

## Curriculum Vitae

GIOVANNA BRUNI

### PERSONAL INFORMATIONS

Place and date of birth	Pavia, March 14, 1965
Nationality	Italian
Position	Associate Professor, Chemistry Department - University of Pavia
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### PRESENT AND PAST POSITIONS

Since 2020	Associate Professor (CHEM-02/A), Chemistry Department of the University of Pavia. Scientific responsible for the Laboratory of Instrumental Techniques of the Chemistry Department Responsible for the courses: "Physical chemistry applied to the pharmaceutical sciences" (6 CFU for 2 groups of students) (Pharmacy degree), "Solid state of substances of pharmaceutical interest" (3 CFU) (Chemistry degree).
1994-2000	Researcher at the Chemistry Department of the University of Pavia (CHIM/02). Responsible for the courses: "Physical Chemistry" (Pharmacy degree), Erboristic Techniques and Scientific Information on Drug degrees), "Advanced Thermal Techniques (Pharmacy degree).

### EDUCATION

1991-1994	PhD degree in Pharmaceutical Chemistry and Technology, University of Pavia.
1990	Qualification to practice as a pharmacist, University of Pavia.
1989-1990	Degree in Pharmacy (110/110). University of Pavia.
1984-1989	Degree in Pharmaceutical Chemistry and Technology (110/110 cum laude), University of Pavia.

## SCIENTIFIC RESEARCH ACTIVITY

Her main research interests are in the field of the physico-chemical characterization of solid systems, in particular, of compounds of pharmaceutical interest.

She gained consolidated skills and long experience with thermal techniques (DSC, TGA), FT-IR spectroscopy and electron scanning microscopy (SEM-EDS).

Her research activity is mainly focused on the resolution of problems related to the preformulation phase of active principles: polymorphism, amorphism, drug-exciipient compatibility, strategies for improving the pharmaceutical behaviour of drugs such as cocrystallization.

The long experience in the field of the physico-chemical characterization of pharmaceutical solids and the expertise gained in the use of thermal techniques and electron microscopy are the basis for an activity of problem solving in the pharmaceutical industry.

Furthermore, she gave important contributions in the field of the pharmaceutical technology and of the tissual engineering.

## RESPONSABILITY FOR SCIENTIFIC RESEARCH ENTRUSTED BY PRIVATE COMPANIES

Scientific manager of research contracts and collaborations with various pharmaceutical companies: AMSA (Como), Giuliani (Milano), Rottapharm (Monza), Special Product's Line (Pomezia, RO), Teknofarma (Torino), Zoetis Manufacturing Italia (Catania), Monterease (Bollate, MI), COSMA (Ciserano, BG), Neuraxpharm (Ascoli Piceno), OLON (Casaletto Lodigiano, LO), Neopharmed Gentili (Milano).

## EDITORIAL ACTIVITY AND PUBLICATIONS

Over 190 publication on peer-reviewed international journals (ISI)

Source: SCOPUS (May 2024)

191 publications

time cited: 4068

h-index: 32

Author of the textbook "Chimica Fisica" – Synopsis – Ed. Libreria Universitaria Medea (2017).

Referee for a number of international scientific journals.

Associate Editor of the Journal of Thermal Analysis and Calorimetry (Springer), of Molecules (MDPI) and of Frontiers in Chemistry - Solid State Chemistry.

## GRANTS

1998-2000	PRIN 9803109866_007 - Reactivity, structure and thermodynamic properties of ternary oxides and of organic compounds.
2003-2005	PRIN 2003035197_003 - Nanotechnologies in pharmaceutical field: general aspects and influence on physico-chemical properties.

