

# **Curriculum Vitae**

## **INFORMAZIONI PERSONALI**

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## **PUBBLICAZIONE**

### **ELENCO COMPLETO DELLE PUBBLICAZIONI in Riviste Nazionali ed Internazionali (ISI) con referee**

**H INDEX: 32**

**3571 citations by 3012 documents (SCOPUS, May 2019).**

**P87 “CO<sub>2</sub> reduction by C<sub>3</sub>N<sub>4</sub>-TiO<sub>2</sub> Na on photocatalytic membrane reactor as a promising environmental pathway to solar fuels”**

Adele Brunetti, Francesca Rita Pomilla, Giuseppe Marcì, Elisa Isabel Garcia-Lopez, Enrica Fontananova, Leonardo Palmisano, Giuseppe Barbieri, Applied Catalysis B: Environmental 2019, in press. doi.org/10.1016/j.apcatb.2019.117779

**P86 “Effect of substituents on partial photocatalytic oxidation of aromatic alcohols assisted by polymeric C<sub>3</sub>N<sub>4</sub>”**

I.Krvtsov, M. Ilkaeva, E.I. García-López, G. Marcì, L. Palmisano, E. Bartashevich, E. Grigoreva, K. Matveeva, E. Díaz, S. Ordóñez

ChemCatChem 2019, 11, 2713-2724

**P85 “EPR investigations of polymeric and H<sub>2</sub>O<sub>2</sub>-modified C<sub>3</sub>N<sub>4</sub>-based photocatalysts”**

Dana Dvoranová, Zuzana Barbieriková, Milan Mazúr, Elisa I. García-López, Giuseppe Marcì, Karol Lušpai, Vlasta Brezová

Journal of Photochemistry and Photobiology A: Chemistry, 2019, 375, 100-113.

**P84 "Photoelectrochemical and EPR features of C<sub>3</sub>N<sub>4</sub> and O-modified C<sub>3</sub>N<sub>4</sub> employed for selective hotocatalytic oxidation of alcohols to aldehydes"**

G. Marci, E.I. García-López, F.R.Pomilla, L.Palmisano, A.Zaffora, M. Santamaria, I. Krivtsov, M. Ilkaeva, Z. Barbieriková, V.Brezová, *Catalysis Today* 328 (2019) 21-28

**P83 " Photoactivity of shape-controlled TiO<sub>2</sub> in gas-solid regime under solar irradiation"**

Elisa I. García-López, Giuseppe Marcì, Maria Vittoria Dozzi, Leonardo Palmisano, Elena Sellì, *Catalysis Today* 328 (2019) 118-124

**P82 "Co-deposition of Fe<sub>3</sub>O<sub>4</sub> Nanoparticles Sandwiched Between g-C<sub>3</sub>N<sub>4</sub> and TiO<sub>2</sub> Nanosheets: Structure, Characterization and High Photocatalytic Activity for Efficiently Degradation of Dye Pollutants"**

Z. Abbasi, A. Farrokhnia, E.I. García-López, M. Zargar Shoushtarić

*Physical Chemistry Research* 7(1), 2019, 65-80.

DOI: 10.22036/pcr.2018.147945.1537

**P81 "Heterogeneous Photocatalysis for selective formation of high-value-added molecules: Some chemical and engineering aspects"**

Francesco Parrino, Marianna Bellardita, Elisa I. García-López, Giuseppe Marcì, Vittorio Loddo, Leonardo Palmisano

*ACS Catalysis* 8 (2018) 11191-11225.

**P80 "Photocatalytic CO<sub>2</sub> valorization by using TiO<sub>2</sub>, ZrO<sub>2</sub> and graphitic based semiconductors"**

F. R. Pomilla, R. Molinari, G. Marci, E.I. Garcia-Lopez and L. Palmisano"

Research and Technologies for Society and Industry (IEEE-RTSI), ISBN: CFP18C29-ART, Part Number: 978-1-5386-6286-3, 2018, 478- 483.

