

**Dr. Arianna Quintavalla  
Curriculum Vitae**

## **Personal Information**

First name, Surname: Arianna Quintavalla

e-mail: arianna.quintavalla@unibo.it

Nationality: Italian

### **Professional Activities:**

**Since June 21<sup>st</sup>, 2019:** Fixed-term Senior Assistant Professor (RTD-B) with a full-time commitment regime for the Sector 03/C1 - Organic Chemistry, Scientific Sector CHIM/06 - Organic Chemistry. Activity carried out at the Department of Chemistry "G. Ciamician", University of Bologna.

Assigned activities:

- 350 hours of teaching activities and student services for each academic year. Within the 350 hours, 60 hours of frontal teaching are planned to be held for the School of Sciences;
- research activity to be carried out in relation to the development of the project: "Design, synthesis and optimization of new molecular structures according to their applications in: a) sustainable catalytic processes, b) fight against parasitic diseases, such as malaria and leishmaniasis". Main objectives of the research activity: 1) Design, synthesis and optimization of molecular structures with potential biological activity, mainly against parasites such as *Plasmodium falciparum* (malaria) and / or *Leishmania*. 2) Design and development of innovative catalysts (metal-, organ- and / or carbo-catalysts) and new catalytic processes to be applied in various fields of scientific research.

**Since January 8<sup>th</sup>, 2018:** Fixed-term Junior Assistant Professor (RTD-A) with a full-time commitment regime for the Sector 03/C1 - Organic Chemistry, Scientific Sector CHIM/06 - Organic Chemistry. Activity carried out at the Department of Chemistry "G. Ciamician", University of Bologna.

Assigned activities:

- 350 hours of teaching activities and student services for each academic year. Within the 350 hours, 60 hours of frontal teaching are planned to be held for the School of Sciences;
- research activity to be carried out in relation to the development of the project: "Organic synthesis applied to the development of bioactive molecular targets and new catalytic processes". Main objectives of the research activity: 1) design and synthesis of compounds with biological activity against parasites (malaria and/or leishmaniasis). 2) Development of innovative catalysts (metal-catalysts, organocatalysts or

carbocatalysts) and new processes to be applied in various research fields.

***From December 10<sup>th</sup>, 2008 to January 7<sup>th</sup>, 2018:*** Graduate Technician, permanent position at the Department of Chemistry "G. Ciamician", University of Bologna.

Activities carried out as graduate technician:

- Scientific research activity as member of the research group of Prof. C. Trombini.
- Assistance to the educational laboratories of Organic Chemistry for the Courses of the Degree in Chemistry and other Degrees related to the School of Sciences and other Schools.
- Management, maintenance and assistance to the instruments used in the research and teaching activities of the Organic Chemistry Area of the Department.
- Management of orders and supplies of reagents and solvents used in the teaching and research activities of the Organic Chemistry Area and of the centralized warehouse for the distribution of solvents to the entire Department.

## **Qualifications**

**2000: Master Degree in Chemistry** achieved on December 14<sup>th</sup>, 2000 (Grade: 110/110 *cum laude*) at the Department of Chemistry "G. Ciamician", University of Bologna.

Thesis title: "Enantioselective Addition to Carbonyl Compounds of Crotylhalides and Bromoesters in the presence of Chromium Chiral Complexes".

Tutor: Prof. Achille Umani-Ronchi; Co-tutor: Prof. Pier Giorgio Cozzi.

**2001: Chemical Professional Qualification**, obtained by passing the state examination in the first session of 2001 at the University of Bologna.

**2001-2003: Ph.D. in Chemical Sciences** of the University of Bologna (XVI cycle, January 2001-December 2003) performed at the Department of Chemistry "G. Ciamician". Supervisor: Prof. G. Cainelli.

Thesis title: "Synthesis of 4-alkylidene-beta-lactams: a new class of enzymatic inhibitors".

Ph.D. obtained by supporting the final dissertation on June 1<sup>st</sup>, 2004.

**2017: National Scientific Qualification as Associate Professor in Organic Chemistry** (CHIM06-03/C1). Qualification valid from April 4<sup>th</sup>, 2017 to April 4<sup>th</sup>, 2023.

## **Postgraduate academic experience**

**Research fellowships** at the Department of Chemistry "G. Ciamician", University of Bologna:

- May 2<sup>nd</sup>, 2001 to June 30<sup>th</sup>, 2002. Research project: "Synthesis of new biologically active compounds for the preparation of antibiotics and enzyme inhibitors".
- July 1<sup>st</sup>, 2002 to June 30<sup>th</sup>, 2004. Research project: "Asymmetric synthesis of chiral diamminobicarboxylic acids with potential biological activity".
- July 1<sup>st</sup>, 2004 to June 30<sup>th</sup>, 2006. Research project: "Synthesis of new enzymatic inhibitors".
- December 1<sup>st</sup>, 2006 to November 30<sup>th</sup>, 2008. Research project: "Synthesis of new biologically active compounds for the preparation of antibiotics and enzymatic inhibitors".

**Research collaboration agreement** (July 1<sup>st</sup>, 2006 to November 30<sup>th</sup>, 2006) at the Department of Chemistry "G. Ciamician ", University of Bologna. Research project: "Synthesis and functionalization of 4-alkylidene-beta-lactams for the production of glycosyl beta-lactams active against resistant bacteria".

### **Agreements for teaching activities at the University of Bologna:**

- Organic Chemistry Laboratory for Biological Sciences, 2001/2002 (35 hours).
- Organic Chemistry I Laboratory (Degree in Chemistry), 2002/2003 (30 hours).
- Organic Chemistry I Laboratory (Bachelor Degree in Chemistry), 2005/2006 (30 hours).
- Organic Chemistry I Laboratory (Bachelor Degree in Chemistry), 2006/2007 (30 hours).
- Chemistry Laboratory (Bachelor Degree in Biotechnology), 2007/2008 (80 hours).

## **Scientific research activity**

The scientific research activity of the candidate involved several topics in the organic chemistry field:

- design and development of new asymmetric catalytic processes, in particular methodologies employing chiral catalysts based on organometallic complexes;
- study of solvent and temperature effect on the stereocontrol of the organic chemical transformations;
- use of enzymes in organic synthesis and development of innovative protocols to obtain commercially considerable products;
- synthesis and characterization of new luminescent tracers, triggered through thermal processes, in order to develop (bio)sensors with high sensitivity;
- synthesis of new chiral organocatalysts and their application in highly stereoselective processes;
- synthesis of new recyclable chiral organocatalysts;
- development of new organocatalytic enantioselective domino processes for the construction of new potentially bioactive molecular scaffolds;
- stereoselective synthesis and derivatization of biologically active compounds, at first  $\beta$ -lactam derivatives and, more recently, cycloperoxides and tetrahydropyrans with potential anti-malarial and anti-leishmanial activity.
- design and development of new photocatalyzed processes, involving metal-based complexes or organic dyes.

**COMPLETE SCIENTIFIC PUBLISHING ACTIVITY (2002-today)** from **Scopus** database:

**Documents: 58 - Citations: 1063 - h index: 21.**

(The full list of scientific publications is reported at the end of this document).