2005-2009	FISR pro 1758 Nic - 28/07/2005 - Nanostore: production and storage of hydrogen with nanomaterials.
2022	PRIN PNRR 2022 - A bio-inspired chemical approach for agro-industrial waste valorization

## PERSONAL SKILLS

Mother tongue	Italian
Other languages	English. Chinese.
Communication skills	During his work experiences she developed excellent team working skills and excellent teaching skills
Organisational/managerial skills	Excellent organizational and work coordination skills.
Technical skills and competences	Thermal techniques: Thermogravimetry (TGA), Differential Scanning Calorimetry (DSC). Scanning Electron Microscopy coupled with Energy Dispersive Spectroscopy (SEM-EDS) and Hot-Stage Microscopy. Spectrophotometry FT-IR and UV/VIS. Powder X-Ray Diffraction (PXRD).
Other publications	Author of the books: "Raccolta di ricette dal Tempio dell'Alimento" (Ed. La Goliardica Pavese, 2005). "San Luigi Versiglia, Protomartire Salesiano in Cina" (Ed. Velar, 2020)

## SOME RECENT SCIENTIFIC PUBLICATIONS

G. Bruni, D. Capsoni, C. Milanese, A. Cardini, Polymorphic quantification of dexketoprofen trometamol by differential scanning calorimetry, *Journal of Thermal Analysis and Calorimetry*, 2023, 148:1949-1958. DOI: 10.1007/s10973-022-11870-y

L. Maggi, G. Bruni, C. Ferrara, C. Puscalau, I. Quinzeni, V. Friuli, F. Monteforte, D. Capsoni. Zaltoprofen-Layered Double Hydroxide Hybrids to Enhance Zaltoprofen Solubility and Dissolution Rate, *Applied Clay Science*, 2023, 231, 106723. DOI: 10.1016/j.clay.2022.106723

L. Maggi, C. Urru, V. Friuli, C. Ferrara, D.M. Conti, G. Bruni, D. Capsoni, Synthesis and Characterization of Carvedilol-Etched Halloysite Nanotubes Composites with Enhanced

Drug Solubility and Dissolution Rate, *Molecules*, 2023, 28, 3405. DOI: 10.3390/molecules28083405

L. Maggi, V. Friuli, G. Bruni, A. Rinaldi, M. Bini, Hybrid nanocomposites of tenoxicam: layered double hydroxides (LDHs) vs. hydroxyapatite (HAP) inorganic carriers, *Molecules*. 2023, 28, 4035. DOI: 10.3390/molecules28104035

D.M. Conti, C. Fusaro, G. Bruni, P. Galinetto, B. Albini, C. Milanese, V. Berbenni, D. Capsoni, ZnS-rGO/CNF Free-Standing Anodes for SIBs: Improved Electrochemical Performance at High C-Rate, *Nanomaterials*, 2023, 13, 1160. DOI: 10.3390/nano13071160

E.M. Tottoli, L. Benedetti, E. Chiesa, S. Pisani, G. Bruni, Ida Genta, B. Conti, G. Ceccarelli, R. Dorati, Electrospun Naringin-Loaded Fibers for Preventing Scar Formation during Wound Healing, *Pharmaceutics*, 2023, 15, 747. DOI: 10.3390/pharmaceutics15030747

E.M. Tottoli, L. Benedetti, F. Riva, E. Chiesa, S. Pisani, G. Bruni, I. Genta, B. Conti, G. Ceccarelli, R. Dorati, Electrospun Fibers Loaded with Pirfenidone: An Innovative Approach for Scar Modulation in Complex Wounds, *Polymers*, 2023, 15, 4045. DOI: 10.3390/polym15204045

S. Pisani, V. Mauri, E. Negrello, V. Friuli, I. Genta, R. Dorati, G. Bruni, S. Marconi, F. Auricchio, A. Pietrabissa, M. Benazzo, B. Conti, Hybrid 3D-Printed-Electrospun scaffolds loaded with dexamethasone for soft tissue applications, *Pharmaceutics*, 2023, 15, 2478. DOI: 10.3390/pharmaceutics15102478

V. Larini, C. Ding, F. Faini, G. Pica, G. Bruni, L. Pancini, S. Cavalli, M. Manzi, M. Degani, R. Pallotta, M. De Bastiani, Chang-Qi Ma, G. Grancini, Sustainable and Circular Management of Perovskite Solar Cells via Green Recycling of Transparent Conductive Oxide, *Advanced Functional Materials*, 2023, DOI: 10.1002/adfm.202306040.

