

CURRICULUM VITAE

Date of birth: 26/04/1987

Nationality: Italian

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Education

Mar 2015 Ph.D. Chemical Sciences - Co-supervised Franco-Italian Doctorate
Institut de Sciences et d'Ingénierie Supramoléculaires, University of Strasbourg, France.
Department of Chemistry, University of Parma, Italy.

Oct 2011 M.Sc. Chemistry (110/110 *cum laude*)
Department of Chemistry, University of Parma, Italy.

Sep 2009 B.Sc. Chemistry (110/110 *cum laude*)
Department of Chemistry, University of Parma, Italy

Appointments

Since Sep 2023 Associate Professor
Department of Chemistry, Life Sciences and Environmental Sustainability
University of Parma, Italy

Sep 2020 – Aug 2023 Tenure-Track Assistant Professor - “Chiamata Diretta”
Department of Chemistry, Life Sciences and Environmental Sustainability
University of Parma, Italy

Feb 2020 – Aug 2020 Fondazione Umberto Veronesi Research Fellow
Department of Chemistry, University of Rome Tor Vergata, Rome, Italy

Jan 2017 – Jan 2020 Marie Skłodowska-Curie Global Research Fellow
Department of Chemistry and Biochemistry, University of California San Diego, CA, USA.
Department of Chemistry, University of Rome Tor Vergata, Rome, Italy

May 2016 – Nov 2016 Endeavour Research Fellow
Department of Chemical and Biomolecular Engineering, The University of Melbourne,
Victoria, Australia.

May 2015 – May 2016 Postdoctoral Researcher
Department of Chemistry, University of Rome Tor Vergata, Rome, Italy.

Visiting academic positions

Sep 2015 - Jan 2016 Visiting Postdoc at Sanford Burnham Prebys Medical Discovery Institute, La Jolla, CA, USA
Jan 2015 - Mar 2015 Visiting PhD Student at Polytechnic University of Milan, Milan, Italy

Awards and Honors

2022 Habilitation as Associate Professor in Analytical Chemistry, Italian Ministry of Universities and Research
2021 International Galileo Galilei Prize for Young Scholars, Galileo Galilei and Rotary Club Foundation.
2021 Honorable Mention and Silver Medal, Primo Levi Award, Italian Chemical Society.
2020 Fondazione Umberto Veronesi Research Fellowship, Umberto Veronesi Cancer Foundation.
2018 Finalist of the 2018 ISSNAF Award for Young Investigators – Environmental Sciences, Astrophysics,
and Chemistry - Winner in Chemistry - Italian Scientists and Scholars in North America Foundation.
2017 Marie Skłodowska-Curie Global Research Fellowship, European Commission.
2017 Habilitation II Grade as Maître de conférences in Theoretical, Physical, Analytical Chemistry, French Ministry of
Education and Research.

2016 Endeavour Research Fellowship, Australian Government, Department of Education and Training.
 2015 Best PhD Thesis in Science in France, Naturalia and Biologia Association, Paris, France.
 2014 Travel Scholarship, the Marian Gertner Institute for Medical Nanosystems, Tel-Aviv University, Israel.
 2013 PhD Scholarship “Scientific cooperation between France and Italy”, French Embassy in Italy

Teaching

Since 2020 Bioanalytical Methods – MSc in Genomic, Molecular and Industrial Biotechnologies,
 Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Italy
 2021 - 2025 Laboratory of Instrumental Analytical Chemistry – BSc in Chemistry
 Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Italy
 Since 2023 Analytical Chemistry for Materials Science - BSc in Materials Sciences and Technologies
 Department of Chemistry, Life Sciences and Environmental Sustainability, University of Parma, Italy

Reviewer activity

Journals – *Nat. Nanotechnol.* (including contributing to *Research Briefing/Expert Opinion pieces*); *JACS*; *Angew. Chem., Small*; *Anal. Chem.*, *Adv. Funct. Mater.*, *ACS Sensors*, *Chem. Sci.*, *Chem. Mater.*, *Sci. Rep.*, *Bioactive Mater.*, *Mater. Today Commun.*, *Lab Chip*, *Biosens. Bioelectron.*; *Biomacromolecules*, *ACS Appl. Mater. Interfaces*.

