

## PERSONAL INFORMATION


**Monica Panigati**

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✉ monica.panigati@unimi.it

Sex Female | Date of birth 07/03/1970 | Nationality Italian

## WORK EXPERIENCE

December 2002 -Current

**Assistant Professor in Analytical Chemistry**

Università degli Studi di Milano

Department of Chemistry, Via Golgi 19, 20133 Milan (Italy)

- Synthesis, spectroscopic (UV, NMR, IR) and electrochemical characterization of polynuclear rhenium-carbonyl complexes containing 1,2-diazine ligands, for applications in luminescent devices, in cell imaging as luminescent probes, in third-generation photovoltaic devices (DSSC, BHJ) and fabrication of BHJ devices (Project PRIN 2009), and finally, as catalysts for CO<sub>2</sub> reduction.

## Research &amp; Development

March 1999 –December 2002

**Post-doc position**

Università degli Studi di Milano

Department of Chemistry, Via Golgi 19, 20133 Milan (Italy)

- Synthesis of polynuclear hydrido rhenium-carbonyl complexes, investigation of their reactivity toward organic molecules (in particular containing nitrogen donor atoms), kinetic and dynamic studies in solution by NMR spectroscopy.

## Research &amp; Development

## EDUCATION AND TRAINING

December 1995-March 1999

**Ph. D. in Chemistry**

EQF 8

Università Degli Studi di Milano

Department of Chemistry, Via Golgi, 19 20133 Milano

Reactions of hydrogen transfer from carbon to metal and from metal to ligand in polynuclear transition-metal containing hydride ligands.

- Organometallic synthesis
- 1D and 2D multinuclear NMR spectroscopy
- Low temperature IR spectroscopy

1989-May 1995

**Master's Degree in Chemistry (110/110)**

EQF 7

Università Degli Studi di Milano

Department of Chemistry, Via Golgi, 19 20133 Milano

H/D exchange via reversible pyridine ortho-metalation, and competition between C-H oxidative addition and ligand coordination in hydrido-carbonyl triangular rhenium clusters: a  $^1\text{H-NMR}$  investigation. X-ray crystal structure of the anion  $[\text{Re}_3(\mu\text{-H})_2(\text{CO})_{11}(\text{Py})]^-$ .

- Inorganic and Organometallic synthesis
- IR and NMR spectroscopy

1984-1989 **High School Diploma (56/60)**

EQF 4

Liceo Scientifico Statale IIS Bachelet, Via Stignani 63/65, 20081 Abbiategrasso (Milano)

## PERSONAL SKILLS

Mother tongue(s) *Italian*

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	Intermediate	Advances	Intermediate	Intermediate	Advances
	B1/B2				
French	Basic	Basic	Basic	Basic	Basic
	A1				

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user  
[Common European Framework of Reference for Languages](#)

Communication skills

- good communication skills gained through my experience as teacher and as speaker at international conferences

Organisational / managerial skills

- Tutor of 1 postdoc student, 2 PhD student, 11 laurea students, 5 bachelor laurea students c/o Università degli studi di Milano, since 2002
- member of commissions for: (a) PhD title in Chemistry at Università degli Studi di Milano, and Politecnico di Milano (b) postdoc fellowships at Università degli studi di Milano.
- In the 2001-2002 leader of a Research unit of Università degli Studi di Milano in the "Young people project", funded by MIUR.

Job-related skills

- Organic, inorganic and organometallic synthesis
- Able to operate in advanced synthesis laboratories, with inert gases, high-vacuum lines or dryboxes
- Solid and liquid IR measurements, both at room and low temperature
- 1D and 2D NMR analyses, both at room and low temperature
- Electrochemical measurements (Cyclic Voltammetry, Polarography, UV-vis Spectroelectrochemistry)
- Density-Functional Theory calculations interpretation
- UV-Vis absorption measurements
- Steady-state and time resolved photoluminescence measurements
- Fabrication of Photovoltaic Devices (DSSC, OPV) and electroluminescent devices (OLED)

