

## **Training**

**1982:** Degree in chemistry at the University of Bologna (110/110 cum laude)

**1986:** PhD in Chemical Sciences

**1987-1988:** Visiting Scientist at the Dyson Perrins Laboratory of Oxford University (UK) with the research group of Prof. Jack E. Baldwin

**2015:** Visiting Professor at the University of Pune, National Chemical Laboratory (Pune) e Indian Institute of Science (Bangalore)

## **Academic Positions**

**2018 to date:** full professor (CHIM/06 - organic chemistry) at the Department of Chemistry "Giacomo Ciamician" of the University of Bologna

**1998-2018:** associate professor (CHIM/06 - organic chemistry) at the Department of Chemistry "Giacomo Ciamician" of the University of Bologna

**1990-1998:** Researcher (CHIM/06 - organic chemistry) at the Department of Chemistry "Giacomo Ciamician" of the University of Bologna

## **Prizes**

**1982:** "MYRIAM Borsari" awarded by the University of Bologna

**1982:** "VITTORIO EMANUELE II" awarded by the University of Bologna

**1992:** Academic Award for Chemical Sciences awarded by the National Society of Sciences Letters and Arts in Naples

## **Chemical Societies Membership**

**1990 to date:** Italian Chemical Society

**1994 to date:** National Interuniversity Consortium "innovative methodologies and processes of synthesis" CINMPIS

**2000 to date:** American Chemical Society

**2015 to date:** International Society of Heterocyclic Chemistry

**2016 to date:** Italian Peptides Society

## **Institutional Assignments**

**2018 to date:** Director of the International Master Degree Advanced Cosmetic Sciences

**2015-2018:** Department Board Member

**2015-2018:** Board Member of the School of Pharmacy, Biotechnology and Motor Science

**2015-2017:** Past-President of the Italian Chemical Society (Emilia Romagna Section)

**2017 to date:** Member of the Scientific Committee of the Italian Peptides Society

**2012-2014:** President of the Italian Chemical Society (Emilia Romagna Section)

**2009-2011:** member of the Governing Council of the Italian Chemical Society (Emilia Romagna Section)

**2008-2012:** Board Member of the of PhD Course in Chemical Sciences - University of Bologna

**2003-2017** – University delegate for the TASSEP Student Exchange project (Transatlantic Science Student Exchange Program)

### **Research Activity**

Claudia Tomasini developed over the years the study of different topics, all in the context of the total synthesis of complex molecules, initially with the synthesis of natural compounds and, more recently, developing new synthetic compounds that mimic natural biomolecules, such as peptides. These synthetic compounds have been recently defined Foldamers.

Throughout the process related to the study and synthesis of complex molecules, it was always necessary to study and develop new synthetic methods to solve the problems encountered in the preparation of the desired compounds. Moreover, great attention has been attributed to non-destructive methods for the compounds conformational analysis, mainly the NMR spectroscopy.

During the first period of the research activity (1983-1999), syntheses of pharmacologically active natural organic substances were developed. Great attention has been focused on the identification and development of new selective methods of synthesis through the formation of new carbon-eteroatomo bonds, often characterized by the formation of intermediate heterocycles.

The research developed in more recent years (2000-2018) has been characterized by the study of synthetic compounds mimicking complex natural molecules that have been defined Foldamers. The research purpose is the synthesis and conformational analysis of pseudopeptides, able to mimic the secondary structures of proteins, and the preparation of supramolecular materials, such as fiber and gel, for the application of these derivatives in the pharmacological field.

We have also observed that some classes of oligomers tend to assume a structure ordered in solid phase, presenting in the form of fibrils observable by optical microscope. Of consequence, starting from 2007, we studied the solid-phase properties of some foldamers containing aromatic rings, by means of SEM and TEM spectroscopy, X-ray powder diffraction and single crystal and IR and solid phase NMR. A series of compounds are still being studied which, depending on the characteristics of the single compound, are assembled to form fibres, fibrils, plates, crystals, gels or simple amorphous solids.

The research ended up in the production of 118 original articles and 2 patents (September 2020).

H index (Scopus): 32 (totale citazioni 3.320)

H index (Web of Science): 31 (totale citazioni 3.256)

### **Scientific Responsibility for National and International Projects**

**2009-2013:** Advisory Board Member of the COST Action CM0803 "Functional peptidomimetic foldamers: from unnatural amino acids to self-assembling nanomaterials"

**2012-2015:** Coordinator of the PhD Project "FOLDET", Consortium Spinner, Regione Emilia Romagna

**PRIN 2017:** Local coordinator of PRIN 2017 project 2017CR5WCH

## Conferences Organization

**1 December 2017:** Bologna - 17<sup>th</sup> Meeting of the Organic Chemical Society (Section Emilia Romagna)

**15 May 2017:** Bologna - Meeting "The cosmetics sector: a job outlet for graduates in chemical and pharmaceutical sciences" in collaboration with Cosmetica Italia

**14-16 February 2016:** Bologna - Conference "Synthesis and Biomedical Applications of Tumor-Targeting Peptidomimetics" At the Academy of Sciences in Bologna

**13-17 September 2015:** Bologna - XXXVI Conference of Organic Chemistry Division of Organic Chemical Society

**18 December 2013:** Bologna - 13<sup>th</sup> Meeting of the Italian Chemical Society (Section Emilia Romagna)

**6-8 October 2010:** Bologna - "FOLDAMERS: Design, Synthesis and applications" (Meeting organized under the COST CM0803 action: Functional Peptidomimetic Foldamers: From Unnatural Amino Acids to self-Assembling Nanomaterials)

**4 December 2009:** Bologna - 9<sup>th</sup> Meeting of the Italian Chemical Society (Section Emilia Romagna)

## Editorial Activity

**Guest Editor** of the Special Issue "Foldamers": European Journal of Organic Chemistry - June 2013

**Member of the Editorial Board** by GELS (ISSN 2310-2861), open-Access magazine published online by MDPI.

**Referee of high impact journals:** Journal of the American Chemical Society, Journal of Organic Chemistry, European Journal of Organic Chemistry, Organic Letters, Synlett, Chemistry: A European Journal, Chemistry: An Asian Journal, Organic & Biomolecular Chemistry, Angewandte Chemie International Edition, Crystal Growth & Design, Chemical Communication, New Journal of Chemistry.

Prof. Tomasini translated some chapters of two teaching texts of organic chemistry:

- Janice Gorzynski Smith – Organic Chemistry – McGraw-Hill (chapters 25-28)
- Paula Yurkanis Bruice – Elements of organic chemistry – EdISES (chapters 14-15).

## External Referee for PhD thesis final exams:

**2017:** Dr. Bhartendu K. Srivastava – Indian Institute of Technology - Madras (India)

**2017:** Dr. Sushil Namdev Benke - Indian Institute of Science Education and Research - Pune (India)

**2017:** Dr. Sachin Balasaheb Baravkar – University of Pune (India)

**2016:** Dr. Shama Tumminakatti – Indian Institute of Science – Bangalore (India)

**2013:** Dr. Gert Callebaut – Ghent University (Belgium)

**2010:** Dr. Jordi Aguilera Corrochano – Universitat Autònoma de Barcelona Spain)

**2008:** Dr. Miriam BRU Roig – University Jaume I – Castellon de la Plana (Spain)

**2006:** Final examination of PhD students (Chemical Sciences) of the University of Padua (cycle XVIII and XIX)