PERSONAL INFORMATION

BICE CONTI

University of Pavia
Department of Drug Sciences
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State personal website(s)

Sex Female | *23/10/1957* | *Nationality* Italian

Enterprise	University	EPR
☐ Management Level	X Full professor	☐ Research Director and 1st level Technologist / First Researcher and 2nd level Technologist / Principal Investigator
☐ Mid-Management Level	☐ Associate Professor	☐ Level III Researcher and Technologist
☐ Employee / worker level	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

2007 – current	**Full professor SSD CHIM09** (Applied pharmaceutical chemistry and technology) at the Department of Drug Sciences of the University of Pavia, Italy.
2017 – current	**Co-Coordinator of EMJMD Nanomed** (European Master Joint Master Degree Nanomedicine for Drug Delivery), University of Paris (France), Pavia (Italy), Patras (Greece), Angers (France).
2017 - current	**Member of committee of the PhD course** in "Biomolecular Sciences and Biotechnology" IUSS, Pavia Italy
2011 - 2016	**Member of scientific Committee** of Interuniversity Consortium TEFARCO INNOVA.
2009 – 2019	**Dean of Pharmacy and Medicinal Chemistry and Pharmaceutical Technology** (LM13) MSc courses of the University of Pavia.
2004 - 2010	**Coordinator of II level Master Course** in Pharmaceutical Technology and regulatory activities, at the University of Pavia, Italy.
2002 – 2016	**Member of committee of the PhD course "**Chemistry and Pharmaceutical Technology", Department of Drug Sciences, University of Pavia, Italy.
2002 – 2004	**Member of the Italian Ministry of Health** committee for the release of marketing authorization of veterinary products.
1995 – 2006	**Associate Professor SSD CHIM09** (Applied pharmaceutical chemistry and technology), Department of Pharmaceutical Chemistry, University of Pavia, Italy
1992 – 1995	**Associate Professor SSD CHIM09** (Applied pharmaceutical chemistry and technology), Department of Pharmaceutical Sciences, University of Catania, Italy
1987 – 1988	**Visiting scientist** College of Pharmacy, University of Kentucky, Lexington, KY, USA
1984 – 1991	**Assistant professor** SSD CHIM09 (Applied pharmaceutical chemistry and technology) at the Department of Drug Sciences of the University of Pavia, Italy
2008 – current	**Teaching** to Medical and Pharmaceutical Biotechnology master courses of the University of Pavia
2017 - current	**Teaching** to Chemical and Pharmaceutical Sciences and Industrial Innovation PhD course of the University of Pavia
2012 – 2016	**Teaching** to Chemistry and Pharmaceutical Technology PhD course of the University of Pavia.
2001 – 2012	**Teaching** to Pharmacy master courses of the University of Pavia.
1992 – 1995	**Teaching** to Medicinal Chemistry and Pharmaceutical Technology master courses of the University of Catania.
1995 - current	**Teaching** to Medicinal Chemistry and Pharmaceutical Technology master courses of the University of Pavia.

EDUCATION AND TRAINING

1981 – 1984 **Post graduate specialization** degree in Industrial Pharmacy at the University of Pavia, Italy. (EQF level 8)

1981 **Qualified pharmacist**

1976 - 1981 **Degree in Medicinal Chemistry** and Pharmaceutical Technology at the University of Pavia, Italy (EQF level 7)

List of principal subjects covered or skills acquired: Pharmaceutical sciences, biopharmaceutics, pharmaceutical technology, applied pharmaceutical chemistry, regulatory affairs, polymer science applied to pharmaceutics, industrial pharmacy.

WORK ACTIVITIES

Organizational and management activities

2022 **Member of Organizing and Scientific committee** of NANOMED Workshop" FROM BIOTECHNOLOGY TO NANOBIOTECHNOLOGY AND VACCINES", Pavia, 11- 13 July 2022. https://www.nanomed2022.it/ The workshop is connected to EMJMD NANOMED

2022 **Organizing** EMJMD NANOMED summer school "Design of pre-clinical and clinical trials with nano-drug delivery systems, and critical assessment of the trial results", Pavia, 4th – 11th July 2022.

