

CURRICULUM VITAE

Marianna Marchini

08 January, 2020

Name: Marianna
Surname: Marchini
Date of birth: 02 January, 1989
Address (office): via F. Selmi 2, 40126 Bologna (BO), Italy
E-mail: marianna.marchini2@unibo.it

Professional experience

Postdoctoral researcher
University of Bologna

May 2019 -

Supervisor: Prof. Lucia Maini

Research topic: reproduction of alchemical recipes

The research activity is part of the project ERC-2016-CoG “Alchemy in the Making: From ancient Babylonia via Graeco-Roman Egypt into the Byzantine, Syriac and Arabic traditions (1500 BCE -1000 AD)” (*AlchemEast*), principal investigator Prof. Matteo Martelli, University of Bologna, Department of Philosophy and Communication Studies.

Postdoctoral researcher
University of Bologna

January 2017 – May 2019

Supervisor: Prof. Paola Ceroni

Research topic: supramolecular system for energy conversion and photocatalysis

Education

24CFU Educational Path
University of Bologna

June 2018

Anthropology (6 CFU); General Education Methodologies and Technologies (6 CFU); Psychology (6 CFU); Pedagogy, Special Pedagogy and Inclusive Education (6 CFU).

PhD student in Chemistry
University of Bologna

January 2014 – December 2016
defend May 2017

Supervisor: Prof. Paola Ceroni

Research topic: photoactive molecules in supramolecular system and photocatalysis

Certification of “Doctor Europaeus”

Master degree in “Photochemistry and
Molecular Materials”

October 2011 – July
2013

University of Bologna

110/110 cum laude

Thesis in “Supramolecular system based in pyridylpyridinium units: optical properties and encapsulation in cucurbiturils”

Supervisor: Prof. Paola Ceroni

Bachelor degree in “Chemistry and Material
Chemistry”

September 2008 – July
2011

University of Bologna

110/110

Thesis in “Rotational spectrum in supersonic expansion of THF-Kr: conformation and surface potential energy of internal motion”.

Supervisor: Prof. Walter Caminati

High School Diploma
Liceo Scientifico “Enrico Medi”, Senigallia,
Italy

September 2003 – July
2008

95/100

Publication

1. “Other nitrogen heterocycles: Carbazoles, imides and PDI, mpg-C₃N₄, tetrazines, riboflavin, and BODIPY”
P.G. Cozzi, P. Ceroni, A. Gualandi, M. Marchini, *Catalytic Science Series*, **2019**, 18, 423-469.
2. “Aluminum(III) Salen Complexes as Active Photoredox Catalysts”
A. Gualandi, M. Marchini, L. Mengozzi, H. T. Kidanu, A. Franc, P. Ceroni, P.G. Cozzi *Eur. J. Org. Chem.*, **2019**, article in press.

3. "Allylation of aldehydes by dual photoredox and nickel catalysis"
A. Gualandi, G. Rodeghiero, A. Faraone, F. Patuzzo, M. Marchini, F. Calogero, R. Perciaccante, T. P. Jansen, P. Ceroni, P. G. Cozzi *Chem. Commun.*, **2019**, 54 (48), 6838-6841.
4. "Asymmetric [3+2] Photocycloadditions of Cyclopropanes with Alkenes or Alkynes through Visible-Light Excitation of Catalyst-Bound Substrates" X. Huang, J. Lin, T. Shen, K. Harms, M. Marchini, P. Ceroni, E. Meggers *Angew. Chem. Int. Ed.*, **2018**, 57 (19), 5454-5458.
5. "Mechanistic insights into two-photon-driven photocatalysis in organic synthesis"
M. Marchini, A. Gualandi, L. Mengozzi, P. Franchi, M. Lucarini, P. G. Cozzi, V. Balzani, P. Ceroni *Phys. Chem. Chem. Phys.*, **2018**, 20 (12), 8071-8076.
6. "Application of coumarin dyes for organic photoredox catalysis"
A. Gualandi, G. Rodeghiero, E. Della Rocca, F. Bertoni, M. Marchini, R. Perciaccante, T. P. Jansen, P. Ceroni, P. G. Cozzi *Chem. Commun.*, **2018**, 54 (72), 10044-10047.
7. "Insegnare Scienze: qualche considerazione metodologica, ma non solo"
M. Venturi, M. Marchini *Annali online della Didattica e della Formazione Docente*, **2017**, vol 9 (n° 14), 280-293.
8. "Photoredox catalysis: the need to elucidate the photochemical mechanism"
M. Marchini, G. Bergamini, P. G. Cozzi, P. Ceroni, V. Balzani *Angew. Chem. Int. Ed.*, **2017**, 56 (42), 12820-12821.
9. "Photocatalytic ATRA reaction promoted by iodo-Bodipy and sodium ascorbate"
G. Magagnano, A. Gualandi, M. Marchini, L. Mengozzi, P. Ceroni, P. G. Cozzi *Chem. Commun.*, **2017**, 53 (10), 1591-1594.
10. "Hierarchical Growth of Supramolecular Structures Driven by Pimerization of Tetrahedrally Arranged Bipyridinium Units"