Grants – *Leverhulme Trust, UK*.

Institutional responsibilities

Since 2025 - Representative for the Joint Student-Teacher Committee for the MSc in Genomic, Molecular and Industrial Biotechnologies
 Since 2022 - Member of the Doctoral Study Committee in Materials Science and Technology, University of Parma.
 2021-2024 – Member of the Reevaluation Group for the MSc Degree in Genomic, Molecular and Industrial Biotechnologies, University of Parma.

Research Grants

Year	Budget Euro	Funding Body / Grant ID	Role
2025	N.a.	ASPIRE FOR RISING SCIENTISTS ASPIRE – JST Japan Science and Technology Agency Project: “International Research Network on Intracellular Supramolecular Chemistry”. End date: 2028	Partner
2024	498,833.00	My First AIRC Grant AIRC – Italian Association for Cancer Research Project: “CRISPR-Cas-Powered Detection Technologies for Protein Biomarkers in Bodily Fluids -CRISPOWER”. End date: 2030	PI
2024	316,351.00	NRRP Cascade Call “THE – Tuscany Health Ecosystem” – Spoke 4 “Nanotechnologies for diagnosis and therapy” Italian Ministry for University and Research Project: “Biomarker-responsive DNA-based organosilica nanoparticles for theranostics - BioSilicaThera”. End date: 2025	PI
2024	15,200.00	FIL Giovani – Quota Incentivante (Seed Grant for Young Researchers)	

		University of Parma	Partner
		Project: "Resurrecting ancestral actin-resistant DNase for cystic fibrosis lung disease therapy". End date: 2026	
2024	1,007,400.00	MSCA Staff Exchange HORIZON-MSCA-2023-SE-01-01 European Commission	Coordinator
		Project: "Programmable Bionanomaterials with Protein-Controlled Behavior – Program-Material". End date: 2028	
2023	210,000.00	PRIN 2022 Italian Ministry for University and Research	PI
		Project: "CRISPR-Cas-based sensing platforms for the monitoring of clinically relevant antibodies". End date: 2025	
2023	10,800.00	FIL Giovani – Quota Incentivante (Seed Grant for Young Researchers) University of Parma and CARIPARMA Foundation.	PI
		Project: "Theranostic nucleic acid-based nanodevices artificially regulated by proteolytic enzymes". End date: 2024	
2022	30,000.00	Young Investigator Mini-Grant Guido Berlucchi Foundation	PI
		Project: "DNA-based molecular sensors for the analysis of oncogenic zinc fingers – DNA-Fingers". End date: 2024	
2022	25,000.00	Excellent Science Horizon Europe Italian Ministry of University.	PI
		Project: "Hybrid healthcare materials actively controlled by biology". End date: 2023	
2021	15,000.00	FIL Giovani – Quota Incentivante (Seed Grant for Young Researchers) University of Parma and CARIPARMA Foundation.	PI
		Project: "Programmable chem-bio chimera translators as dynamic, functional probes for molecular sensing of informative protein markers". End date: 2022	
2017	250,000.00	Marie Skłodowska-Curie Global Research Fellowship. European Commission	PI
		Project: "Multifunctional miRNA-targeting nanodevices for pluripotent cancer theranostics - MIRNANO". End date: 2020	

