

Alessia Tombesi

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EDUCATION and TRAINING

October 2021- at present **Postdoctoral fellow** University of Camerino

Scientific sector: CHIM/03 Chimica generale e inorganica

Research project: "Sviluppo di MOFs per contrastare il deperimento di prodotti climaterici"

Supervisor: Professor Fabio Marchetti

October 2019- October 2020 **Postdoctoral fellow** University of Camerino

Scientific sector: CHIM/03 Chimica generale e inorganica

Research project: "Sviluppo di vetri e specchi antimpronta ed antibatterici"

Supervisor: Professor Fabio Marchetti

Partner company: Fiam Italia Srl, Via Ancona, 1/B, 61010 San Germano PU

May 2019-September 2019 **Research grant** University of Camerino

Research project: "MOFs contenenti leganti ditopici N,N-donatori: sintesi, caratterizzazione e studi biologici"

Supervisor: Professor Riccardo Pettinari

February 2019 **Percorso formative per il conseguimento di 24CFU nelle discipline antropo-psicopedagogiche e nelle metodologie e tecnologie didattiche** ai sensi del Decreto ministeriale 616 del 10/08/2018

2015-2019 **PhD in Chemical and pharmaceutical sciences and biotechnology Series XXXI Cycle** University of Camerino

PhD thesis title: "Advanced functional coating for self-cleaning and anti-corrosion applications"

Supervisors: Professor Claudio Pettinari

EUREKA Project Partner company: DIASEN, n° 5, 60041 Zona Industriale Berbentina AN

February 2018- August 2019 **Visiting PhD student researcher at UCL** University College London

PhD training period focused on aerosol-assisted chemical vapour deposition for synthesis of thin films and coatings

Supervisors: Professor Ivan Parkin

2013- 2015 **Master degree in "Chemistry and advanced chemical methodologies** University of Camerino

Thesis title: "Synthesis, Characterization And In Vitro Studies Of The Antimalarial Potential Activity Of Water Soluble Cu(I), Ag(I) And Au(I) Phosphane Complexes"

Supervisors: Prof. Maura Pellei, Prof. Annette Habluetzel Co-Supervisor: Dr. Sofia Tapanelli

2009- 2013 **Bachelor in "Chemistry"** University of Camerino

Thesis title: " Synthesis and characterization of Biologically Active Cu (I) and Ag (I) Complexes with Water-soluble Phosphines and Bidentate Nitrogenous ligands"

Supervisors: Prof. Maura Pellei, Prof. Carlo Santini Co-Supervisor: Dr. Marika Marinelli

PUBLICATIONS

1. Tapanelli, S.;Habluetzel, A.;Pellei, M.;Marchiò, L.;Tombesi, A.;Capparè, A. & Santini, C. :Novel metalloantimalarials: Transmission blocking effects of water soluble Cu(I), Ag(I) and Au(I) phosphane complexes on the murine malaria parasite Plasmodium berghei. *J. Inorg. Biochem.* **166**, (2017).
2. Marchetti, F.;Pettinari, C.;Di Nicola, C.;Tombesi, A. & Pettinari, R. :Coordination chemistry of