2018 **Member of organizing committee of** 18th National School for Doctorate in Pharmaceutical Technology "INNOVATION IN LOCAL DRUG DELIVERY", Como, 25- 27 September 2018. The doctorate school was sponsored by CARIPLO (grant scuole alta formazione).

2016 – 2020 **Founder and Board of Directors member** of Polymerix Ltd, academic spin-off of the University of Pavia, PTS, Viale Taramelli 1, 27100 Pavia, Italy. Annula budget 40000 €

2015 – current **Member of the scientific committees** of annual Simposio AFI, from 55th to 61th (2022) Edition

2014 – 2016 **President of Controlled Release Society** Italian Chapter (CRS IT Chpt)

2014 **Member of organizing and scientific** committee of annual thematic workshop of CRS Italian Chpt, "Drug delivery systems: pharmacokinetic challenges and targeting strategies", Florence 6 – 8 November 2014

2014 **Member of scientific committee of** 14th National School for Doctorate in Pharmaceutical Technology "STRATEGIE PER IL RILASCIO E DIREZIONAMENTO DI FARMACI AL SNC", Rende, 24- 26 September 2014. The doctorate school was sponsored by ADRITELF.

2013 **Member of organizing and scientific** committee of annual thematic workshop of CRS Italian Chpt, "Design and industrial development of advanced drug delivery systems", Pavia, 21 – 23 November 2013.

2013 – 2016 **Member of steering board and secretary of ADRITELF** (Associazione Italiana Docenti Ricercatori Tecnologia e Legislazione Farmaceutica)

2008 – current **Member of Controlled Release Society** Italian Chapter (CRS IT Chpt) and member of steering board

2008 – current **Member of AFI scientifica** (Associazione Farmaceutici Industria).
Member of working party on Advanced therapies and biotechnological pharmaceutical products of AFI

2008 – current **Member of ADRITELF** (Associazione Italiana Docenti Ricercatori Tecnologia e Legislazione Farmaceutica)

Editorial activity

Current **Member of editorial committee of**: "Journal of Drug Delivery Sciences and Technology (JDDST)," (Elsevier Publishing). https://www.scimagojr.com/journalsearch.php?q=22204&tip=sid

Current **Member of editorial committee of:** "International Journal of Molecular Science" (MDPI Publishing) (ISSN 1422-0067; CODEN: IJMCFK; ISSN 1661-6596 for printed edition). https://www.scimagojr.com/journalsearch.php?q=25879&tip=sid

Member of editorial committee of: "Recent Patents on Drug Delivery & Formulation" (Bentham Science publishing). https://www.scimagojr.com/journalsearch.php?q=11500153306&tip=sid

Current **Reviewer for:** Journal of Controlled Release, AAPS Pharmaceutical Science and Technology, Pharmaceutics, Material Sciences and Engineering C, Reactive and Functional Polymers, International Journal of Pharmaceutics, International Journal of Molecular Sciences (IJMS), Journal of Drug Delivery Science and Technology (JDDST).

2020 - 2021 **Guest editor** of *International Journal of Molecular Sciences* (MDPI Publishing,ISSN 1422-0067) Special Issue "Challenges, Opportunities and Innovation in Local Drug Delivery".

2022 - 2023 **Guest editor** of *Pharmaceutics* (MDPI Publishing,ISSN: 1999-4923) Special Issue ""Electrospun Fibers: Advancement in Drug Delivery, Control Release, and Tissue Regeneration".

Invited presentations (Last 3 years)

Virtual Pharm Sci Conference **2021, 7-9 September 2021**

APS PharmSci Meeting, Emerging Technologies Focus Group, B. Conti Department of Drug Sciences, University of Pavia, "Microfluidics as emerging technique in manufacturing polymer nanoparticles" 9 September 2021, 14.45 – 15.30.

105° Congresso Nazionale SIO (Società Italiana di Otorinlaringologia e Chirurgia Cervico Facciale **Napoli 16 – 19 Maggio 2018**

RELAZIONE UFFICIALE "Patologia infettiva emergente e riemergente in ORL", B.Conti, Department of Drug Sciences, University of Pavia, "WHAT IS THE FUTURE FOR ANTIBIOTIC TREATMENT? Antibiotic Treatment and Nanomedicine. 16 May, 16 – 16.20.