Scientific responsibility and/or participation in **international and national research projects**:

- 1) HOLDER OF THE RESEARCH GRANT: "PROGETTO GIOVANI RICERCATORI" (2001) assigned by the University of BOLOGNA. Project: "Synthesis of enzymatic inhibitors with a beta-lactam scaffold".
- 2) Participant in PRIN 2002 (Prot. 2002034485\_001) – "Design and synthesis of glycosyl-beta-lactams as new molecules with potential antibacterial activity against resistant bacterial strains".
- 3) Participant in PRIN 2004 – "Glycosyl-beta-lactams: New molecules with potential antibacterial activity against resistant strains. Design, synthesis and evaluation of *in vitro* activity".
- 4) Participant in MAE Italia-India 2012 (PGR00042) – "Design and development of new antimalarial compounds active against chloroquine-resistant *Plasmodium* strains".
- 5) Participant in FARB 2012 (RFBO128121) – "Advanced ultrasensitive multiplex diagnostic systems based on luminescence techniques".
- 6) Participant in PRIN 2015 - 20154JRJPP - LS7, "Towards multi-stage drugs to fight poverty related and neglected parasitic diseases: synthetic and natural compounds directed against Leishmania, Plasmodium and Schistosoma life stages and assessment of their mechanisms of action".
- 7) Participant in PROJECT 2016 funded by FONDAZIONE DEL MONTE DI BOLOGNA E RAVENNA - "Leishmania, an infectious agent emerging in Emilia-Romagna: Diagnostic implications and development of new drugs".
- 8) Participant in PRIN 2017 (Prot. 2017EKCS35), "Supramolecular and Nanostructured Systems for the analysis of Emerging pollutants through optical Transduction".
- 9) Participant in PROJECT 2018 funded by FONDAZIONE CASSA DI RISPARMIO IN BOLOGNA - "Study of new synthetic endoperoxides as potential drugs for Leishmaniasis".
  
- 10) Research activity agreement (3 months) funded by the company R&D INDENA S.p.A. (2013).
- 11) Scientific agreements funded by BASF Italia S.p.A. (2014-2020).
- 12) Scientific agreement funded by BIOGENERA S.p.A. (2018).

Results obtained in the development, use and marketing of **PATENTS**:

- 1) INVENTOR of the INTERNATIONAL PATENT WO2008/074717 A2 (International Application Number: PCT/EP2007/063844). Title: "Process for the preparation of chiral 2-arylpropylic alcohols". Inventors: P. GALLETTI, D. GIACOMINI, G. CAINELLI, A. QUINTAVALLA, G. GUCCIARDO.
- 2) INVENTOR of the INTERNATIONAL PATENT WO2014/024106 A1 (International Application Number: PCT/IB2013/056340). Title: "Method for the production of thermochemiluminescent silica nanoparticles and their use as markers in bioanalytic methods". Inventors: A. RODA, M. DI FUSCO, A. QUINTAVALLA, M. GUARDIGLI, M. MIRASOLI, M. LOMBARDO, C. TROMBINI.

### **National and international academic collaborations:**

As member of the research group composed by Prof. G. Cainelli, Prof. D. Giacomini, Prof. P. Galletti, and Dr. A. Quintavalla, the candidate collaborated with:

- 1) Dr. M. Gazzano, researcher at the Institute for Organic Synthesis and Photoreactivity of CNR, Bologna, Italy. Project: "Synthesis of novel 4-(2-oxo-ethylidene)-azetid-2-ones". Accomplished 2 scientific publications (see full list of scientific publications).
- 2) Research group of Prof. S. Garbisa, Department of Experimental Biomedical Sciences, Medical School of Padova, University of Padova, Italy. Project: "4-Alkylidene-azetid-2-ones: novel inhibitors of leukocyte elastase and gelatinase". Accomplished 2 scientific publications (see full list of scientific publications).
- 3) Research groups of: Prof. M. ADINOLFI, University of NAPOLI "Federico II"; Prof. G. MUSUMARRA, University of CATANIA; Prof. A. DONDONI, University of FERRARA; Prof. C. E. A. COCUZZA, University of MILANO-BICOCCA.
  - a) Project PRIN 2002 - Prot. 2002034485\_001, "Design and synthesis of glycosyl-beta-lactams as new molecules with potential antibacterial activity against resistant bacterial strains".
  - b) Project PRIN 2004 - "Glycosyl-beta-lactams: New molecules with potential antibacterial activity against resistant strains. Design, synthesis and evaluation of *in vitro* activity".
 Accomplished 4 scientific publications (see full list of scientific publications).
- 4) Research group of Prof. G. P. Spada, Department of Organic Chemistry "A. Mangini," University of Bologna, Italy. Project: "Dynamic Solvation Effects on Diastereoselective Nucleophilic Addition to Chiral Aldehydes". Accomplished 1 scientific publication (see full list of scientific publications).
- 5) Research group of Prof. F. Paradisi, Centre for Synthesis & Chemical Biology, UCD School of Chemistry & Chemical Biology, University College Dublin, Belfield, Dublin 4, Ireland. Project: "Enzymes employed in organic solvents for synthetic applications". Accomplished 1 scientific publication (see full list of scientific publications).
- 6) Research group of Prof. R. Deana, Department of Biochemistry, Padova, Italy. Project: "Inhibitory effect by 4-alkyliden-beta-lactams on human platelet activation". Accomplished 1 scientific publication (see full list of scientific publications).

As member of the research group composed by Prof. C. Trombini, Prof. M. Lombardo, and Dr. A. Quintavalla, the candidate collaborated with:

- 7) Research group of Prof. D. D. Dhavale, Department of Chemistry, Garware Research Centre, University of Pune, Pune 411007, India.

- a) Development of new organocatalysts and new organocatalyzed processes. Accomplished 2 scientific publications (see full list of scientific publications).
- b) Development of new 1,2-dioxanes with potential antimalarial activity, including MAE Italia-India 2012 - PGR00042 "Design and development of new antimalarial compounds active against chloroquine-resistant *Plasmodium* strains". Accomplished 3 scientific publications (see full list of scientific publications).
- 8) Research groups of: Prof. C. Fattorusso, Prof. E. Fattorusso, and Prof. O. Tagliatalata-Scafati, Department of Natural Compounds Chemistry, University of Napoli "Federico II", Italy; Prof. D. Taramelli, Department of Public Health, Microbiology, Virology, University of Milan, Italy. Project: "Design, Synthesis and Structure–Activity Relationship Studies of Antimalarial 1,2-Dioxanes". Accomplished 6 scientific publications (see full list of scientific publications).
- 9) Research group of Prof. M. Gruttadauria, Department of Molecular and Biomolecular Sciences and Technologies, Sec. Organic Chemistry "E. Patern", University of Palermo, Italy. Project: "Development of a biphasic homogeneous protocol for the asymmetric organocatalytic aldol reaction". Accomplished 1 scientific publication (see full list of scientific publications).
- 10) Research group of Prof. A. Roda, Department of Chemistry "G. Ciamician", University of Bologna, Italy. Project: "Development of Ultrasensitive Reagentless Thermochemiluminescent Labels for Bioanalytics". Accomplished 6 scientific publications (see full list of scientific publications) and 1 patent (see patent section).
- 11) Research groups of: Prof. A. Roda, Department of Chemistry "G. Ciamician", University of Bologna; Prof. L. Prodi, Department of Chemistry "G. Ciamician", University of Bologna; Prof. F. Paolucci, Department of Chemistry "G. Ciamician", University of Bologna. Project: FARB 2012 - RFBO128121, "Advanced ultrasensitive multiplex diagnostic systems based on luminescence techniques".
- 12) Research group of Prof. A. Bottoni, Department of Chemistry "G. Ciamician", University of Bologna, Italy. Project: "Combined Experimental and Computational Investigation on Electrosteric Activation". Accomplished 1 scientific publication (see full list of scientific publications).
- 13) Prof. M. Monari, Department of Chemistry "G. Ciamician", University of Bologna, Italy. Project: "Highly stereoselective synthesis of spirooxindoles". Accomplished 1 scientific publication selected as HOT PAPER and awarded with the INSIDE COVER (DOI: 10.1002/chem.201590138) of the journal (see full list of scientific publications).
- 14) Research groups of: Prof. S. Varani e Prof. M. P. Landini, Microbiology Unit, Department of Specialized Medicine, Diagnostics and Experimental (DIMES), University of Bologna and S. Orsola-Malpighi Polyclinic, Bologna; Prof. M. C. Re, Microbiology Unit (DIMES), University of Bologna and S. Orsola-Malpighi Polyclinic, Bologna; Dr. F. Belluti,