- Computer skills**
- Microsoft Office, iWork, OpenOffice suites
  - Windows OS
  - Chemical software (ChemDraw, ChemSketch)
  - Crystallographic software (Mercury)
  - Electrochemical software (GPES, NOVA)
  - IR software (OPUS)
  - Spectrophotometer software (Edinburgh Instruments F980, Quantaurus-QY Hamamtsu)
  - NMR software (WinNMR 1D/2D, MestReNova, TopSpin)
  - Graphic software (Adobe)
- Other skills**
- Writer of novels
- Driving licence** B

## ADDITIONAL INFORMATION

## Publications

Co-author of 47 publications on peer-reviewed international/national journals, 1 books' chapter.  
H-index (Web of Science): 17

- 1) L. Veronese, E. Quartapelle Procopio, D. Maggioni, P. Mercandelli, M. Panigati\*  
Dinuclear rhenium pyridazine complexes containing bridging chalcogenide anions: synthesis, characterization and computational study, *New J. Chem.*, 41 (2017) 11268.
- 2) E. Quartapelle Procopio, T. Benincori, G. Appoloni, P. R. Mussini, S. Arnaboldi, C. Carbonera, R. Cirilli, A. Cominetti, L. Longo, R. Martinazzo, M. Panigati, R. Po, A family of solution-processable macrocyclic and open-chain oligothiophenes with atropisomeric scaffolds: structural and electronic features for potential energy applications, *New J. Chem.*, 41 (2017) 10009.
- 3) A. Palmioli, A. Aliprandi, D. Septiadi, M. Mauro, A. Bernardi, L. De Cola, M. Panigati, Glyco-functionalized dinuclear rhenium(I) complexes for cell imaging, *Org. Biomol. Chem.* 15 (2017) 1686.
- 4) L. Veronese, E. Quartapelle Procopio, F. De Rossi, T. M. Brown, P. Mercandelli, P. Mussini, G. D'Alfonso, M. Panigati\*, New dinuclear hydrido-carbonyl rhenium complexes designed as photosensitizers in dye-sensitized solar cells, *New J. Chem.* 40 (2016) 2910.
- 5) C. Mari, M. Panigati\*, L. D'Alfonso, I. Zanoni, D. Donghi, L. Sironi, M. Collini, S. Maiorana, C. Baldoli, G. D'Alfonso, E. Licandro, Luminescent conjugates between dinuclear rhenium complexes and peptide nucleic acids (PNA): synthesis, photophysical characterization, and cell uptake, *Organometallics* 31 (2012) 5918-5928.
- 6) M. Panigati\*, M. Mauro, D. Donghi, P. Mercandelli, P. Mussini, L. De Cola, G. D'Alfonso, Luminescent dinuclear rhenium(I) complexes containing bridging 1,2-diazine ligands: Photophysical properties and application. *Coord. Chem. Rev.* 256 (2012) 1621-1643.
- 7) D. Maggioni, F. Fenili, L. D'Alfonso, D. Donghi, M. Panigati, I. Zanoni, R. Marzi, A. Manfredi, P. Ferruti, G. D'Alfonso, E. Ranucci, Luminescent Rhenium and Ruthenium complexes of an amphoteric poly(amidoamine) functionalized with 1,10-phenanthroline, *Inorg. Chem.* 51 (2012) 12776–12788.
- 8) E. Ferri, D. Donghi, M. Panigati, G. Prencipe, L. D'Alfonso, I. Zanoni, C. Baldoli, S. Maiorana, G. D'Alfonso, E. Licandro, Luminescent conjugates between dinuclear rhenium(I) complexes and peptide nucleic acids (PNA) for cell imaging and DNA targeting, *Chem. Commun.* (2010) 6255-6257.
- 9) M. Mauro, C.-H. Yang, C.-Y. Shin, M. Panigati, C.-H. Chang, G. D'Alfonso, L. De Cola, Phosphorescent organic light-emitting diodes with outstanding external quantum efficiency using dinuclear rhenium complexes as dopants, *Adv. Mater.* 24 (2012) 2054–2058.
- 10) E. Quartapelle Procopio, M. Mauro, M. Panigati\*, D. Donghi, P. Mercandelli, A. Sironi, G. D'Alfonso, L. De Cola, Highly emitting, concomitant polymorphic crystals of a dinuclear rhenium complex, *J. Am. Chem. Soc.* 132 (2010) 14397.

