BIOGRAPHICAL SKETCH

NAME: Annalisa BONFIGLIO

POSITION TITLE: Full Professor of Electronic Bioengineering

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
University of Genoa Politechnical School of Milan (Politecnico di Milano)	Laurea PhD	07/1991 09/1996	Physics Bioengineering

A. Personal Statement

(Here you can insert a short description of your professional status and achievements. Max 10 lines)

B. Positions and Honors

Positions and Employment

(Complete the following table. Begin with older positions. Add/delete rows as necessary.)

1996-2004	*Assistant Professor (Ricercatrice) of Electronics at the University of Cagliari*
2004 – 2011	*Associate Professor of Electronics at the University of Cagliari*
2012-2015	*Associate Professor of Electronic Bioengineering at the University of Cagliari*
2016-2023	*Full Professor of Electronic Bioengineering at the University of Cagliari*
2014-2017	*Member of the Board of Directors at CRS4 (Centro Ricerche, Sviluppo, Studi Superiori in Sardegna)*
2015-2017	*Vice Rector for Innovation and Territorial Strategies at the University of Cagliari*
2017-2020	*President of the Board of Directors at CRS4 (Centro Ricerche, Sviluppo, Studi Superiori in Sardegna)*
2022-today	*Coordinator of the PhD Course "The Hadron Academy: risk and complexity of high tech medical innovation*
2024-today	*Full Professor of Electronic Bioengineering at Scuola Universitaria Superiore IUSS – Pavia*
2025-today	*Coordinator of the PhD Course (Dottorato di Interesse Nazionale) "Science and Technology of Advanced Therapies"*

Honors

(Complete the following table, Add/delete rows if necessary.)

2016	Premio ITWIIN 2016 dell' **Associazione Italiana Donne Inventrici e Innovatrici**
2017	Premio TecnoVisionaria dall'Associazione Donne&Tecnologia
2020	Inclusion in the list of Top Italian Scientists
2020	Inclusion in the list "100esperte"

Patents

Application date	*Application Number*
28.02.2003	EP1606833A2; ITTO20030145A1; US2006263953A1; US2009057660A1; US7445954B2; WO2004077500A2; WO2004077500A3
09.06.2005	EP1759193A1; ITTO20040386A1; US2007247170A1; US7535232B2; WO2005121765A1
06.05.2010	US2011272674A1; US8461573B2
03.08.2011	EP2740167A1; EP2740167B1; ES2717633T3; WO2013017170A1
06.03.2012	CN103503078A; CN103503078B; EP2684195A1; EP2684195B1; KR20140040119A; US2014093731A1; WO2012120006A1
31.07.2013	WO2015014950A1
04.02.2015	EP3254096A1; EP3254096B1; ITMI20150145A1; US10739304B2; US2018031520A1; WO2016124714A1
06.06.2016	EP3463054A1; EP3463054B1; ES2797101T3; ITUA20164123A1; WO2017212377A1

21.06.2017	IT201700069353A1
07.12.2018	CA3121715A1; EP3911191A1; EP3911191B1; IT201800010886A1; US12357234B2; US2022022815A1; WO2020115708A1
14.10.2019	EP4044900A1; WO2021074664A1
29.04.2019	CA3138429A1; EP3963006A1; IT201900006437A1; US12226215B2; US2022202333A1; WO2020222130A1

Reviewer Experience

Nature, Nature Materials, Nature Communications, Applied Physics Letters, Journal of Applied Physics, Advanced Materials, Advanced Functional Materials, Organic Electronics, Electronics Letters, IEEE Transaction on Electron Devices, Microelectronics Reliability, Material Science and Engineering, Research Journal on Textile Apparel, Thin Solid Films, IEEE Electron Device Letters (Associated Editor)

Member of Evaluation Panels for Research Projects for the European Commission:
V FP, subprogramme: Quality of Life and Management of living resources
VI FP, subprogramme: IST (Information Science and Technology); NMP (Nanotechnologies and nanosciences, knowledge-based multifunctional materials and new production processes and devices), NEST (New and Emerging Science and Technology).
VII FP, subprograms: IST (Information Science and Technology); NEST (New and Emerging Science and Technology).
H2020, Call IoT-01-2016: Large Scale Pilots, FETPROACTive Boosting emerging technologies
Marie Curie Programme
European Research Council, Starting grant and Consolidator Grants
Referee for several National Research Agencies, among them the Binational Science Foundation United States-Israel, Israel Science Foundation, ANR (Agence Nationale de la Recherche, France), The Research Council of Norway.

C. Contributions to Science

- Organic Bioelectronics and Biosensors (DNA/RNA sensors, biomarker sensors, cell electrical and metabolic sensors, ionizing radiation sensors)
- Wearable Electronics, E-textiles, Novel Man-Machine interfaces
- Silicon based Biosensors (in particular, DNA chips)
- Multiquantum well optoelectronic devices (up to 2000)
- Scanning Microscopies (up to 2000)
- Failure analysis and reliability of electronic devices (up to 2000)

1. D. Hatami, R. Hasler, A. Spanu, J. Dostalek, C. Kleber, W. Knoll, **A. Bonfiglio**, A hybrid OTFT-SPR system for simultaneous electronic and optical sensing. Sci Rep 15, 15244 (2025). https://doi.org/10.1038/s41598-025-99656-8
2. **A. Bonfiglio**, "The future of wearable bioelectronics in healthcare", Nature Reviews on Electronic Engineering, in press, 2025 https://doi.org/10.1038/s44287-025-00175-5