R. Montecucco, G. Pica, V. Romano, F. De Boni, S. Cavalli, G. Bruni, E. Quadri, M. De Bastiani, M. Prato, R. Po, G. Grancini, The Stabilization of CsPbI<sub>3-x</sub>Br<sub>x</sub> Phase by Lowering Annealing Temperature for Efficient All-Inorganic Perovskite Solar Cells, *Sol RRL*, 2023, 7, 2300358, DOI: 10.1002/solr.202300358.

M. Rosalia, M. Giacomini, E.M. Tottoli, R. Dorati, G. Bruni, I. Genta, E. Chiesa, S. Pisani, M. Sampaolesi, B. Conti, Investigation on electrospun and solvent casted PCL-PLGA blends scaffolds embedded with induced pluripotent stem cells for tissue engineering, *Pharmaceutics*, 2023, 15, 2736. DOI: 10.3390/pharmaceutics15122736

M. Okkeh, L. De Vita, G. Bruni, L. Doveri, P. Minzioni, E. Restivo, M. Patrini, P. Pallavicini, L. Visai, Photodynamic Toluidine Blue-Gold Nanoconjugates as a Novel Therapeutic for Staphylococcal Biofilms, *RCS Advances*, 2023, 13, 33887. DOI: 10.1039/d3ra04398c

M. Rosalia, P. Grisoli, R. Dorati, E. Chiesa, S. Pisani, G. Bruni, I. Genta, B. Conti, Influence of electrospun fibre secondary morphology on antibiotic release kinetic and its impact on antimicrobial efficacy, *International Journal of Molecular Sciences*, 2023, 24, 12108. DOI: 10.3390/ijms241512108

E. Restivo, E. Peluso, N. Bloise, G. Lo Bello, G. Bruni, M. Giannaccari, R. Raiteri, L. Fassina, L. Visai, Surface Properties of a Biocompatible Thermoplastic Polyurethane and Its Anti-Adhesive Effect against *E. coli* and *S. aureus*, *Journal of Functional Biomaterials*, 2024, 15, 24 pag. DOI: 10.3390/jfb15010024

V. Friuli, L. Maggi, G. Bruni, F. Caso, M. Bini, Hydroxyapatite Nanorods Based Drug Delivery Systems for Bumetanide and Meloxicam, Poorly Water Soluble Active Principles, *Nanomaterials*, 2024, 14, 113. DOI: 10.3390/nano14010113

V. Friuli, C. Urru, C. Ferrara, D. Maria Conti, G. Bruni, L. Maggi, D. Capsoni, Design of etched- and functionalized-halloysite/meloxicam hybrids: a tool for enhancing drug solubility and dissolution rate, *Pharmaceutics*, 2024, 16, 338, 22 pag. DOI: 10.3390/pharmaceutics16030338

G. Bruni, D. Capsoni, A. Pellegrini, A. Altomare, M. Coduri, C. Ferrara, P. Galinetto, R. Molteni, New findings on crystal polymorphism of imepitoin, *Molecules*, 2024, 29, 28 pp. DOI: 10.3390/molecules29081724

D.M. Conti, C. Urru, G. Bruni, P. Galinetto, B. Albin, C. Milanese, S. Pisani, V. Berbenni, D. Capsoni. Design of  $\text{Na}_3\text{MnZr}(\text{PO}_4)_3$ /Carbon Nanofiber Free-Standing Cathodes for Sodium-Ion Batteries with Enhanced Electrochemical Performances through Different Electrospinning Approaches, *Molecules*, 2024, 29, 1885. DOI: 10.3390/molecules29081885

D.M. Conti, C. Urru, G. Bruni, P. Galinetto, B. Albin, V. Berbenni, A. Girella, D. Capsoni.  $\text{Na}_3\text{MnTi}(\text{PO}_4)_3$ /C Nanofiber Free-Standing Electrode for Long-Cycling-Life Sodium-Ion Batteries, *Nanomaterials*, 2024, 14, 804. DOI: 10.3390/nano14090804

L. Maggi, V. Friuli, B. Cerea, G. Bruni, V. Berbenni, M. Bini, Physicochemical Characterization of Hydroxyapatite Hybrids with Meloxicam for Dissolution Rate Improvement, *Molecules*, 2024, 29, 2419. DOI: 10.3390/molecules29112419

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Pavia, May 23, 2024

Il Dichiarante

*Giuseppe Pruni*