DOI: 10.1109/RTSI.2018.8548363

**P79 “Photocatalytic Solar Light H<sub>2</sub> Production by Aqueous Glucose Reforming”**

Marianna Bellardita, Elisa I. García-López, G. Marcì, G. Nasillo, L. Palmisano

Eur. J. Inorg. Chem. 2018, 4522-4532

**P78 “Selective photocatalytic oxidation of 5-hydroxymethyl-2-furfural in aqueous suspension of polymeric carbon nitride and its adduct with H<sub>2</sub>O<sub>2</sub> in a solar pilot plant”**

M. Ilkaeva, Igor Krivtsov, José R. García, Eva Díaz, Salvador Ordóñez, Elisa I. García-López, Giuseppe Marcì, Leonardo Palmisano, M. Ignacio Maldonado, Sixto Malato,

Catalysis Today, 315 (2018) 138-148.

**P77 “Polymeric carbon nitride (C<sub>3</sub>N<sub>4</sub>) as heterogeneous photocatalyst for selective oxidation of alcohols to aldehydes”**

E.I. García-López, G. Marcì, L. Palmisano, J

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**P76 “ZrO<sub>2</sub> Based materials as photocatalysts for 2-propanol oxidation by using UV and solar light irradiation and tests for CO<sub>2</sub> reduction”**

E. García-López, G. Marcì, F.R. Pomilla, M.C. Paganini, C. Gionco, E. Giamello, L. Palmisano.

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**P75 “CO<sub>2</sub> to liquid fuels: photocatalytic conversion in a continuous membrane reactor”**

F.R. Pomilla, A. Brunetti, G. Marcì, E. García-López, E. Fontananova, L. Palmisano, G. Barbieri.

ACS Sustainable Chemistry & Engineering, 6 (7) (2018) 8743-8753.

**P74 “Selective photocatalytic oxidation of 5-hydroxymethylfurfural to 2,5-furandicarboxaldehyde by polymeric carbon nitride-hydrogen peroxide adduct”**

M.Ilkaeva, I. Krivtsov, E.I. García-López, G.Marcì, O.Khainakova, J.R.García, L.Palmisano, E.Díaz, S.Ordóñez

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**P73 “Selective photocatalytic oxidation of aromatic alcohols in water by using P-doped g-C<sub>3</sub>N<sub>4</sub>”**

M. Bellardita, E.I. García-López, G. Marcì, I.Krivtsov, J.R. García, L. Palmisano, Applied Catal. B 220 (2018) 222-233

**P72 “Comparison between preparative methodologies of nanostructured carbon nitride and their use as selective photocatalysts in water suspension”**

A. Akhundi, E. I. García-López, G. Marcì, A. Habibi-Yangjeh, L. Palmisano, Journal of Chemical Intermediates, 2017, 43, 5153-5168.

**P71 “Improved (Photo)catalytic Propene Hydration in a Gas/Solid System by Using Heteropolyacid/Oxide Composites: Electron Paramagnetic Resonance, Acidity, and Role of Water”**

E. García-López, G. Marcì, F. R. Pomilla, L. F. Liotta, B. Megna, M. C. Paganini, C. Gionco, E. Giamello, L. Palmisano, European Journal of Inorganic Chemistry 2017, 1900-1907.

**P70 “Selective photocatalytic oxidation of 5-hydroxymethyl-2-furfural to 2,5-furandicarboxyaldehyde in aqueous suspension of g-C<sub>3</sub>N<sub>4</sub>”**

I.Krivstov, E.I. García-López, G. Marcì, L. Palmisano, Z. Amghouz, J. R. García, S. Ordóñez, E. Díaz, Applied Catalysis B: Environmental 204 (2017) 430–439.

**P69 “Keggin heteropolyacid supported on TiO<sub>2</sub> used in gas-solid (photo)catalytic propene hydration and in liquid-solid photocatalytic glycerol dehydration”**

G. Marcì, E. I. García-López, V. Vaiano, G. Sarno, D. Sannino, L. Palmisano, *Catalysis Today*, 281, 2017, 60-70.

P68 “Enhanced (photo)catalytic activity of Wells-Dawson in comparison to Keggin heteropolyacid for 2-propanol dehydration in gas-solid regime

E. I. García-López, G. Marcì, F. R. Pomilla, L. Palmisano, *Applied Catalysis A:General*, 528 (2016) 113-122.

**P67 “Inorganic materials acting as heterogeneous photocatalysts and catalysts in the same reactions”**

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P66 “Cu-substituted lanthanum ferrite perovskites: Preparation, characterization and photocatalytic activity in gas-solid regime under simulated solar light irradiation”

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**P65 “Photocatalytic formation of H<sub>2</sub> and value-added chemicals in aqueous glucose (Pt)-TiO<sub>2</sub> suspension”**

M. Bellardita, E.I. García-López, G. Marcì, L. Palmisano, *International Journal of Hydrogen Energy* **41**, 2016, 5934-5947.