- M. Marchini, M. Baroncini, G. Bergamini, P. Ceroni, M. D'Angelantonio, P. Franchi, M. Lucarini, F. Negri, T. Szreder, M. Venturi, *Chem. Eur. J.*, **2017**, 23 (26), 6380-6390.
11. "Visible-Light-Induced Direct Photocatalytic Carboxylation of Indoles with CBr₄/MeOH"
Q.-Q. Yang, M. Marchini, W.-J. Xiao, P. Ceroni, M. Bandini *Chem. Eur. J.*, **2017**, 21 (50), 18052-18056.
12. "Organocatalytic Enantioselective Alkylation of Aldehydes with [Fe(bpy)₃]Br₂ Catalyst and Visible Light"
A. Gualandi, M. Marchini, L. Mengozzi, M. Natali, M. Lucarini P. Ceroni, P. G. Cozzi *ACS Catal.*, **2015**, 5 (10), 5927-5931
13. "A highly luminescent tetramer from a weakly emitting monomer: Acid- and redox-controlled multiple complexation by cucurbit[7]uril"
G. Bergamini, A. Fermi, M. Marchini, M. Locritani, A. Credi, M. Venturi, F. Negri, P. Ceroni, M. Baroncini *Chem. Eur. J.*, **2014**, 20 (23), 7054-7060.
14. "Rotational spectrum and internal dynamics of tetrahydrofuran-krypton"
Q. Gou, G. Feng, L. Evangelisti, A. Maris, M. Marchini, B. Velino, W. Caminati *ChemPhysChem.*, **2012**, 13 (1), 221-225.

Research stays

Prof. A. Dieter Schlüter

August 2015 –December 2015

ETH Zürich

Research topic: synthesis and AFM/SEM analysis of a 2D polymer, based on a porphyrinic monomer, with Langmuir-Blodgett trough approach

Grants and awards

"Prof G. P. Spada Medal Award" for best PhD Thesis in the Inorganic Chemistry Section.

February 2016

Marco Polo grant (Univ. of Bologna) – Funding the research stay at ETH Zürich, in the Institute of Polymers in Prof. A. Dieter Schlüter's group.

October 2015

Participation to conferences, schools and workshops

1. Part of the Scientific and organizing committee of the “Whorkshop L’alfabeto della natura: Chimica per la Formazione Primaria”, November 15-19 2019, Roma, Italy.
Oral presentation (*Laboratori trasversali di scienze per la formazione primaria*).
2. Gordon Research Conference on Photochemistry: Light-Driven Reactions, Materials and Devices, July 14-19 2019, Easton, Massachusetts, USA.
Poster presentation (*Allylation of Aldehydes by Dual Photoredox and Nickel Catalysis*).
3. UK-IT joint meeting on Photochemistry, June 24-26 2019, Lipari, Italy.
Oral presentation (*Allylation of Aldehydes by Dual Photoredox and Nickel Catalysis*).
4. Website creation and Secretaryship to VIII Ciamician Photochemistry School” (CPS19), June 10-14 2019, Bologna, Italy.
5. XLVI National Conference of Inorganic Chemistry of the Italian Chemical Society (SCI 2018), September 10-13 2018, Bologna, Italy.
Oral presentation (*Metal Complexes in Photocatalytic Reactions*).
6. Photoredox Catalysis for novel Organic Reactions, Beilstein Organic Chemistry Symposium, April 24-26 2018, Potsdam, Germany.
Poster presentation (*Organocatalytic enantioselective alkylation of aldehydes with [Fe(bpy)₃]Br₂ catalyst and visible light*).
7. Italian Photochemistry Meeting 2017, December 14-16 2017, Perugia, Italy.
Oral presentation (*Photochemical investigation on the mechanism of photoredox reactions promoted by visible light*).
8. XXVI National Conference of the Italian Chemical Society, September 10-14 2017 in Paestum (SA), Italy.
Oral presentation (*Tetrahedral arrays of metallo-porphyrins*).