Joint meeting EPNOE (European Polysaccharides network of excellence) and CRS (Controlled Release Society) It Chpt **Rome, 14 June 2018**

B.Conti Department of Drug Sciences, University of Pavia, "Polysaccharides-based NANO drug delivery systems".

Grants (Last 10 years)

2022 - 2026

NANOREMEDI - 101072645 - GAP-101072645 H2020 HORIZON-MSCA-2021-DN-01, proposal # 101072645 Proposal Title: Functional Nanoscaffolds for Regenerative Medicine. Amount granted to the research unit 518000 €. The overall goal of the project is design, preparation , characterization and validation of conceptually innovative peptide based nanomaterials for regenerative medicine applications. .The project will tackle three highly relevant cases studies: i) tissue engineered vascular grafts to replace damaged peripheral arteries; ii) stem cell based regenerative medicine for bone and cartilage repair; iii) **facing with implantation failure; the last addressed to overcome bacterial severe infections.**

2017 – 2020

Project Ricerca Corrente 2017 grant #12835 **"**An hybrid approach to the repair of esophageal defects: from bio scaffolds engineering to in vivo validation in the porcine model" IRCCS Policlinico S.Matteo. Pavia, Italy, B.Conti research unit P.I., M.Benazzo project P.I.. Amount granted: 158000 €

2021 - 2023

Project Ricerca Corrente 2021, grant #08053921, "3D-Hybrid Engineered Tubular Bioscaffold for Esophageal Tissue Regeneration: from in vitro to in vivo validation " IRCCS Policlinico S.Matteo Pavia, Italy, , B.Conti research unit P.I., M.Benazzo project P.I.. Amount granted 150000 €
Both "Ricerca Corrente projects" are aimed to esophageal regeneration in order to satisfy an unmet medical need rising when esophageal partial resection is required, due to different pathologies. Design and development of tubular biodegradable biocompatible nanofibrous scaffolds obtained combining 3D printing and Electrospinning is investigated. In order to reduce postoperative inflammation and avoid infections, loading of Anti-inflammatory and antibiotic drugs in the polymeric scaffolds is investigated. The scaffolds will be engineered with mesenchymal stem and *in vivo* tested in an animal model.
Relevance to PE13: investigation on a nanofibrous drug delivery system with both regenerative and antibacterial properties.

2020 – 2022

Project Hub Regione Lombardia "Digital Smart Fluidics" DSF, B. Conti research unit member. F.Auricchio P.I.. Amount granted 2000000 €
The part of project developed by B.Conti research unit aims to investigate a cutting edge technology such as microfluidics focused on manufacturing polymer nanoparticulate drug delivery systems. A prototype apparatus has been developed and will be patented. Relevance to PE13: innovation in nanoparticulae drug delivery systems manufacturing technology.

2011 – 2012

Research project "Development of biodegradable implantable polymer system for prolonged release of ivermectin" granted from CEVA-Vetem, Agrate Brianza, Italia. B. Conti project P.I.. Amount granted 30000 €.
The project aimed to design and developed biodegradable and biocompatible microparticulate drug delivery systems loaded with Ivermectin and intended for subcutaneous administration in small animals. The microparticulate drug delivery systems ensured prolonged activity of the antiparasitic drug for 6 months, without induced inflammation. Relevance to PE13: investigation of a microparticulate drug delivery system with antiparasitic activity able to improve antiparasitic therapy in dogs.

2011 - 2012

.**Research project** "Injectable in situ forming composite gel for bone tissue regeneration" granted from Geistlich Pharma AG, Root-Längenbold, Svizzera. B. Conti project P.I.. Amount granted 30000 €.
The project aimed to design and developed biodegradable and biocompatible scaffolds for bone regeneration, including biopolymers of natural origin such as chitosan. Loading of antibacterial drugs such as was preliminary investigated. Relevance to PE13: investigation on biopolymers also including antibacterial properties and delivery of antibacterial drugs.