## Scientific Projects

Her research was founded by the national four-year project (FIRB 2003 - RBNE033KMA, headed by prof. R. Ugo) on nanostructured hybrid materials for photonic devices, and by two two-year "Scientific Project of Primary National Interest" (PRIN2007-2009 and PRIN2009-2011), funded by Italian Government, concerning the design, synthesis and characterization of PNA analogues for targeting RNA and microRNA. In both cases, she belongs to the permanent staff of the Research Unit of Milan University.

In the field of solar energy devices she belonged to the permanent staff of the research Unit of Milano in a PRIN project (2009-2012 - 2009PRAM8L) concerning "Unconventional materials for organic and hybrid photovoltaics" and in a Project PRIN 2012 (prot. 2012A4Z2RY) "AQUEOUS PROCESSABLE POLYMER SOLAR CELLS: FROM MATERIALS TO PHOTOVOLTAIC MODULES (AQUA-SOL) national responsible Prof. Gianluca Farinola, UNIBA. Moreover she is member of the research Unit of Università di Milano in two different projects funded by Fondazione Cariplo, namely: Project Fondazione Cariplo 2013 (2013-2015) "New biomimetic tools for miRNA targeting", (research unit responsible prof. Emanuela Licandro) and Project Fondazione Cariplo INTEGRATED PROJECTS FOR THE EXPERIMENTATION OF INITIATIVES THAT PROMOTE AND BOOST HUMAN CAPITAL IN RESEARCH WITH DIRECT BENEFITS FOR LOMBARDY 2013 (2013-2015) "SmartMatLab Centre" (principal investigator Prof. Elena Selli).

She is a member of the Italian Interuniversity Consortium on Material Science and Technology (INSTM) which, together with Regione Lombardia funded a two years project (2013-2015) titled "Development of new integrated nano-platform for the delivery of gold-based drugs for the treatment of the prostatic cancer" (SINFOnIA), responsible Prof. Giuseppe D'Alfonso.

## Actually open scientific Projects

- Member of the research unit for UNIMI in a Project Open Innovation Lombardia – Accordi per la ricerca e l'innovazione (2017-2020) "CurB: sviluppo di nuove molecole candidate alla cura di HBV responsabile d'unità Prof. Emanuela Licandro, UNIMI
- Member of the research unit for CNR-ISMAL into a cooperation project between Italy and Romania titled: "Materiali capaci di catturare e sequestrare la CO<sub>2</sub>, anche tramite reazione chimica, basati su derivati di tiofene-triazina-azometilini" national responsible Dr.ssa Silvia Destri (CNR-ISMAL Milano).

## Teaching Activities

- Chimica Analitica (CFU:8), Corso di laurea magistrale a ciclo unico in Farmacia, Università degli Studi di Milano, dal 2002 al 2013.
- Chimica Analitica I/Laboratorio di Chimica Analitica I (CFU:6), Corso di laurea triennale in Chimica Industriale, Università degli Studi di Milano, per l'A.A. 2014/2015 e 2015/2016.
- Chimica Analitica (CFU:6), Corso di laurea triennale in Biotecnologie Farmaceutiche, Università degli Studi di Milano, per l'A.A. 2014/2015.
- Chimica Analitica (CFU:3.5 + 2.5), Corso di laurea magistrale a ciclo unico in CTF, Università degli Studi di Milano, per l'A.A. 2015/2016, 2016/2017, 2017/2018.
- Metodi analitici per le Biotecnologie farmaceutiche/Modulo di Elementi di Chimica Analitica e Strumentale (CFU: 3+1), Corso di laurea triennale in Biotecnologia Università degli Studi di Milano, per l'A.A. 2016/2017, 2017/2018E.

## Memberships

Member of the Italian Interuniversity Consortium on Material Science and Technology (INSTM).  
Member of board of directors of Gruppo Italiano di Fotochimica (GIF)

## Personal data

I authorize the use of my personal data in compliance with Legislative Decree 30th June 2003, Nr. 196 "Codice in materia di protezione dei dati personali"