3. Spanu, Andrea; Taki, Mohammad; Baldazzi, Giulia; Mascia, Antonello; Pietrabissa, Riccardo; Pani, Danilo; Cosseddu, Piero; **Bonfiglio, Annalisa**, "Spray-Coated, Magnetically Connectable Free-Standing Epidermal Electrodes for High Quality Biopotential Recordings", ADVANCED ENGINEERING MATERIALS, 26(9), 2024, https://doi.org/10.1002/adem.202302195
4. G. Casula, S. Lai, E. Loi, L, Moi, P. Zavattari, **A. Bonfiglio**, "An innovative PCR-free approach for DNA methylation measure: An application for early colorectal cancer detection by means of an organic biosensor", Sensors and Actuators B: Chemical, Volume 3981 January 2024 Article number 134698, DOI 10.1016/j.snb.2023.134698
5. Spanu, A., Martines, L., Tedesco, M., Martinoia, S., Bonfiglio, A., "Simultaneous recording of electrical and metabolic activity of cardiac cells in vitro using an organic charge modulated field effect transistor array", Frontiers in Bioengineering and Biotechnology, doi: 10.3389/fbioe.2022.945575, 2022
6. S. Lai, Y. Vlamidis, N. Mishra, P. Cosseddu, V. Mišeikis, P. C. Ricci, V. Voliani, C. Coletti, A. Bonfiglio"A flexible, transparent chemosensor integrating an inkjet-printed organic field-effect transistor and a non-covalently functionalized graphene electrode", Advanced Materials Technologies, 2021
7. Spanu A., Martines L., Bonfiglio A.,"Interfacing cells with organic transistors: a review of in vitro and in vivo applications", 2021, Lab on a Chip,4 DOI https://doi.org/10.1039/D0LC01007C
8. F.Torricelli, D. Z. Adrahtas, Z. Bao, M. Berggren, F. Biscarini, **A. Bonfiglio**, C. A. Bortolotti, C. D. Frisbie, E. Macchia, G. G. Malliaras , I. McCulloch, M. Moser, T.- Q. Nguyen, R. M. Owens, A. Salleo, A. Spanu and L. Torsi, "Electrolyte- gated transistors for enhanced performance bioelectronics", Nature Reviews|Methods Primers ID (2021) 1:66, doi: s43586-021-00065-8
9. Spanu A., Tedesco M.T., Martines L., Martinoia S., **Bonfiglio A.,** "An organic neurophysiological tool for neuronal metabolic activity monitoring",2018,"*APL Bioengineering*",3
10. Pani D., Usai I., Cosseddu P., Melis M., Sollai G., Crnjar R., Tomassini Barbarossa I., Raffo L., **Bonfiglio A.**,"An automated system for the objective evaluation of human gustatory sensitivity using tongue biopotential recordings",2017, *PLoS ONE*, 8

D. Past and Ongoing Research Support

(Complete the following table with the list of your projects, Add/delete rows if necessary.)

2023- 2027	"COMETA – Hybrid Hub (H2UB): Modelli cellulari e COMputazionali, micro e nanotEcnologie per la personalizzazione di Terapie innovative"	Italian Ministry of Health	Unit coordinator
2024-2025	"STOPme - Supporting Termination Of stereotyPies in patients with RETT syndrome by advanced ambient intelligence"	MIUR-PNRR	Unit coordinator
2024-2025	MISCELL	MIUR-PNRR	Project Coordinator
2020-2023	Search and Rescue:	European Commission	Unit Coordinator

	Emerging technologies for the Early location of Entrapped victims under Collapsed Structures and Advanced Wearables for risk assessment and First Responders Safety in SAR operations	– H2020	
2019-2022	TEX-Style: Nuovi tessuti intelligenti e sostenibili multi-settoriali per design creativo e stile made-in-Italy	MIUR – PON	Unit Coordinator, WP leader
2018-2021	BIOMED	POR FESR	Unit Coordinator
2013-2016	I-FLEXIS	European Commission – ICT STRP	Unit Coordinator, WP leader
2013-2015	BioFET – Development of novel technologies for organic field effect biosensors	Regione Sardegna LR7	Coordinator
2011 – 2014	Hymec	European Commission – NMP STRP Project	Unit Coordinator, WP leader
2009-2011	Roboskin	European Commission – IST STRP Project	Unit Coordinator, WP leader
2010-2011	MIND: Ingegnerizzazione di Modelli d'organo di interesse fisiologico e patologico per l'INdagine di Disturbi legati all'invecchiamento	MIUR -PRIN	Unit Coordinator
2008 - 2010	Systex	European Commission – IST Coordinated Action	Unit Coordinator
2007	A Smart Carpet for Monitoring Safety of Older Adults with Alzheimer's Disease	American Alzheimer Association	Unit Coordinator
2006	Sensori ionici a effetto di campo su film flessibili	MIUR-PRIN	Unit Coordinator
2006-2010	Pro-E-Tex- Protection e-Textiles: MicroNanoStructured fibre systems for Emergency-Disaster Wear	European Commission Integrated Project	Project Coordinator
2003	ARIANNE - Feasibility study of yarns and	European Commission STRP Project	Project Coordinator

	fabrics with annexed electronic functions		
2003	BEST - Biomolecular recognition by integrated smart sensors technology	European Commission STRP Project	Member of the coordinating unit
2002-2005	Development of technologies for the implementation of electronic components and devices on textile substrates	MIUR-FIRB	Unit Coordinator
2002	Limina: Laboratorio Integrato di Microscopie e Nanoscopie	MIUR PON	Coordinating Committee Member
2000-2001	Technologies and devices based on nitrides for space applications	Italian Spatial Agency (ASI)	Unit Coordinator

- ASI Project (2000-2001) (Role in the project: Cagliari Research Unit Coordinator , Total funding: ~400 kE).

E. Experience as a research supervisor

6 postdocs
19 PhD students
>100 undergraduates