Patents

3D-PATTERNED FIBER MATERIAL FOR THE TOPICAL DELIVERY OF NUCLEIC ACID AND THE PROCESS FOR ITS PREPARATION. R.Dorati, B.Conti, I.Genta PCT/IB2020/059267.
Relevance to PE13: the patented manufacturing technology permits to obtain nanfibrous matrices with peculiar 3D patterned geometries exerting superior properties in terms of their interaction of biological media and tissue regeneration. The nanofibrous electrospun matrices can be loaded with antibacterial drugs, and improve local antibiotic delivery and their efficacy, reducing antimicrobial resistance.

METODO PER LA PRODUZIONE DI UN TESSUTO A MEMORIA DI FORMA E USI RELATIVI. Bice Conti, Ida Genta, Rossella Dorati, Marco Benazzo, Silvia Pisani, Maria Antonietta Avanzini. Italian patent No. 102021000019256 submitted 20/07/2021.
Relevance to PE13: the patented electrospun shape memory nanofibrous engineered tissue (SMET) is able to change its configuration and revert to its original shape in response to specific external stimuli (temperature). SMET can be used in those cases in which invasive surgery is required to reach tissues or parts of organs. Thanks to its specific property of being applied in a rolled-up form (space saver) and then unrolling, once inserted into the human body, SMET can be used to repair damaged tissue areas of different sizes, and/or to deliver a drug locally at the site of action. These includes, but are not limited to intraocular, intrapleural, intrauterine and trans-nasal-sphenoid surgery.

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s) English C1

Job-related skills Team working ability, team coordination ability

Digital skills Use digital devices, communication applications, and networks to access and manage information

Other skills Knowledge and competences on Regulatory framework related to drug products marketing authorization (MA) procedures, CTD, drug product quality evaluation (CTD, module 3). Know how in biopolymer science applied to the pharmaceutical field.

ADDITIONAL INFORMATION

Statement of Research Interests

Design, preparation , characterization, validation of conceptually innovative micro-nano-systems to improve stability and bioavailability of drugs; local drug delivery (i.e. to lungs).
Bice Conti research group is deeply involved for several years in drug delivery formulation studies, namely pharmaceutical nanotechnology, also combining drug delivery with tissue regeneration purposes.The scientific research exploits innovative and advantageous opportunities offered by polymers focusing, but not exclusively, on biodegradable biocompatible synthetic polymers, i.e. polyesters and derivatives, and new peptide based nanomaterials (on going project **NANOREMEDI** H2020 HORIZON-MSCA-2021-DN-01, proposal # 101072645) to optimize and target antibacterial therapy, also reducing AMR. Surgical bacterial infections have been addressed.
The expertise connects with following PE13,spoke/WP activities:
INF-ACT Spoke 3 – AMR. WP4 –. Task 7.Design of new delivery systems based on bio- and nano-structures (including Evs).
INF-ACT Spoke 5 – New Therapeutic Strategies. WP5 -Task 2. Drug formulations and antimicrobial/antiviral drug delivery. Task 3. Development of antimicrobial biomaterials for medical devices.

Publications

total number of publications in peer-review journals: **187**
total Impact Factor (IF) (average IF/paper): XX
total number of citations: **5007**
H index (Scopus): **39.** https://www.scopus.com/authid/detail.uri?authorId=7005621694
Scopus Author ID: 7005621694
Bice Conti ORCID: https://orcid.org/0000-0002-0034-2815

General comment introducing the list of selected publications

The following publications have been selected as representatives:

List of 1selected publications

Pisani S., Di Martino D., Cerri,S., Genta I., Dorati R., Bertino G., Benazzo M., Conti B.* Investigation and Comparison of Active and Passive Encapsulation Methods for Loading Proteins into Liposomes. *Int. J. Mol. Sci.* 2023, *24*, 13542. https://doi.org/10.3390/ijms241713542 IF 5.6

Pisani S., Calcaterra V., Croce S., Dorati R., Bruni G., Genta I., Avanzini A., Benazzo M., Pelizzo G., Conti B.*, Shape memory engineered scaffold (SMES) for potential repair of neural tube defects, Reactive and Functional Polymers, 173, 2022, 105223, https://doi.org/10.1016/j.reactfunctpolym.2022.105223 IF 4.966