- Department of Pharmacy and Biotechnology (FaBiT), University of Bologna; Prof. L. Calza, Unit of Infectious Diseases, Department of Medical and Surgical Sciences (DIMEC), University of Bologna and S. Orsola-Malpighi Polyclinic, Bologna; Dr. Paolo Bassi, Unit of Infectious Diseases, AUSL Romagna-Ravenna. PROJECT 2016 funded by FONDAZIONE DEL MONTE DI BOLOGNA E RAVENNA "Leishmania, an infectious agent emerging in Emilia-Romagna: Diagnostic implications and development of new drugs".
- 15) Research groups of: Prof. BELLELLI A., University of ROMA "La Sapienza"; Prof. BRUSCHI F., University of PISA; Prof. CAMPIANI G., University of SIENA; Prof. FATTORUSSO C., University of NAPOLI "Federico II"; Prof. HABLUETZEL A. C., University of CAMERINO; Dr. RUBERTI G., CNR; Prof. TARAMELLI D., University of MILANO; Prof. TURRINI F. M., University of TORINO. Project PRIN 2015 - 20154JRJPP - LS7, "Towards multi-stage drugs to fight poverty related and neglected parasitic diseases: synthetic and natural compounds directed against Leishmania, Plasmodium and Schistosoma life stages and assessment of their mechanisms of action". Accomplished 1 scientific publication (see full list of scientific publications).
- 16) Research groups of: Prof. PRODI L., Department of Chemistry "G. Ciamician", University of Bologna; Prof. PAOLESSE R., University of Rome "Tor Vergata"; Prof. CALTAGIRONE C., University of CAGLIARI; Prof. FUSI V., University of Urbino "Carlo Bo"; Prof. BENCINI A., University of Florence; Prof. TAGLIETTI A. M., University of Pavia. Project PRIN 2017 - 2017EKCS35 - "SUNSET - SUPramolecular and Nanostructured Systems for the analysis of Emerging pollutants through optical Transduction".
- 17) Research groups of: Prof. S. Varani, Microbiology Unit, Department of Specialized Medicine, Diagnostics and Experimental (DIMES), University of Bologna and S. Orsola-Malpighi Polyclinic, Bologna. PROJECT 2018 funded by FONDAZIONE CASSA DI RISPARMIO IN BOLOGNA - "Study of new synthetic endoperoxides as potential drugs for Leishmaniasis".
- 18) Research group of Prof. M. Prato, Department of Chemical and Pharmaceutical Sciences, University of Trieste, Italy. Project: "Synthesis of Recyclable Chiral Organocatalysts Anchored to [60]Fullerene". Accomplished 1 scientific publication (see full list of scientific publications).
- 19) Research groups of Prof. P. G. Cozzi and Prof. P. Ceroni, Department of Chemistry "G. Ciamician", University of Bologna. Project: "Design, Synthesis and Application of new bifunctional photocatalysts", accomplished 1 scientific publication.

**Collaboration with private companies:**

As member of the research group composed by Prof. D. Giacomini, Prof. P. Galletti, and Dr. A. Quintavalla, the candidate collaborated with:

- 1) 2006-2008: R&D SIGMA-TAU S.p.A., Via Pontina, km 30 400, 00040 Pomezia, Italy. Project: "Azetidinones as selective HDAC inhibitors". Accomplished 2 scientific publications (see full list of scientific publications).

As member of the research group composed by Prof. C. Trombini, Prof. M. Lombardo, and Dr. A. Quintavalla, the candidate collaborated with:

- 2) 2013-2015: R&D INDENA S.p.A., Viale Ortles 12, 20139 Milano, Italy. Project: "Investigation on new synthetic approaches for the preparation of Ortataxel and Homoharringtonine".
- 3) 2013: Research activity agreement (3 months) funded by the company R&D INDENA S.p.A..
- 4) 2014-2020: Scientific agreements funded by BASF Italia S.p.A..
- 5) 2018: Scientific agreement funded by BIOGENERA S.p.A..
- 6) 2019: supervisor of a postgraduate internship at BASF Italia S.p.A.

### Organization of scientific congresses:

MEMBER OF THE ORGANIZING COMMITTEE of:

- 1) Workshop "Perspective and Future Research in Malaria Management", Bologna, December 18<sup>th</sup>, **2013**.
- 2) XXXVI Convegno Nazionale della Divisione di Chimica Organica della Società Chimica Italiana - CDCO 2015, Bologna, September 13-17, **2015** (Annual meeting of the Organic Chemistry Division of Italian Chemical Society - SCI).
- 3) Workshop "MALARIA AND NEGLECTED PARASITIC DISEASES: CORE SCIENCE AND PERSPECTIVES", Bologna, March 2-3, **2018**.
- 4) 18<sup>th</sup> Symposium "Scientific days of the Consortium CINMPIS", Bologna, February 18-19, **2019**.

### Participation in scientific conferences in Italy or abroad:

- 1) XXVII Convegno Nazionale della Divisione di Chimica Organica della Società Chimica Italiana (National Conference of the Organic Chemistry Division of the Italian Chemical Society), Trieste, Italy, September 3-7, **2001**. Poster communication title: "Stereocontrolled Synthesis of 3-hydroxyethyl-4-alkyliden-azetid-2-ones".
- 2) 3<sup>rd</sup> International School of Organometallic Chemistry, Camerino, Italy, September 9-13, **2001**. Poster communication title: "A stereocontrolled synthesis of 3-hydroxyethyl-4-alkyliden-azetid-2-ones".
- 3) XXVII Summer School "A. Corbella", Gargnano (BS), Italy, June 17-21, **2002**.
- 4) XXVIII Convegno Nazionale della Divisione di Chimica Organica della Società Chimica Italiana (National Conference of the Organic Chemistry Division of the Italian Chemical Society), Roma, Italy, September 16-20, **2002**. Poster communication title: "Stereocontrolled synthesis of 4-alkyliden-azetid-2-ones".
- 5) II Sigma Aldrich Young Chemists Symposium, Riccione (RN), Italy, October 7-8, **2002**. Poster communication title: "Stereocontrolled synthesis of 4-alkyliden-azetid-2-ones".
- 6) II Laboratory of Synthetic Methodologies in Pharmaceutical Chemistry, Siena, Italy, February 16-20, **2003**.
- 7) XXVIII Summer School "A. Corbella", Gargnano (BS), Italy, June 16-20, **2003**. Participation with fellowship. **Oral communication** title: "Synthesis of 4-alkyliden-beta-lactams with potential inhibitory activity".
- 8) XXIII Advanced Course in Pharmaceutical Chemistry and National Seminar for PhD Students "E. Duranti", Urbino, Italy, June 30<sup>th</sup> to July 4<sup>th</sup>, **2003**.
- 9) Ischia Advanced School of Organic Chemistry, IASOC 2004, Ischia Porto, Napoli, Italy, September 18-23, **2004**. Poster communication title: "Synthesis and biological evaluation of new 4-alkyliden-azetid-2-ones".
- 10) "New Methodologies and Techniques in Organic Chemistry: Sustainable Development in a Secure Environment", NeMeTOC 2005, Certosa di Pontignano, Siena, Italy, October 14-23, **2005**. Poster