Invited / Keynote / Plenary Lectures

Dec 2025	Pacificchem 2025, Honolulu, HI, USA – Invited Talk
Nov 2025	Avogadro Colloquia 2025, Rome, Italy – Invited Lecture
Jun 2025	DNA 2025, the 12 th conference on DNA Nanotechnology, Chengdu, China – Invited Talk
Oct 2023	Nanobalkan2023, Tirana, Albania - Invited Talk
Nov 2022	XIV National Congress INBB "National Institute for Biosystems and Biostructures" - Invited Lecture
Oct 2021	Supramolecular Chemistry Days for Young Researchers, Bologna, Italy - Plenary Lecture
Sep 2021	XXVII Congress of the Italian Chemical Society - Primo Levi Prize Award Lecture
Feb 2020	Winter School in Advanced Technologies for Characterization and Sensing of Nanobiomaterials University of Rome Tor Vergata, Rome, Italy - Invited Lecture
Oct 2018	ISSNAF Award for Young Investigators, Italian Embassy in the United States, Washington DC, USA - Award lecture

Invited Seminars

Oct 2025	Department of Chemistry, Biochemistry and Pharmaceutical Sciences, University of Bern, Switzerland
Sep 2025	"Ospedale Maggiore" Hospital, Parma, Italy

Sep 2024 Kyung Hee University, College of Medicine, Seoul, Republic of Korea
Sep 2024 Shanghai Jiao Tong University (SJTU), Shanghai, China

Invited Webinars

Oct 2025 Italian Chemical Society – Interdivisional Group on Sensors

Oral presentations at international conferences and workshops

Jul 2024 8th European Chemistry Congress EUChemS, Dublin, Ireland
Oct 2022 AMYC-BIOMED 2022, Naples, Italy
Oct 2020 Functional DNA Nanotechnology workshop, Rome, Italy
Mar 2019 VI International Conference on Multifunctional, Hybrid and Nanomaterials, Sitges, Spain
Aug 2018 7th European Chemistry Congress EUChemS, Liverpool, UK
Jun 2018 Biosensors 2018, Miami, FL, USA
Mar 2017 V International Conference on Multifunctional, Hybrid and Nanomaterials, Lisbon, Portugal
and numerous oral presentations at national meetings (e.g., National Congress of the Italian Chemical Society).

Publication Record and bibliometric indicators

36 papers in ISI peer-reviewed journals + 2 Book chapters in international editions + 1 International Patent
h-index: 19 (Google Scholar, Oct 2025)
> 1800 total citations (Google Scholar, Oct 2025)

Publications



*Corresponding Author

36. L. Capelli, S. Marzari, E. Spezzani, **A. Bertucci***, Synthetic CRISPR Networks Driven by Transcription Factors via Structure-Switching DNA Translators, **J. Am. Chem. Soc.** 2025, 147, 24, 21184–21193.

35. I. Van Zundert, E. Spezzani, R. R. Brillas, L. Paffen, A. Yurchenko, T. FA de Greef, L. Albertazzi, **A. Bertucci**, T. Patiño Padial, Real-Time Monitoring of DNA Origami-Cell Interactions via Single Particle Tracking. **Small** 2025, 21, 40, 2502496.

34. D. Di Lena, E. Sisti, E. Brass, E. Belforte, B. Marini, A. Porchetta, L. Squarcia, E. Da Pozzo, **A. Bertucci***, R. Ippodrino*. Rapid, Single-Step Monitoring of Monoclonal Antibody Bioavailability by Using a TNF- α -Based Multiepitope DNA Nanoswitch. **Anal. Chem.** 2025, 97, 15, 8195–8201.