9. 28th International Conference on Photochemistry, July 16-21 2017 in Strasbourg, France.
Oral presentation (*Photochemical Investigation on the Mechanism of Photoredox Reactions Promoted by Visible Light*).
10. Phototrain Innovative Training and Network first workshop, May 24-26 2017 at ICIQ Tarragona, Spain.
11. First Joint Congress of the French and Italian Photochemists and Photobiologists, September 19-22 2016 in Bari, Italy.
Oral presentation (*Pimerization drives supramolecular polymerization of a shape-persistent tetrahedral molecule bearing four bipyridinium units*).
12. 6th EuCheMS Chemistry Congress, September 11-15 2016, Siviglia, Spain.
Oral presentation (*Tetrahedral arrays of metallo-porphyrins*).
13. Assistant at 7^o Corso nazionale di introduzione alla fotochimica, June 6-10 2016, Bologna, Italy.
14. Central European Conference on Photochemistry (CECP 2016), February 14-18 2016, Bad Hofgastain, Austria.
Poster presentation (*Tetrahedral arrays of metallo-porphyrins*).
15. Italian Photochemistry Meeting 2015, December 17-18 2015 Bologna, Italy.
Oral presentation (*Tetrahedral arrays of metallo-porphyrins*).
16. 1^o Meeting of Italian Users of Atomic Force Microscopy (1^o AFMeeting 2015, Bruker) February, 24-25 2015 Milan, Italy.
17. Italian Photochemistry Meeting 2014, November 26-27 2014, Milan, Italy.
Oral presentation (*A photo- and electroactive shape-persistent tetrahedral molecule constituted by four pyridylpyridinium units*).
18. XXV National Conference of the Italian Chemical Society 2014, September 07-12 2014, Cosenza, Italy.
Oral presentation (*A photo- and electroactive shape-persistent tetrahedral molecule constituted by four pyridylpyridinium units*).

19. II meeting FIRB Nanosolar, February 17-18 2014, Ferrara, Italy.

Oral presentation (*A photo- and electroactive shape-persistent tetrahedral molecule constituted by four pyridylpyridinium units*).

20. Participation to 6° Corso nazionale di introduzione alla fotochimica, June 3-6 2013, Bologna, Italy.

Teaching activities

Adjunct Professor

Elements of Ecology - Laboratory activity, single cycle degree programme in Primary teacher education (3rd year undergraduate students). University of Bologna AY 2019/2020, in progress, ca. 300 students.

Elements of Chemistry and Chemistry Teaching (integrated course, 4CFU, 24 h), single cycle degree programme in Primary teacher education (4rd year undergraduate students). University of Bologna AY 2018/2019, ca. 300 students.

Tutor

Coordination Chemistry with Laboratory - Laboratory assitant, first cycle degree programme in Chemistry and Materials Chemistry (2nd year undergraduate students). University of Bologna AY 2019/2020, in progress, ca. 80 students.

Elements of Ecology - Laboratory assitant (16 h), single cycle degree programme in Primary teacher education (3rd year undergraduate students). University of Bologna AY 2018/2019.

Coordination Chemistry with Laboratory - Laboratory assitant, first cycle degree programme in Chemistry and Materials Chemistry (2nd year undergraduate students). University of Bologna AY 2018/20219, ca. 80 students.

Elements of Ecology - Laboratory assitant (16 h), single cycle degree programme in Primary teacher education (4rd year undergraduate students). University of Bologna AY 2017/2018.

Coordination Chemistry with Laboratory - Laboratory assitant, first cycle degree programme in Chemistry and Materials Chemistry (2nd year undergraduate students). University of Bologna AY 2017/2018.

Elements of Ecology - Laboratory assistant (16 h), single cycle degree programme in Primary teacher education (4rd year undergraduate students). University of Bologna AY 2016/2017.

Coordination Chemistry with Laboratory - Laboratory assistant, first cycle degree programme in Chemistry and Materials Chemistry (2rd year undergraduate students). University of Bologna AY 2016/2017.

Elements of Ecology - Laboratory assistant (16 h), single cycle degree programme in Primary teacher education (4rd year undergraduate students). University of Bologna AY 2015/2016.

Coordination Chemistry with Laboratory - Laboratory assistant (32 h), first cycle degree programme in Chemistry and Materials Chemistry (2rd year undergraduate students). University of Bologna AY 2014/2015.

Elements of Ecology - Laboratory assistant (16 h), single cycle degree programme in Primary teacher education (4rd year undergraduate students). University of Bologna AY 2014/2015.

General and Inorganic Chemistry – exercises (60 h), School of Pharmacy, Biotechnology and Sport Science (undergraduate students from different programmes). University of Bologna AY 2013/2014.

Language skills

Italian	mother tongue
English	fluent

Technical skills and competences

Techniques of chemical analysis

Spectrophotometry (very good)

Spectrofluorimetry (very good)

Transient absorption spectroscopy (very good)

Time-Resolved Fluorescence (very good)

Cyclic Voltammetry and Bulk electrolysis (very good)

Spectroelectrochemistry (good)

Dynamic Light Scattering (good)

Gamma ray irradiation (very good)

Langmuir-Blodgett trough (very good)

Atomic Force Microscopy (good)

Powder X-ray diffraction (good)

System software

Operating system: Windows (very good), Linux (good), Mac OS (very good)

Office software: Microsoft Office (very good), Open Office (good), Libre office (good)

Technical software: MatLab (good), Gaussian 09 (good), ChemBioOffice (good),

Specfit (very good)

Social and organization skills

Acquired good skills in teamwork and coordination of the research projects during the training period and the research activity carried out during the PhD and PostDoc. Good teaching skills developed during the tutoring activities and working as adjunct professor.