- communication title: "Combining beta-lactam scaffold with polyphenols: synthesis of new enzymatic inhibitors".
- 11) 1<sup>st</sup> European Chemistry Congress, Budapest, Hungary, August 27-31, **2006**. Poster communication title: "Combining  $\beta$ -lactam scaffold with polyphenols: synthesis of new enzymatic inhibitors".
  - 12) Summer School "Computational Approaches in Drug Design", Bologna, Italy, October 23-25, **2006**.
  - 13) "Foldamers: Design, Synthesis and Applications", Bologna, Italy, October 6-8, **2010**.
  - 14) "Organocatalysis. New Methodologies for Sustainable Chemistry". CATAFLU.OR Symposium, Bologna, Italy, March 24-25, **2011**. Poster communication title: "Enantioselective Conjugate Addition of Nitroalkanes to Alkylidenemalonates Promoted by Thiourea-based Bifunctional Organocatalysts".
  - 15) Within Seminars for the PhD School in Molecular Medicine and Immunology Days in Milano, Seminar: "The challenge to malaria: an issue of alliance between science and society", Milano, Italy, April 28<sup>th</sup>, **2011**.
  - 16) Organic Synthesis Workshop "Push the Envelope in the C-H activation methodologies... and beyond", Bologna, Italy, January 24<sup>th</sup>, **2012**.
  - 17) International Workshop "Old and new drugs against malaria: the challenge of fighting parasite drug resistance and transmission", Bologna, Italy, November 26<sup>th</sup>, **2012**.
  - 18) Workshop "Perspective and Future Research in Malaria Management", Bologna, December 18<sup>th</sup>, **2013**.
  - 19) Meeting "Quo Vadis Synthesis?", Roma, Italy, May 19-20, **2014**.
  - 20) 14<sup>th</sup> Belgian Organic Synthesis Symposium, BOSS XIV, Louvain-La-Neuve, Belgium, July 13-18, **2014**. Poster communication title: "Bifunctional Thioureas as Catalysts for Nitroalkanes Initiated Tandem Reactions".
  - 21) 2014 Edition of the "Organic Chemistry Day in Pavia", Pavia, Italy, October 15<sup>th</sup>, **2014**.
  - 22) XXXVI Convegno Nazionale della Divisione di Chimica Organica della Società Chimica Italiana - CDCO 2015 (Annual meeting of the Organic Chemistry Division of Italian Chemical Society - SCI), Bologna, Italy, September 13-17, **2015**.
  - 23) ICIQ Symposium, "LIGHTS ON CHEMISTRY", Tarragona, Spain, October 1-2, **2015**.
  - 24) XI National Congress of the Italian Society of Pharmaceutical Microbiology, Bologna, Italy, June 9-10, **2016**.
  - 25) XXXVII Convegno Nazionale della Divisione di Chimica Organica della Società Chimica Italiana - CDCO 2016 (Annual meeting of the Organic Chemistry Division of Italian Chemical Society - SCI), Venezia-Mestre, Italy, September 18-22, **2016**. **Oral communication** title: "Enantioselective Organocatalytic Approaches to Challenging Quaternary Stereocenters: Synthesis of Spirooxindoles and Fluorinated Pyrrolidines".

- 26) 2017 ANNUAL MEETING OF THE ITALIAN MALARIA NETWORK, Roma, Italy, January 19-20, **2017**. Poster communication title: "3-Methoxy-1,2-Dioxanes as Antimalarial Agents against Chloroquine-Sensitive and Chloroquine-Resistant Strains of *Plasmodium falciparum*".
- 27) Workshop "Chemists for Biotechnologies", organized by the Interdivisional Biotechnology Group of the Italian Chemical Society. February 23<sup>rd</sup>, **2018**, Bologna, Italy.
- 28) Workshop "MALARIA AND NEGLECTED PARASITIC DISEASES: CORE SCIENCE AND PERSPECTIVES", Bologna, March 2-3, **2018**. Poster communication title: "3-Methoxy-1,2-Dioxanes as Antimalarial Agents against Chloroquine-Sensitive and Chloroquine-Resistant Strains of *Plasmodium falciparum*".
- 29) XXII International Conference on Organic Synthesis – 22-ICOS, Florence, September 16-21, **2018**. Poster communication title: "Enantioselective Organocatalytic Approaches to Challenging Densely Functionalized Cyclic Systems".
- 30) 18th Symposium "Scientific days of the Consortium CINMPIS", Bologna, February 18-19, **2019**.
- 31) IV-China-Italy-Symposium-Organic-Chemistry (CISOC), Bologna, April 16-17, **2019**. **Oral communication** title: "Enantioselective Organocatalytic Approaches to Challenging Densely Functionalized Spirocyclic Systems".
- 32) 21<sup>st</sup> European Symposium on Organic Chemistry (ESOC2019), Wien, July 14-18, **2019**. **Oral communication** title: "1,2-DIOXANES AS POTENTIAL ANTI-LEISHMANIAL DRUGS".
- 33) Symposium-PRIN-Kick-off (S-PRIN-K), Bologna, November 7, **2019**.
- 34) Final Meeting PRIN 2015, Rome, January 29, **2020**. **Oral communication** title: "Synthetic Substituted 1,2-Dioxanes and Tetrahydropyrans as Potential Agents Against Human Leishmaniasis".
- 35) Workshop "Chemical Research for the Health Sector", Bologna, January 31, **2020**.
- 36) Virtual Workshop "Green Chemistry Days":  
April 27, **2021**: "CO<sub>2</sub> as a strategic green carbon source for the synthesis of target materials".  
May 4, **2021**: "Ultrasound as a key modern tool for green synthesis and processing".  
May 11, **2021**: "Microalgae, a source for future biobased green processes".

**REVIEWER** (2012-today) for the following international scientific journals:

- 1) ADVANCED SYNTHESIS & CATALYSIS (Wiley)
- 2) ORGANIC LETTERS (ACS Publications)
- 3) STUDIES IN NATURAL PRODUCTS CHEMISTRY (Elsevier Science Publishers)
- 4) CHEMICAL COMMUNICATIONS (Royal Society of Chemistry)
- 5) TETRAHEDRON LETTERS (Elsevier)
- 6) CHIRALITY (Wiley)
- 7) ACS CATALYSIS (ACS Publications)
- 8) CHEMISTRY - A EUROPEAN JOURNAL (Wiley)
- 9) THE JOURNAL OF ORGANIC CHEMISTRY (ACS Publications)
- 10) MOLECULES (MDPI)
- 11) SYNLETT (Georg Thieme Publishers)
- 12) CURRENT ORGANIC CHEMISTRY (Bentham Science)
- 13) MINI-REVIEWS IN MEDICINAL CHEMISTRY (Bentham Science)
- 14) RECENT PATENTS ON CATALYSIS (Bentham Science)
- 15) LETTERS IN ORGANIC CHEMISTRY (Bentham Science)
- 16) CHEMISTRY SELECT (Wiley)
- 17) ORGANIC & BIOMOLECULAR CHEMISTRY (Royal Society of Chemistry)
- 18) CHINESE JOURNAL OF CHEMISTRY (Wiley)
- 19) SYNTHESIS (Georg Thieme Publishers)
- 20) NATURE COMMUNICATIONS (Springer Nature Publishing AG)
- 21) NEW JOURNAL OF CHEMISTRY (Royal Society of Chemistry)
- 22) CATALYSTS (MDPI)
- 23) CHEMCATCHEM (Wiley)