33. A. Tonelli, A. Tortone, A. Grazioli, F. Pasquali, M. Sozzi, A. Candiani, L. Capelli, **A. Bertucci***. A Portable and Low-Cost Single Board Computer-Based Spectrophotometric Platform for Optical Analysis in the UV and Visible Range. **Adv. Sens. Res.** 2025, 4, 4, 2400163.
32. L. Capelli, F. Pedrini, A. C. Di Pede, N. Bagheri, S. Fortunati, M. Giannetto, M. Mattarozzi, R. Corradini, A. Porchetta, **A. Bertucci***. Synthetic Protein-to-DNA Input Exchange for Protease Activity Detection Using CRISPR-Cas12a. **Anal. Chem.** 2024, 96, 47, 18645-18654.
31. S. Fortunati, M. Giannetto, F. Pedrini, P. Nikolaou, G. Donofrio, **A. Bertucci***, M. Careri. A novel magnetic ligand-based assay for the electrochemical determination of BRD4. **Talanta** 2024, 279, 126577.
30. S. Fortunati, M. Giannetto, C. Giliberti, M. Mattarozzi, **A. Bertucci**, M. Careri. Magnetic Beads as Versatile Tools for Electrochemical Biosensing Platforms in Point-of-Care Testing. **Anal. Sens.** 2024, 4, e202300062.
29. P. Picchetti, S. Volpi, M. Sancho-Albero, M. Rossetti, M.D. Dore, T. Trinh, F. Biedermann, M. Neri, **A. Bertucci**, A. Porchetta, R. Corradini, H. Sleiman, L. De Cola. Supramolecular Nucleic Acid-Based Organosilica Nanoparticles Responsive to Physical and Biological Inputs. **J. Am. Chem. Soc.** 2023, 145, 22903-22912.
28. P. Picchetti, S. Volpi, M. Rossetti, M.D. Dore, T. Trinh, F. Biedermann, M. Neri, **A. Bertucci**, A. Porchetta, R. Corradini, H. Sleiman, L. De Cola. Responsive Nucleic Acid-Based Organosilica Nanoparticles. **J. Am. Chem. Soc.** 2023, 145, 22896-22902.
Featured in the Front Cover of JACS
27. S. Fortunati, C. Giliberti, M. Giannetto, **A. Bertucci**, S. Capodaglio, E. Ricciardi, P. Giacomini, V. Bianchi, A. Boni, I. De Munari, R. Corradini, M. Careri. A highly sensitive electrochemical magneto-genosensing assay for the specific detection of a single nucleotide variation in the KRAS oncogene in human plasma. **Biosens. Bioelectron.: X** 2023, 15, 100404.
26. M. Mattarozzi, E. Laski, **A. Bertucci**, M. Giannetto, F. Bianchi, C. Zoani, M. Careri. Metrological traceability in process analytical technologies and point-of-need technologies for food safety and quality control: not a straightforward issue. **Anal. Bioanal. Chem.** 2023, 415, 119-135.
25. S. Fortunati, F. Pedrini, E. Del Grosso, L. Baranda Pellejero, **A. Bertucci***. Design of Specific Nucleic Acid-Based Biosensors for Protein Binding Activity. **Anal. Sens.** 2022, 2, e202200037.
24. F. Curti, S. Fortunati, W. Knoll, M. Giannetto, R. Corradini, **A. Bertucci***, M. Careri. A Folding-Based Electrochemical Aptasensor for the Single-Step Detection of the SARS-CoV-2 Spike Protein. **ACS Appl. Mater. Interfaces.** 2022, 14, 19204-19211.
23. S. Fortunati, I. Vasini, M. Giannetto, M. Mattarozzi, A. Porchetta, **A. Bertucci***, M. Careri. Controlling Dynamic DNA Reactions at the Surface of Single-Walled Carbon Nanotube Electrodes to Design Hybridization Platforms with a Specific Amperometric Readout. **Anal. Chem.** 2022, 94, 5075-5083.
Featured in the Supplementary Cover of Analytical Chemistry
22. M. Mattarozzi, L. Toma, **A. Bertucci**, M. Giannetto, M. Careri. Aptamer-based assays: strategies in the use of aptamers conjugated to magnetic micro-and nanobeads as recognition elements in food control. **Anal. Bioanal. Chem.** 2022, 14, 63-74.