M. Rosalia, P. Ravipati, P. Grisoli, R. Dorati, I. Genta, E. Chiesa, G. Bruni, **B. Conti**. 2021. "Tobramycin Supplemented Small-Diameter Vascular Grafts for Local Antibiotic Delivery: A Preliminary Formulation Study" International Journal of Molecular Sciences , 22, no. 24: 13557. https://doi.org/10.3390/ijms222413557, I.F. 4.556

R. Dorati, E.Chiesa, M. Rosalia, S. Pisani, I.Genta, G. Bruni, T. Modena, **B. Conti**. 2021. "Tubular Electrospun Vancomycin-Loaded Vascular Grafts: Formulation Study and Physicochemical Characterization" *Polymers* 13, no. 13: 2073. https://doi.org/10.3390/polym13132073. **I.F. 4.329**

C. E. Mariotti, L. Ramos-Rivera, **B. Conti** , A. R. Boccaccini Zein-Based Electrospun Fibers Containing Bioactive Glass with Antibacterial Capabilities. Macromol Biosci. 2020 Jul;20(7):e2000059. doi: 10.1002/mabi.202000059. Epub 2020 May 25. PMID: 32449606, I.F. 4.979

S. Pisani, R. Dorati, E. Chiesa, I. Genta, T. Modena, G.Bruni, P.Grisoli, **B. Conti**. 2019. "Release Profile of Gentamicin Sulfate from Polylactide-*co*-Polycaprolactone Electrospun Nanofiber Matrices" *Pharmaceutics* 11,4,161. https://doi.org/10.3390/pharmaceutics11040161. I.F. 6.321

R. Dorati, A. DeTrizio, M. Spalla, R. Migliavacca, L. Pagani, S. Pisani, E. Chiesa, **B. Conti**, Tiziana Modena, and Ida Genta. 2018. "Gentamicin Sulfate PEG-PLGA/PLGA-H Nanoparticles: Screening Design and Antimicrobial Effect Evaluation toward Clinic Bacterial Isolates" *Nanomaterials* 8, no. 1: 37. https://doi.org/10.3390/nano8010037. I.F. 5.346

De Trizio, P. Srisuk, R.R. Costa, A. G. Fraga, T. Modena, I. Genta, R. Dorati, J. Pedrosa, **B. Conti**, Vi. M. Correlo, R. L. Reis, 2017. Natural based eumelanin nanoparticles functionalization and preliminary evaluation as carrier for gentamicin, Reactive and Functional Polymers, 114, 38-48, ISSN 1381-5148, https://doi.org/10.1016/j.reactfunctpolym.2017.03.004. I.F. 3.975

R. Dorati, A. DeTrizio, T. Modena, **B. Conti**, F. Benazzo, G. Gastaldi, I. Genta. 2017. "Biodegradable Scaffolds for Bone Regeneration Combined with Drug-Delivery Systems in Osteomyelitis Therapy" *Pharmaceuticals* 10, no. 4: 96. https://doi.org/10.3390/ph10040096. I.F. 5.68

1 R. Dorati, A. DeTrizio, I. Genta, P. Grisoli, A. Merelli, C. Tomasi, **B. Conti**, 2016. An experimental design approach to the preparation of pegylated polylactide-co-glicolide gentamicin loaded microparticles for local antibiotic delivery, Materials Science and Engineering: C, 58, 909-917, ISSN 0928-4931, https://doi.org/10.1016/j.msec.2015.09.053. I.F. 7.328

R.Dorati, A. De Trizio, I. Genta, A. Merelli, T. Modena, **B. Conti,2016.** Formulation and in vitro characterization of a composite biodegradable scaffold as antibiotic delivery system and regenerative device for bone. Journal of Drug Delivery Science and Technology, 35, 124-133, ISSN 1773-2247, https://www.sciencedirect.com/science/article/pii/S1773224716300223. I.F. 3.981

R. Dorati, C. Colonna, I. Genta, A. De Trizio, T. Modena, H. Klöss, **B. Conti**, 2015. In vitro characterization of an injectable In situ forming composite scaffold for bone reconstruction, Polymer Degradation and Stability, 119, 151-158, ISSN 0141-3910,https://www.sciencedirect.com/science/article/pii/S014139101500169X. I.F 4.63

According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV.
Pavia, 05/02/2024 Bice Conti