### Awards for scientific activity:

- 1) Corresponding Author of the **INVITED REVIEW** from the international scientific journal CURRENT ORGANOCATALYSIS. Article: *Current Organocatalysis* **2014**, *1*, 107-171. The article was selected as one of the 3 "Editor's Choice" in 2014 and it was included among the "Open Access Articles".
- 2) Corresponding Author of the paper: *Chem. Eur. J.* **2015**, *21*, 11038-11049, selected as **HOT PAPER (TOP 10%)** and awarded with the **INSIDE COVER** (DOI:10.1002/chem.201590138) of the journal. The article was also selected to be highlighted on the Facebook page of the scientific journal Chemistry – A European Journal.
- 3) Corresponding Author of the **INVITED ARTICLE** from the international scientific journal CHEMISTRY - A EUROPEAN JOURNAL, as part of the **SPECIAL ISSUE "WOMEN IN CHEMISTRY" 2016**. Article: *Chem. Eur. J.* **2016**, *22*, 3865-3872.
- 4) Corresponding Author of the **INVITED REVIEW** from the international scientific journal CURRENT MEDICINAL CHEMISTRY. Article: *Current Medicinal Chemistry* **2018**, *25* (8), 917-962. DOI: 10.2174/0929867324666171106162259.
- 5) **HIGHLIGHTS**: Author and co-author of scientific publications selected as important contributions by the Editors of international scientific journals:
  - a) "Enantioselective Desymmetrizations Promoted by Bifunctional Organocatalysts" *Current Organocatalysis* **2014**, *1*, 107-171. Highlighted in *ChemInform* **2015**, *46*, issue 18.
  - b) "Optimized Synthesis and Antimalarial Activity of 1,2-Dioxane-4-carboxamides" *Eur. J. Org. Chem.* **2014**, 1607-1614. Highlighted in *Chem. Eur. J.* **2014**, *19*, 2404-2407.
  - c) "Properties and Reactivity of Conformationally Constrained Bicyclic Diarylprolinol Silyl Ethers as Organocatalysts" *Eur. J. Org. Chem.* **2014**, 5946-5953. Highlighted in *Chem. Eur. J.* **2014**, *19*, 13058-13061.
  - d) "A New Henry/Michael/Retro-Henry/Henry Domino Sequence Promoted by Bifunctional Organocatalysts" *Adv. Synth. Catal.* **2013**, *355*, 938-946. Highlighted in "Organocatalyzed C-C Ring Construction", D. F. Taber *Org. Chem. Highlights* **2013**, December 16 ([www.organic-chemistry.org/Highlights/2013/16December.shtm](http://www.organic-chemistry.org/Highlights/2013/16December.shtm)).
  - e) "A Liquid-Liquid Biphasic Homogeneous Organocatalytic Aldol Protocol Based on the Use of a Silica Gel Bound Multilayered Ionic Liquid Phase" *ChemCatChem* **2012**, *4*, 1000-1006. Highlighted in *Angew. Chem.* **2012**, *124*, 6662-6664 and in *Chem. Eur. J.* **2012**, *18*, 8564-8566.
  - f) "Azetidiones as Zinc-Binding Groups to Design Selective HDAC8 Inhibitors" *ChemMedChem* **2009**, *4*, 1991-2001. Highlighted in *Chem. Eur. J.* **2009**, *15*, 12922-12924.
  - g) "Highly Efficient Asymmetric Reduction of Arylpropionic Aldehydes by Horse Liver Alcohol Dehydrogenase through Dynamic Kinetic Resolution" *Chem. Commun.* **2007**, 4038-4040. Highlighted in *Synfacts* **2007**, *11*, 1203-1203.

## **Teaching activity**

**2017-2018:** TEACHER of the second teaching unit (2 CFU, 22 hours) of the Organic Chemistry Course for the Degree in Natural Sciences (CS: 8016), Faculty of Sciences, University of Bologna.

**2018-2021:** TEACHER of the course of Laboratory of Organic Chemistry (Course integrated with Organic Chemistry 2 Course), 6 CFU, 68 hours, CS: 8006 – Degree in Chemistry and Materials Chemistry, Faculty of Sciences, University of Bologna.

**2020:** TEACHER of the Organic Chemistry Course for PhD students. Lecture title: "Synthesis Exploiting Radicals: Recent Advances and Applications", 2 hours. PhD in Chemical Sciences of the University of Bologna (2018-2019).

**CO-SUPERVISOR of a PhD in Chemical Sciences** of the University of Bologna (XXX Cycle, 2014-2017). Student: L. A. Andronico. Research topic: "Synthesis and characterization of new luminescent tracers, triggered by thermal or mechanical processes, in order to develop (bio)sensors with high sensitivity". Supervisor: Prof. A. Roda.

**TUTOR for the Degree Thesis in Chemistry** of the University of Bologna (2017-today):  
Bachelor Degree in Chemistry (7 students)  
Master Degree in Chemistry (3 student)

**CO-TUTOR for the Degree Thesis in Chemistry** of the University of Bologna (2010-today):  
Master Degree in Chemistry (12 students)  
Bachelor Degree in Chemistry (5 students)

**Member of the Examination Committee for a PhD thesis** of a candidate of the Indian Institute of Science Education and Research (IISER), Pune, India.

**Referee of an application for a HFSP (Human Frontier Science Program) fellowship.**

*2009-2016:* As Graduate Technician, **assistant to laboratory teaching activities** of organic chemistry area at the Department of Chemistry "G. Ciamician", for the courses of the Degree in Chemistry and other scientific Degrees of the University of Bologna.

*2015-2016:* **Assistant to laboratory teaching activity** of the course "Laboratory Skills", INTERNATIONAL DEGREE "Erasmus Mundus Master Course in Chemical Innovation and Regulation - EMMC-ChIR" (European Master Diploma). Involved Institutions: University of Algarve (Portugal), University of Barcelona (Spain), University of Bologna (Italy), Heriot Watt University (UK).

**Agreements for teaching activities** at the University of Bologna:

- Organic Chemistry Laboratory for Biological Sciences, 2001/2002 (35 hours).
- Organic Chemistry I Laboratory (Degree in Chemistry), 2002/2003 (30 hours).
- Organic Chemistry I Laboratory (Bachelor Degree in Chemistry), 2005/2006 (30 hours).
- Organic Chemistry I Laboratory (Bachelor Degree in Chemistry), 2006/2007 (30 hours).
- Chemistry Laboratory (Bachelor Degree in Biotechnology), 2007/2008 (80 hours).

**Additional experiences related to the scientific disciplinary field for which the application is submitted**

Member of Organic Chemistry Division of the ITALIAN CHEMICAL SOCIETY – SCI (Viale Liegi 48c, I-00198 ROMA).

Member of ITALIAN MALARIA NETWORK (IMN)- CENTRO INTERUNIVERSITARIO DI RICERCHE SULLA MALARIA (CIRM), Department of Experimental Medicine and Biochemical Sciences (Via del Giochetto, 06126 PERUGIA).

Member of NATIONAL INTERUNIVERSITY CONSORTIUM "METHODOLOGIES AND INNOVATIVE PROCESSES FOR SYNTHESIS" C.I.N.M.P.I.S. (University of Bari Palazzo Ateneo, Piazza Umberto I, 1 70100 BARI).

Member of Interdepartmental Center Alma Mater Research Institute on Global Challenges and Climate Change (Alma Climate).

Member of Interdepartmental Research Center Alma Mater Institute on Healthy Planet (Alma Healthy Planet).

2004-2006: SCIENTIFIC DIVULGATION ACTIVITY within the project "Conoscere la Chimica". Production of spectacular scientific experiments dedicated to students of primary and secondary schools.  
(<http://www.chimica.unibo.it/it/conoscere-la-chimica>).