- pyrazolone-based ligands and applications of their metal complexes. *Coord. Chem. Rev.* **401**, (2019).
3. Tombesi, A.;Li, S.;Sathasivam, S.;Page, K.;Heale, F. L.;Pettinari, C.;Carmalt, C. J. & Parkin, I. P. :Aerosol-assisted chemical vapour deposition of transparent superhydrophobic film by using mixed functional alkoxysilanes. *Sci. Rep.* **9**, (2019).
 4. Vismara, R.;Tuci, G.;Tombesi, A.;Domasevitch, K. V.;Di Nicola, C.;Giambastiani, G.;Chierotti, M. R.;Bordignon, S.;Gobetto, R.;Pettinari, C.;Rossin, A. & Galli, S. :Tuning Carbon Dioxide Adsorption Affinity of Zinc(II) MOFs by Mixing Bis(pyrazolate) Ligands with N-Containing Tags. *ACS Appl. Mater. Interfaces* **11**, (2019).
 5. Pettinari, C.;Tombesi, A.;Marchetti, F.;Di Nicola, C. & Pettinari, R. :Fifteen Years of Scientific Investigation into Main Groups and Transition Metal Coordination Chemistry with Allan White. *Aust. J. Chem.* **73**, (2020).
 6. Balducci, F.;Adamopoulos, S.;Pettinari, C.;Canti, E.;Di Nicola, C.;Tombesi, A.;Cecchini, A. & Gabbani, C. :A formaldehyde-free adhesive for particleboards based on soy flour, magnesium oxide, and a plant-derived enzymatic hydrolysate. *BioResources* **15**, (2020).
 7. Di Nicola, C.;Marchetti, F.;Pettinari, R.;Tombesi, A.;Pettinari, C.;Grappasonni, I.;Dyson, P. J. & Scuri, S. :Tethering (Arene)Ru(II) acylpyrazolones decorated with long aliphatic chains to polystyrene surfaces provides potent antibacterial plastics. *Materials (Basel)*. **13**, (2020).
 8. Di Nicola, C.;Tombesi, A.;Moroni, M.;Vismara, R.;Marchetti, F.;Pettinari, R.;Nardo, L.;Vesco, G.;Galli, S.;Casassa, S.;Pandolfo, L. & Pettinari, C.: Investigation on the interconversion from DMF-solvated to unsolvated copper(II) pyrazolate coordination polymers. *CrystEngComm* **22**, (2020).
 9. Pettinari, C. & Tombesi, A. :Metal-organic frameworks for chemical conversion of carbon dioxide. *MRS Energy Sustain.* **7**, E31 (2020).
 10. Pettinari, C. & Tombesi, A. :Metal-organic frameworks for carbon dioxide capture. *MRS Energy Sustain.* **7**, E35 (2020).
 11. Pettinari, R., Marchetti, F., Tombesi, A., Duan, F., Zhou, L., Messori, L., Giacomelli, C., Marchetti, L., Trincavelli, M. L., Marzo, T., La Mendola, D., Balducci, G., & Alessio, E.: Ruthenium(II) 1,4,7-trithiacyclononane complexes of curcumin and bisdemethoxycurcumin: Synthesis, characterization, and biological activity. *J. Inorg. Biochem.* **218**, 111387, (2021).
 12. Pettinari, C., Pettinari, R., Di Nicola, C., Tombesi, A., Scuri, S., & Marchetti, F.: Antimicrobial MOFs. *Coordination Chemistry Reviews*, **446**, 214121,(2021).
 13. Pettinari, R., Marchetti, F., Tombesi, A., Di Nicola, C., Pettinari, C., Guo, C., Zhang, Z., Galindo, A., Fadaei-Tirani, F., Hadiji, M. and Dyson, P.J.: Arene-ruthenium (II) complexes with pyrazole-based ligands bearing a pyridine moiety: synthesis, structure, DFT calculations, and cytotoxicity. *Inorganica Chimica Acta*, p.120610. (2021)

TEACHING ACTIVITY

- **A.A. 2020/2021 Cycle of seminars for the Bachelor degree in Biosciences and Biotechnology of GENERAL INORGANIC CHEMISTRY**
- **A.A. 2018/2019 Teaching Assistants of GENERAL INORGANIC CHEMISTRY** to the students of the first year of the degree course in Chemistry
- **A.A. 2017/2018 Teaching Assistants of GENERAL INORGANIC CHEMISTRY** to the students of the first year of the degree course in Chemistry
- **A.A. 2016/2017 Teaching Assistants of GENERAL INORGANIC CHEMISTRY** to the students of the first year of the degree course in Biological sciences
- **A.A. 2015/2016 Laboratory Assistant** in “Progetto Lauree Scientifiche” project
- **Co-supervisor the undergraduate research project of bachelor degree student.** Title of student thesis: “Sintesi di nuovi MOFs con leganti azolici e loro caratterizzazione allo stato solido.”
- **Co-supervisor the undergraduate research project of master degree student.** Title of student thesis:

“Synthesis and characterization of new ruthenium complexes with Schiff bases, evaluation of potential applications in the biological and catalytic fields.”