21. M. Neri, J. Kang, J.M. Zuidema, J. Gasparello, A. Finotti, R. Gambari, M.J. Sailor, **A. Bertucci**,* R. Corradini. Tuning the Loading and Release Properties of MicroRNA-Silencing Porous Silicon Nanoparticles by Using Chemically Diverse Peptide Nucleic Acid Payloads. **ACS Biomater. Sci. Eng.** 2022, 8, 4123-4131.
20. **A. Bertucci**,* A. Porchetta, E. Del Grosso, T. Patiño, A. Idili, F. Ricci.* Protein-Controlled Actuation of Dynamic Nucleic Acid Networks by Using Synthetic DNA Translators. **Angew. Chem. Int. Ed.** 2020, 59, 20577-20581.
Featured as "VIP Paper" in Angew. Chem. Int. Ed.
19. M. Rossetti,† **A. Bertucci**,† T. Patiño, L. Baranda Pellejero, A. Porchetta. Programming DNA-based systems through effective molarity enforced by biomolecular confinement **Chem. Eur. J.** 2020, 26, 9826-9834.
Featured in the Frontispiece of Chem. Eur. J.
18. A. Glab, **A. Bertucci**, F. Martino, M. Wojnilowicz, A. Amodio, M. Venanzi, F. Ricci, G. Forte, F. Caruso, F. Cavalieri. Dissecting the intracellular signalling and fate of a DNA nanosensor by super resolution and quantitative microscopy. **Nanoscale** 2020, 12, 15402-15143.
17. J.M. Zuidema, C.M. Dumont, J. Wang, W.M. Batchelor, Y. Lu, J. Kang, **A. Bertucci**, N.M. Ziebarth, L.D. Shea, M.J. Sailor. Porous Silicon Nanoparticles Embedded in Poly(lactic-co-glycolic acid) Nanofiber Scaffolds Deliver Neurotrophic Payloads to Enhance Neuronal Growth. **Adv. Funct. Mater.** 2020, 30, 2002560.
16. J. M. Zuidema,† **A. Bertucci**,† J. Kang, M. J. Sailor, F. Ricci. Hybrid polymer/porous silicon nanofibers for loading and sustained release of synthetic DNA-based responsive devices. **Nanoscale** 2020, 12, 2333-2339.
Included in the themed collection: 2020 Nanoscale HOT Article Collection
15. E. Piantanida, G. Alonci, **A. Bertucci**, L. De Cola. Design of Nanocomposite Injectable Hydrogels for Minimally Invasive Surgery. **Acc. Chem. Res.** 2019, 52, 2101-2112.
14. M. Rossetti, E. Del Grosso, S. Ranallo, D. Mariottini, A. Idili, **A. Bertucci**,* A. Porchetta.* Programmable RNA-based systems for sensing and diagnostic applications. **Anal. Bioanal. Chem.** 2019, 411, 4293-4302.
13. **A. Bertucci**, K-H. Kim, J. Kang, J.M. Zuidema, S. H. Lee, E.J. Kwon, D. Kim, S.B. Howell, F. Ricci, E. Ruoslahti, H-J. Jang, M.J. Sailor. Tumor-targeting, microRNA-silencing porous silicon nanoparticles for ovarian cancer therapy. **ACS Appl. Mater. Interfaces** 2019, 11, 23926-23937.
12. M. Wojnilowicz, A. Glab, **A. Bertucci**, F. Caruso, F. Cavalieri. Super-resolution imaging of proton sponge-triggered rupture of endosomes and cytosolic release of small interfering RNA. **ACS Nano** 2019, 13, 187-202
11. **A. Bertucci**, J. Guo, N. Oppmann, A. Glab, F. Ricci, F. Caruso, F. Cavalieri. Probing transcription factor binding activity and downstream gene silencing in living cells with a DNA nanoswitch. **Nanoscale** 2018, 10, 2034-2044
10. **A. Bertucci**, A. Porchetta, F. Ricci. Antibody-templated assembly of an RNA mimic of Green Fluorescent Protein. **Anal. Chem.** 2018, 90, 1049-1053.
Featured in the Front Cover of Analytical Chemistry
9. E. J. Kwon, M. Skalak, **A. Bertucci**, G. Braun, F. Ricci, E. Ruoslahti, M.J. Sailor, S.N. Bhatia. Porous silicon nanoparticle delivery of tandem peptide anti-infectives for the treatment of Pseudomonas aeruginosa lung infections. **Adv. Mater.** 2017, 29, 1701527.
Featured in the Frontispiece of Advanced Materials.
Featured in MIT News, EurekAlert, PhysOrg, Science Daily, and other news outlets.
Featured in Science Translational Medicine as Editor's Choice – "Resistance is Futile", STM 9, 2017.