## **Complete list of scientific publications**

- 1)** "Synthesis of novel 4-(1-ethoxycarbonyl-methylidene)-azetid-2-ones *via* a Lewis acid-catalyzed reaction of ethyl diazoacetate". Gianfranco Cainelli, Paola Galletti, Massimo Gazzano, Daria Giacomini, Arianna Quintavalla, *Tetrahedron Letters* **2002**, 233-235. DOI: 10.1016/S0040-4039(01)02108-6.
- 2)** "Diastereoselectivity in the Allylation of N-Trialkylsilylimines of O-Protected (2S)-Lactal - Some Unexpected Results". Gianfranco Cainelli, Daria Giacomini, Paola Galletti, Arianna Quintavalla, *European Journal of Organic Chemistry* **2002**, 3153-3161.
- 3)** "Dynamic solvation effects on the *endo/exo* selectivity of the Diels-Alder reaction". Gianfranco Cainelli, Paola Galletti, Daria Giacomini, Arianna Quintavalla, *Tetrahedron Letters* **2003**, 93-96. DOI: 10.1016/S0040-4039(02)02477-2.
- 4)** "Solvent and Temperature Effects on Diastereofacial Selectivity: Amines as co-Solvents in *n*-Butyllithium Addition to  $\alpha$ -Chiral Aldehydes", Gianfranco Cainelli, Daria Giacomini, Paola Galletti, Arianna Quintavalla, *European Journal of Organic Chemistry* **2003**, 1993-2000. DOI: 10.1002/ejoc.200200579.
- 5)** "Synthesis of novel 4-(2-oxo-ethylidene)-azetid-2-ones by a Lewis acid mediated reaction of acyldiazo compounds". Gianfranco Cainelli, Daria Giacomini, Paola Galletti, Arianna Quintavalla, *European Journal of Organic Chemistry* **2003**, 1765-1774. DOI: 10.1002/ejoc.200200702.
- 6)** "N-Acylation of 4-alkylidene- $\beta$ -lactams: unexpected results". Gianfranco Cainelli, Paola Galletti, Massimo Gazzano, Daria Giacomini, Arianna Quintavalla, *Tetrahedron Letters*, **2003**, 6269-6272. DOI: 10.1016/S0040-4039(03)01533-8.
- 7)** "Chemo- and enzyme-catalyzed reactions revealing a common temperature-dependent dynamic solvent effect on enantioselectivity". Cainelli Gianfranco; Galletti Paola; Giacomini Daria; Gualandi Andrea; Quintavalla Arianna, *Helvetica Chimica Acta* **2003**, 3548-3559. DOI: 10.1002/hlca.200390299.
- 8)** "4-Alkylidene-azetid-2-ones: novel inhibitors of leukocyte elastase and gelatinase". Cainelli Gianfranco; Galletti Paola; Garbisa Spiridione; Giacomini Daria; Sartor Luigi; Quintavalla Arianna, *Bioorganic & Medicinal Chemistry* **2003**, 5391-5399. DOI: 10.1016/j.bmc.2003.09.035.
- 9)** "Chiral aldehydes in hydrocarbons: diastereoselective nucleophilic addition, NMR, and CD spectroscopy reveal dynamic solvation effects". Cainelli Gianfranco; Galletti Paola; Pieraccini Silvia; Quintavalla Arianna; Giacomini Daria; Spada Gian Piero, *CHIRALITY* **2004**, 50-56. DOI: 10.1002/chir.10310.

- 10)** "Solvation-dependent diastereofacial selectivity: addition of lithioacetonitrile to 2-phenylpropanal" Cainelli, Gianfranco; Galletti, Paola; Giacomini, Daria; Gualandi, Andrea; Quintavalla, Arianna. *Tetrahedron* **2005**, 69-75. DOI: 10.1016/j.tet.2004.10.062.
- 11)** "4-Alkyliden- $\beta$ -lactams conjugated to polyphenols: Synthesis and inhibitory activity". Cainelli, Gianfranco; Galletti, Paola; Garbisa, Spiridione; Giacomini, Daria; Sartor, Luigi; Quintavalla, Arianna *Bioorganic & Medicinal Chemistry* **2005**, 6120-6132. DOI: 10.1016/j.bmc.2005.06.041.
- 12)** "Toward novel glyconjugates: Efficient synthesis of glycosylated 4-alkylidene- $\beta$ -lactams". Adinolfi, Matteo; Galletti, Paola; Giacomini, Daria; Iadonisi, Alfonso; Quintavalla, Arianna; Ravidà Alessandra, *European Journal of Organic Chemistry* **2006**, 69-73. DOI: 10.1002/ejoc.200500665.
- 13)** "Inhibition of leukocyte elastase, polymorphonuclear chemoinvasion, and inflammation-triggered pulmonary fibrosis by a 4-alkyliden- $\beta$ -lactam with a galloyl moiety". Dell'Aica, Isabella; Sartor, Luigi; Galletti, Paola; Giacomini, Daria; Quintavalla, Arianna; Calabrese, Fiorella; Giacometti, Cinzia; Brunetta, Enrico; Piazza, Francesco; Agostini, Carlo; Garbisa, Spiridione, *Journal of Pharmacology and Experimental Therapeutics* **2006**, 539-546. DOI: 10.1124/jpet.105.096248.
- 14)** "Design, Synthesis and Biological Evaluation of 4-alkyliden-beta lactams: new products with a promising antibiotic activity against resistant bacteria". Cainelli Gianfranco, Caltabiano Gianluigi, Cocuzza Clementina E. A., Fortuna Cosimo G., Galletti Paola; Giacomini Daria, Musumarra Giuseppe, Quintavalla Arianna, *Journal of Medicinal Chemistry* **2006**, 2804-2811. DOI: 10.1021/jm0580510.
- 15)** "Vinyllic Halogenation in 4-Alkylidenazetid-2-ones". Gianfranco Cainelli, Paola Galletti, Daria Giacomini, Sebastiano Licciulli, Arianna Quintavalla, *European Journal of Organic Chemistry* **2007**, 2526-2533. DOI: 10.1002/ejoc.200601095.
- 16)** "Inhibitory effect by new monocyclic 4-alkyliden-beta-lactam compounds on human platelet activation". Pavanetto, Martina; Zarpellon, Alessandro; Giacomini, Daria; Galletti, Paola; Quintavalla, Arianna; Cainelli, Gianfranco; Folda, Alessandra; Scutari, Guido; Deana, Renzo, *Platelets* **2007**, 357-364. DOI: 10.1080/09537100601100796.
- 17)** "Titanium-catalyzed Reformatsky-type reaction". Sgreccia, Laura; Bandini, Marco; Morganti, Stefano; Quintavalla, Arianna; Umani-Ronchi, Achille; Cozzi, Pier Giorgio. *Journal of Organometallic Chemistry* **2007**, 3191-3197. DOI: 10.1016/j.jorganchem.2007.02.037.
- 18)** "Highly Efficient Asymmetric Reduction of Arylpropionic-aldehydes by Horse Liver Alcohol-Dehydrogenase Through Dynamic Kinetic Resolution".

Daria Giacomini, Paola Galletti, Arianna Quintavalla, Francesca Paradisi, Gabriele Gucciardo. *Chemical Communications* **2007**, 4038-4040. DOI: 10.1039/b712290j.

**19)** "Synthesis of the Mannopeptimycin Disaccharide and Its Conjugation with 4-Alkylidene- $\beta$ -lactams". Matteo Adinolfi, Daria Giacomini, Alfonso Iadonisi, Arianna Quintavalla, Silvia Valerio. *European Journal of Organic Chemistry* **2008**, 2895-2899. DOI: 10.1002/ejoc.200701159.

**20)** "Halodecarboxylation Reaction of 4-Alkylidene- $\beta$ -lactams". Paola Galletti, Arianna Quintavalla, Caterina Ventrice, Daria Giacomini. *European Journal of Organic Chemistry* **2009**, 4541-4547. DOI: 10.1002/ejoc.200900558.

**21)** "Highly Efficient Ion-Tagged Catalyst for the Enantioselective Michael Addition of Aldehydes to Nitroalkenes". Marco Lombardo, Michel Chiarucci, Arianna Quintavalla, Claudio Trombini. *Advanced Synthesis & Catalysis* **2009**, 2801-2806. DOI: 10.1002/adsc.200900599.

**22)** "Azetidiones as Zinc-Binding Groups to Design Selective HDAC8 Inhibitors". Paola Galletti, Arianna Quintavalla, Caterina Ventrice, Giuseppe Giannini, Walter Cabri, Sergio Penco, Grazia Gallo, Silvia Vincenti, Daria Giacomini. *ChemMedChem* **2009**, 1991-2001. DOI: 10.1002/cmdc.200900309.