CONFERENCES and COURSES ATTENDED

- **XXVII Congresso Nazionale della Società Chimica Italiana**, dal 14 al 23 settembre 2021, Web edition

Alessia Tombesi, Sonila Xhafa, Fabio Marchetti, Claudio Pettinari, Corrado Di Nicola, Riccardo Pettinari, Stefania Scuri “*Investigations of the Antibacterial Activity of a Series of Bis(Pyrazolato)-Based Metal-Organic Frameworks*”

- **13rd International School of Organometallic Chemistry (ISOC 2021)**, 1 September-3 September 2021, Web edition
- **2nd International School on Porous materials: MOFschool 2021**, 21-25 June 2021, eb edition

Alessia Tombesi, Sonila Xhafa, Fabio Marchetti, Claudio Pettinari, Corrado Di Nicola, Riccardo Pettinari, Stefania Scuri “*Bis(pyrazolato)-based metal-organic frameworks of copper(II) and zinc(II) display antimicrobial activity*”, Book of abstract, pag.71, Como Italy

- **1st International School of Chemistry “Chemistry for everyday life”**, 1-6 September 2019, Camerino Italy
- **12th International School of Organometallic Chemistry (ISOC 2019)**, 31 August-4 September 2019, Camerino (Italy)
- **VI ISGS Summer School Frontier Hybrid Materials** 16-19 September 2018, Alghero (Italy)
- **11th International School of Organometallic Chemistry (ISOC 2017)**, 2-6 September 2017, San Benedetto del Tronto (Italy)

Alessia Tombesi, Nello Mosca, Rebecca Vismara, Andrea Rossin, Claudio Pettinari, Corrado Di Nicola, Simona Galli. “*Synthesis and characterization of novel coordination framework incorporating bis(pyrazolyl)-tagged ligands for a different applications*. (poster). 11th International School of Organometallic Chemistry (ISOC 2017), Abs. Atti del Conv., poster 70, pag.53, 2-6 Settembre 2017, San Benedetto del Tronto (Italia). ISBN: 9788867680290.

Nello Mosca, Rebecca Vismara, Alessia Tombesi, Giulia Tuci, Giuliano Giambastiani, Andrea Rossin, Claudio Pettinari, Simona Galli. “*NO₂-tagged pyrazolate based MOFs: efficient CO₂ sorbents at ambient conditions*”. (poster). 11th International School of Organometallic Chemistry (ISOC 2017), Abs. Atti del Conv., poster 46, pag.41, 2-6 Settembre 2017, San Benedetto del Tronto (Italia). ISBN: 9788867680290.

- **XXXV Congresso delle Sezioni Toscana-Umbria-Marche-Abruzzo della Società Chimica Italiana - TUMA2016**, 25-27 September 2016, Giulianova (TE) XLIII Congresso Nazionale della Divisione Chimica Inorganica della Società Chimica Italiana.

Alessia Tombesi, Claudio Pettinari, Leonardo Ferroni, Simone Sonaglia. “*Advanced functional coating: study and research to develop anti-fingerprint coating for industry use*” (poster). XXXV Congresso delle Sezioni Toscana-Umbria-Marche-Abruzzo -TUMA2016. Giulianova(TE), September 25-27, 2016.

SEMINAR AND WORKSHOP:

Unicamforma Team based learning per le scienze, Camerino 2018

Research Ethics carried out in University of Camerino 2016

English for writing research papers carried out in University of Camerino 2016

Scientific Writing, part II carried out in University of Camerino 2016

DNA G-QUADRUPLEXES from nucleic acid aptamers to highly ordered supramolecular structures carried out in University of Camerino 2016

Materials for Sodium-ion batteries carried out in University of Camerino

Horizon 2020 carried out in University of Camerino 2016

18/10/2021

Alessia Tombesi