURRENT Loiano - Monghidoro

**Volunteering activity for "Associazione di Volontariato Nuova Vita"** Volunteering activity for a charity association

## **HOBBIES AND INTERESTS**

**Amateur Tennis Player**

**Amateur Guitar Player**