**23)** "2-Azetidinones: synthesis of new bis(indolyl)butyl- $\beta$ -lactams". Paola Galletti, Arianna Quintavalla, Caterina Ventrice, Giuseppe Giannini, Walter Cabri, Daria Giacomini. *New Journal of Chemistry* **2010**, 2861-2866. DOI: 10.1039/c0nj00463d.

**24)** "Chemoenzymatic synthesis of (2S)-2-arylpropanols through a dynamic kinetic resolution of 2-arylpropanals with alcohol dehydrogenases". P. Galletti, E. Emer, G. Gucciardo, A. Quintavalla, M. Pori, D. Giacomini, *ORGANIC & BIOMOLECULAR CHEMISTRY* **2010**, 8, 4117-4123. DOI: 10.1039/c005098a.

**25)** "Multiphase Homogeneous Catalysis: Common Procedures and Recent Applications". M. Lombardo, A. Quintavalla, M. Chiarucci, C. Trombini, *SYNLETT* **2010**, 1746-1765. DOI: 10.1055/s-0030-1258114.

**26)** "Antibacterial agents and Cystic Fibrosis: Synthesis and antimicrobial evaluation of a series of N-thiomethyl-azetidiones". P. Galletti, C. E. A. Cocuzza, M. Pori, A. Quintavalla, R. Musumeci, D. Giacomini. *CHEMMEDCHEM* **2011**, 6, 1919-1927. DOI: 10.1002/cmdc.201100282.

**27)** "A New Class of Antimalarial Dioxanes Obtained Through a Simple Two-Step Synthetic Approach: Rational Design and Structure-Activity Relationship Studies". M. Persico, A. Quintavalla, F. Rondinelli, C. Trombini, M. Lombardo, C. Fattorusso, V. Azzarito, D. Taramelli, S. Papini, Y. Corbett, G. Chianese, E.

Fattorusso, O. Tagliatalata-Scafati. *JOURNAL OF MEDICINAL CHEMISTRY* **2011**, *54*, 8526-8540. DOI: 10.1021/jm201056j.

**28)** "A New Robust and Efficient Ion-Tagged Proline Catalyst Carrying an Amide Spacer, for the Asymmetric Aldol Reaction". E. Montroni, S. P. Sanap, M. Lombardo, A. Quintavalla, C. Trombini, D. D. Dhavale. *ADVANCED SYNTHESIS & CATALYSIS* **2011**, *353*, 3234-3240. DOI: 10.1002/adsc.201100595.

**29)** "A New Family of Conformationally Constrained Bicyclic Diarylprolinol Silyl Ethers as Organocatalysts". M. Lombardo, E. Montroni, A. Quintavalla, C. Trombini. *ADVANCED SYNTHESIS & CATALYSIS* **2012**, *354*, 3428-3434. DOI: 10.1002/adsc.201200922.

**30)** "Dioxetane-Doped Silica Nanoparticles as Ultrasensitive Reagentless Thermochemiluminescent Labels for Bioanalytics". A. Roda, M. Di Fusco, **A. Quintavalla\***, M. Guardigli, M. Mirasoli, M. Lombardo, C. Trombini. *ANALYTICAL CHEMISTRY* **2012**, *84*, 9913-9919. DOI: 10.1021/ac302306u.

**31)** "A Liquid-Liquid Biphasic Homogeneous Organocatalytic Aldol Protocol Based on the Use of a Silica Gel Bound Multilayered Ionic Liquid Phase". E. Montroni, M. Lombardo, A. Quintavalla, C. Trombini, M. Gruttadauria, F. Giacalone. *CHEMCATCHEM* **2012**, *4*, 1000-1006. DOI: 10.1002/cctc.201200125.

**32)** "Enantioselective Conjugate Addition of Nitroalkanes to Alkylidenemalonates Promoted by Thiourea-based Bifunctional Organocatalysts". M. Chiarucci, M. Lombardo, C. Trombini, **A. Quintavalla\***. *ADVANCED SYNTHESIS & CATALYSIS* **2012**, *354*, 364-370. DOI: 10.1002/adsc.201100732.

**33)** "Organocatalytic Conjugate Addition of Nitroalkanes to 3-Ylidene Oxindoles: a Stereocontrolled Diversity Oriented Route to Oxindole Derivatives". **Quintavalla A.\***, Lanza F., Montroni E., Lombardo M., Trombini C.. *JOURNAL OF ORGANIC CHEMISTRY* **2013**, *78*, 12049-12064. DOI: 10.1021/jo402099p.

**34)** "Electrosteric Activation by using Ion-Tagged Prolines: A Combined Experimental and Computational Investigation". A. Bottoni, M. Lombardo, G. P. Miscione, E. Montroni, A. Quintavalla, C. Trombini. *CHEMCATCHEM* **2013**, *5*, 2913-2924. DOI: 10.1002/cctc.201300399.

**35)** "Further Optimization of Plakortin Pharmacophore: Structurally Simple 4-Oxymethyl-1,2-Dioxanes with Promising Antimalarial Activity". Persico M., Parapini S., Chianese G., Fattorusso C., Lombardo M., Petrizza L., **Quintavalla A.\***, Rondinelli F., Basilico N., Taramelli D., Trombini C., Fattorusso E., Tagliatalata-Scafati O.. *EUROPEAN JOURNAL OF MEDICINAL CHEMISTRY* **2013**, *70*, 875-886. DOI: 10.1016/j.ejmech.2013.10.050.

- 36)** "Preparation and characterization of thermochemiluminescent acridine-containing 1,2 dioxetanes, as promising ultrasensitive labels in bioanalysis". Di Fusco M., **Quintavalla A.\***, Trombini C., Lombardo M., Roda A., Guardigli M., Mirasoli M.. *JOURNAL OF ORGANIC CHEMISTRY* **2013**, 78, 11238-11246. DOI: 10.1021/jo401683r.
- 37)** "A New Henry/Michael/Retro-Henry/Henry Domino Sequence Promoted by Bifunctional Organocatalysts". **A. Quintavalla\***, M. Lombardo, S. P. Sanap, C. Trombini. *ADVANCED SYNTHESIS & CATALYSIS* **2013**, 355, 938-946. DOI: 10.1002/adsc.201201135.
- 38)** "Properties and Reactivity of Conformationally Constrained Bicyclic Diarylprolinol Silyl Ethers as Organocatalysts". M. Lombardo, L. Cerisoli, E. Manoni, E. Montroni, A. Quintavalla, C. Trombini. *Eur. J. Org. Chem.* **2014**, 5946–5953. DOI: 10.1002/ejoc.201402732.
- 39)** "Optimized Synthesis and Antimalarial Activity of 1,2-Dioxane-4-carboxamides". M. Lombardo, D. P. Sonawane, A. Quintavalla, C. Trombini, D. D. Dhavale, D. Taramelli, Y. Corbett, F. Rondinelli, C. Fattorusso, M. Persico, O. Taglialatela-Scafati. *Eur. J. Org. Chem.* **2014**, 1607–1614. DOI: 10.1002/ejoc.201301394.
- 40)** "Enantioselective Desymmetrizations Promoted by Bifunctional Organocatalysts". **A. Quintavalla\***, L. Cerisoli, E. Montroni. *Current Organocatalysis* **2014**, 1, 107-171. DOI: 10.2174/2213337201666141003222456.
- 41)** "Organically modified silica nanoparticles doped with new acridine-1,2-dioxetane analogues as thermochemiluminescence reagentless labels for ultrasensitive immunoassays". M. Di Fusco, **A. Quintavalla\***, M. Lombardo, M. Guardigli, M. Mirasoli, C. Trombini, A. Roda. *Anal. Bioanal. Chem.* **2015**, 407, 1567–1576. DOI: 10.1007/s00216-014-8406-3.
- 42)** "Highly Stereoselective [4+2] and [3+2] Spiroannulations of 2-(2-Oxoindolin-3-ylidene)acetic Esters Catalyzed by Bifunctional Thioureas". M. Monari, E. Montroni, A. Nitti, M. Lombardo, C. Trombini, **A. Quintavalla\***. *Chem. Eur. J.* **2015**, 21, 11038-11049. DOI: 10.1002/chem.201500676.
- 43)** "New antimalarial 3-methoxy-1,2-dioxanes: optimization of cellular pharmacokinetics and pharmacodynamics properties by incorporation of amino and N-heterocyclic moieties at C4". Sonawane, D. P.; Persico, M.; Corbett, Y.; Chianese, G.; Di Dato, A.; Fattorusso, C.; Taglialatela-Scafati, O.; Taramelli, D.; Trombini, C.; Dhavale, D. D.; Quintavalla, A.; Lombardo, M.. *RSC ADVANCES* **2015**, 5, 72995-73010. DOI: 10.1039/c5ra10785g.
- 44)** "D-Glucose-Derived 1,2,4-Trioxepanes: Synthesis, Conformational Study, and Antimalarial Activity". Sonawane, D. P.; Corbett, Y.; Dhavale, D. D.;