**P64 “Supported H<sub>3</sub>PW<sub>12</sub>O<sub>40</sub> for 2-propanol (photo-assisted) catalytic dehydration in gas-solid regime: The role of the support and of the pseudo-liquid phase in the (photo)activity”**

E. I. García-López, G. Marcì, F. R. Pomilla, A. Kirpsza, A. Micek-Ilnicka, L. Palmisano, *Applied Catal B*, **189**, 2016, 252-265.

**P63 “Titania-silica materials for enhanced photocatalysis”**

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**P62 “Photocatalytic conversion of glucose in aqueous suspensions of heteropolyacid-TiO<sub>2</sub> composites”**

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**P60 “La<sub>1-x</sub>Sr<sub>x</sub>Co<sub>1-y</sub>FeyO<sub>3</sub> dperovskites: Preparation, Characterization and Solar Photocatalytic Activity”**

E.I. García-López, G. Marci, F. Puleo, V. La Parola, L.F. Liotta, Applied Catalysis B: Environmental. **178**, 2015, 218-225.

**P59 “Photocatalytic CO<sub>2</sub> reduction in gas-solid regime in the presence of H<sub>2</sub>O by using GaP/TiO<sub>2</sub> composite as photocatalyst under simulated solar light”**

G. Marci, E. I. García-López, L. Palmisano

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**P58 “Heteropolyacid-Based Materials as Heterogeneous Photocatalysts”**

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**P57 “Photocatalytic CO<sub>2</sub> reduction in gas-solid regime in the presence of bare, SiO<sub>2</sub> supported or Cu-loaded samples”**

M. Bellardita, A. Di Paola, E. García-López, V. Loddo, G. Marci, L. Palmisano

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**P56 “Keggin heteropolyacid H<sub>3</sub>PW12O<sub>40</sub> supported on different oxides for catalytic and catalytic photo-assisted propene hydration”**

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**P54 “A survey of photocatalytic materials for environmental remediation”**

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**P53 “Titania photocatalysts for selective oxidations in water”**

L. Palmisano, V. Augugliaro, M. Bellardita, A. Di Paola, E. García-López, V. Loddo, G. Marcì, G. Palmisano, S. Yurkadal

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**P52 “Zn,Al hydrotalcites calcined at different temperatures: Preparation, characterization and photocatalytic activity in gas-solid regime”**

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**P51 "Advances in selective conversions by heterogeneous photocatalysis"**

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**P50 "Influence of activated carbon in TiO<sub>2</sub> and ZnO mediated photo-assisted degradation of 2-propanol in gas-solid regime"**

J. Matos, E. Garcia-Lopez, L. Palmisano, A. García, G. Marcì

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**P49 "Preparation, characterization and photocatalytic activity of TiO<sub>2</sub> impregnated with the heteropolyacid H<sub>3</sub>PW12O<sub>40</sub>: Photo-assisted degradation of 2-propanol in gas-solid regime"**

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**P48 "Photo-assisted degradation of 2-propanol in gas-solid regime by using TiO<sub>2</sub> impregnated with heteropolyacid H<sub>3</sub>PW12O<sub>40</sub>"**

G. Marcì, E. García-López, L. Palmisano

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**P47 "Comparison of the photocatalytic degradation of 2-propanol in gas-solid and liquid-solid systems by using TiO<sub>2</sub>-LnPc<sub>2</sub> hybrid powders"**

G. Marcì, E. García-López , G. Mele, L. Palmisano, G. Dyrda, R. S ota Catalysis Today **143**, 2009, 203-210.

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**P44 "Preparation of photocatalytic nanostructured TiO<sub>2</sub> thin films"**

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**P43 "Photocatalytic Thin films of TiO<sub>2</sub> formed by a sol-gel process using titanium isopropoxide as the precursor"**

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*Thin Solid Films* **516**, 2008, 3802-3807.

**P42 "Photoassisted mineralization of aromatic and aliphatic N-heterocycles in aqueous titanium dioxide suspensions and the fate of the nitrogen heteroatoms"**

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**P41 "Photoassisted oxidation of the recalcitrant cyanuric acid substrate in aqueous ZnO suspensions"**

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*J. Phys. Chem. C.* **111**, 2007, 18025-18032.