8. A. Manicardi,† **A. Bertucci**,† A. Rozzi, R. Corradini. A bifunctional monomer for on-resin synthesis of polyfunctional PNAs and tailored induced-fit switching probes. **Org. Lett.** 2016, 18, 5452-5455.
7. R. Castagna, **A. Bertucci**, E. A. Prasetyanto, M. Monticelli, D. V. Conca, M. Massetti, P. P. Sharma, F. Damin, M. Chiari, L. De Cola, R. Bertacco. Reactive microcontact printing of DNA probes on (DMA-NAS-MAP) co-polymer-coated substrates for efficient hybridization platforms. **Langmuir** 2016, 32, 3308-3313.
6. E. A. Prasetyanto, **A. Bertucci**, D. Septiadi, R. Corradini, P. Castro-Hartmann, L. De Cola. Breakable Hybrid Organosilica Nanocapsules for Protein Delivery. **Angew. Chem. Int. Ed.** 2016, 55, 3323-3327.
Highlighted as "Hot Paper" and featured in the Inside Cover of Angew. Chem. Int. Ed.
5. **A. Bertucci**, E.A. Prasetyanto, D. Septiadi, A. Manicardi, E. Brognara, R. Gambari, R. Corradini, L. De Cola. Combined delivery of temozolomide and anti-miR221 PNA using mesoporous silica nanoparticles induces apoptosis in resistant glioma cells. **Small** 2015, 11, 5687-56
4. **A. Bertucci**, A. Candiani, S. Giannetti, A. Manicardi, A. M. Cucinotta, G. Spoto, M. Konstantaki, S. Pissadakis, S. Selleri, R. Corradini. Detection of unamplified genomic DNA by a PNA-based microstructured optical fiber (MOF) Bragg-grating optofluidic system. **Biosens. Bioelectron.** 2015, 63, 248-254.
3. **A. Bertucci**, H. Lulf, D. Septiadi, A. Manicardi, R. Corradini, L. De Cola. Intracellular delivery of Peptide Nucleic Acid and organic molecules using zeolite-L nanocrystals. **Adv. Health. Mater.** 2014, 3, 1812-1817.
2. H. Lulf, **A. Bertucci**, D. Septiadi, R. Corradini, L. De Cola. Multifunctional inorganic nanocontainer for DNA and drug delivery into living cells. **Chem. Eur. J.** 2014, 20, 10900-10904.
Featured in the Front Cover of Chemistry - A European Journal.
1. A. Candiani, **A. Bertucci**, S. Giannetti, M. Konstantaki, A. Manicardi, S. Pissadakis, A. Cucinotta, R. Corradini, S. Selleri. Label- free DNA biosensor based on a peptide nucleic acid-functionalized microstructured optical fiber-Bragg grating. **J. Biomed. Opt.** 2013, 18, 057004.

Patents

1. L. De Cola, E. A. Prasetyanto, **A. Bertucci**, D. Septiady. Disintegratable core/shell silica particles for encapsulating and releasing bioactive macromolecules. US10821082B2, EP3154521B1, CN106456454B. 2020

Book Chapters

2. **A. Bertucci**, S. Silvestrini, R. Corradini, L. De Cola. Loading of PNA and other molecular payloads in inorganic nanostructures for theranostics. DNA Nanotechnology, Humana Press, New York, NY, USA, 2018.
1. **A. Bertucci**, A. Manicardi, R. Corradini. Advanced Molecular Probes for Sequence-Specific DNA Recognition. Detection of non-amplified Genomic DNA, G. Spoto, R. Corradini Eds., Springer, Dordrecht, Netherlands, 2012.