Taramelli, D.; Trombini, C.; Quintavalla, A.; Lombardo, M.. *ORGANIC LETTERS* **2015**, *17*, 4074-4077. DOI: 10.1021/acs.orglett.5b01996.

**45)** "The First Enantioselective Organocatalytic Synthesis of 3-Spiro-alpha-Alkylidene-gamma-Butyrolactone Oxindoles". Cerisoli, L.; Lombardo, M.; Trombini, C.; **Quintavalla\***, A.. *CHEMISTRY-A EUROPEAN JOURNAL* **2016**, *22*, 3865-3872. DOI: 10.1002/chem.201504157.

**46)** "Gold-Catalyzed Allylation Reactions". Quintavalla, A.; Bandini, M.. *CHEMCATCHEM* **2016**, *8*, 1437-1453. DOI: 10.1002/cctc.201600071.

**47)** "The Organocatalytic alpha-Fluorination of Chiral gamma-Nitroaldehydes: the Challenge of Facing the Construction of a Quaternary Fluorinated Stereocenter". Emma, M. G.; Lombardo, M.; Trombini, C.; **Quintavalla\***, A.. *EUROPEAN JOURNAL OF ORGANIC CHEMISTRY* **2016**, 3223-3232. DOI: 10.1002/ejoc.201600378.

**48)** "Synthesis of 1,2-Dioxetanes as Thermochemiluminescent Labels for Ultrasensitive Bioassays: Rational Prediction of Olefin Photooxygenation Outcome by Using a Chemometric Approach". Andronico, L. A.; **Quintavalla, A.\***; Lombardo, M.; Mirasoli, M.; Guardigli, M.; Trombini, C.; Roda, A.. *CHEMISTRY-A EUROPEAN JOURNAL* **2016**, *22*, 18156-18168. DOI: 10.1002/chem.201603765.

**49)** "The interaction of heme with plakortin and a synthetic endoperoxide analogue: new insights into the heme-activated antimalarial mechanism". Persico, M.; Fattorusso, R.; Tagliatalata-Scafati, O.; Chianese, G.; de Paola, I.; Zaccaro, L.; Rondinelli, F.; Lombardo, M.; Quintavalla, A.; Trombini, C.; Fattorusso, E.; Fattorusso, C.; Farina, B.. *SCIENTIFIC REPORTS* **2017**, *7*, article number 45485. DOI: 10.1038/srep45485.

**50)** "Spirolactones: Recent Advances in Natural Products, Bioactive Compounds and Synthetic Strategies". **A. Quintavalla\***. *CURRENT MEDICINAL CHEMISTRY* **2018**, *25* (8), 917-962. DOI: 10.2174/0929867324666171106162259.

**51)** "Thermochemiluminescent Semiconducting Polymer Dots as sensitive nanoprobe for reagentless immunoassay". L. A. Andronico, L. Chen, M. Mirasoli, M. Guardigli, A. Quintavalla, M. Lombardo, C. Trombini, D. T. Chiu, A. Roda. *NANOSCALE* **2018**, *10*, 14012-14021. DOI: 10.1039/C8NR03092H.

**52)** "A simple smartphone-based thermochemiluminescent immunosensor for valproic acid detection using 1,2-dioxetane analogue-doped nanoparticles as a label". A. Roda, M. Zangheri, D. Calabria, M. Mirasoli, C. Caliceti, A. Quintavalla, M. Lombardo, C. Trombini, P. Simoni. *Sensors & Actuators: B. Chemical* **2019**, *279*, 327-333. DOI: 10.1016/j.snb.2018.10.012.

- 53)** "Evaluation of synthetic substituted 1,2-dioxanes as novel agents against human leishmaniasis". M. Ortalli, S. Varani, C. Rosso, **A. Quintavalla\***, M. Lombardo, C. Trombini. *European Journal of Medicinal Chemistry* **2019**, *170*, 126-140. DOI: 10.1016/j.ejmech.2019.02.070.
- 54)** "A Recyclable Chiral 2-(Triphenylmethyl)pyrrolidine Organocatalyst Anchored to [60]Fullerene". C. Rosso, M. G. Emma, A. Martinelli, M. Lombardo, A. Quintavalla, C. Trombini, Z. Syrgiannis, M. Prato. *Advanced Synthesis & Catalysis* **2019**, *361*, 2936-2944. DOI: 10.1002/adsc.201900009.
- 55)** "A Simple and Efficient Protocol for Proline-Catalysed Asymmetric Aldol Reaction". Marco Giuseppe Emma, Alice Tamburrini, Ada Martinelli, Marco Lombardo\*, Arianna Quintavalla\* and Claudio Trombini. *Catalysts* **2020**, *10*, 649. DOI:10.3390/catal10060649.
- 56)** "A supramolecular bifunctional iridium photoaminocatalyst for the enantioselective alkylation of aldehydes". Andrea Gualandi\*, Francesco Calogero, Ada Martinelli, Arianna Quintavalla, Marianna Marchini, Paola Ceroni\*, Marco Lombardo\* and Pier Giorgio Cozzi\*. *Dalton Trans.*, **2020**, *49*, 14497-14505. DOI: 10.1039/d0dt02587a.
- 57)** "Evaluation of the Pharmacophoric Role of the O–O Bond in Synthetic Antileishmanial Compounds: Comparison between 1,2-Dioxanes and Tetrahydropyrans". Margherita Ortalli, Stefania Varani, Giorgia Cimato, Ruben Veronesi, Arianna Quintavalla,\* Marco Lombardo,\* Magda Monari, and Claudio Trombini. *J. Med. Chem.* **2020**, *63*, 13140–13158. DOI: 10.1021/acs.jmedchem.0c01589.
- 58)** "Chemodivergent Photocatalytic Synthesis of Dihydrofurans and  $\beta,\gamma$ -Unsaturated Ketones". Arianna Quintavalla,\* Ruben Veronesi, Davide Carboni, Ada Martinelli, Nelsi Zaccheroni, Liviana Mummolo, and Marco Lombardo.\* *Adv. Synth. Catal.* **2021**, *363*, early view. DOI: 10.1002/adsc.202100260.

I declare that the information reported in this Curriculum Vitae is accurate and truthful.

I authorize the processing of personal data, including those sensitive, pursuant to and for the purposes of the Law 196/2003 for the purposes of this application notice.

Date

June 16<sup>th</sup>, 2021

Signature

A handwritten signature in black ink, appearing to read "Arianna Scudato". The signature is written in a cursive style with a large initial 'A' and 'S'.