**P40 "Photocatalytic oxidation mechanism of benzonitrile in aqueous suspensions of titanium dioxide "**

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**P39 "Selectivity of hydroxyl radical in the partial oxidation of aromatic compounds in heterogeneous photocatalysis"**

G. Palmisano, M. Addamo, V. Augugliaro, T. Caronna, A. Di Paola, E. García-López, V. Loddo, G. Marcì, L. Palmisano, M. Schiavello

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**P38 "Photocatalytic Degradation of 4-Nitrophenol in Aqueous Suspension by Using Polycrystalline TiO<sub>2</sub> Impregnated with Lanthanide Double-Decker Phthalocyanine Complexes"**

G. Mele, E. García-López, L. Palmisano, G. Dyrda, R. Slota

*J. Phys. Chem. C* **111**, 2007, 6581-6588.

**P37 "Photoactivity of Nanostructured TiO<sub>2</sub> Catalysts in Aqueous System and their Surface Acid-Base, Bulk and Textural Properties"**

M. Addamo, M. Del Arco, M. Bellardita, D. Carriazo, A. Di Paola, E. García-López, G. Marcì, C. Martín, L. Palmisano, V. Rives

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**P36 “TiO<sub>2</sub>-based Photocatalysts Impregnated with Metallo-Porphyrins Employed for Degradation of 4-Nitrophenol in Aqueous Solutions: Role of Metal and Macrocycle”**

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**P35 “Preparation in Mild Conditions of Photocatalytically Active Nanostructured TiO<sub>2</sub> Rutile”**

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*Studies in Surface Science and Catalysis*, **162**, 2006, 689-696.

**P34 “Photodegradation of Lincomycin in Aqueous Solution”**

A. Di Paola, M. Addamo, V. Augugliaro, E. García-López, V. Loddo, G. Marcì

*Int. J. Photoenergy*, **8**, 2006, Number 1, ID 47418, 1-6

**P33 “The Role of Water in the Photocatalytic Degradation of Acetonitrile and Toluene in Gas-Solid and Liquid-Solid Regimes”**

M. Addamo, V. Augugliaro, S. Coluccia, A. Di Paola, E. García-López, V. Loddo, G. Marcì, G. Martra, L. Palmisano

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**P32 “Influence of the substituent on selective photo-catalytic oxidation of aromatic compounds in aqueous TiO<sub>2</sub> suspensions”**

G. Palmisano, M. Addamo, V. Augugliaro, E. García-López, V. Loddo, L. Palmisano, T. Caronna

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**P31 “Oxidation of Oxalate Ion in Aqueous Suspensions of TiO<sub>2</sub> by Photocatalysis and Ozonation”**

*M. Addamo, V. Augugliaro, E. García-López, V. Loddo, G. Marci, L. Palmisano*

*Catalysis Today, 107-108, 2005, 612-618*

**P30 “Photocatalytic Oxidation of Acetonitrile in Gas-Solid and Liquid-Solid Regimes”**

*V. Augugliaro, S. Coluccia, E. García-López, V. Loddo, G. Marci, G. Martra, L. Palmisano, M. Schiavello*

*Journal of Catalysis, 235, 2005, 209-220*

**P29 “Comparison of Different Photocatalytic Systems for Acetonitrile Degradation in Gas-Solid Regime”**

*V. Augugliaro, S. Coluccia, E. García-López, V. Loddo, G. Marci, G. Martra, L. Palmisano, M. Schiavello*

*Topics in Catalysis, 35, 2005, 237-244*

**P28 “Degradation of Lyncomycin in Aqueous Medium: Coupling of Solar Photocatalysis and Membrane Separation”**

*V. Augugliaro, E. García-López, V. Loddo, S. Malato-Rodriguez, I. Maldonado, G. Marci, R. Molinari, L. Palmisano.*

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**P27 “Preparation and Photoactivity of Nanostructured TiO<sub>2</sub> Particles Obtained by Hydrolisis of TiCl<sub>4</sub>”**

*M. Addamo, V. Augugliaro, A. Di Paola, E. García-López, V. Loddo, G. Marci, L. Palmisano.*

*Colloids and Surfaces. A: Physico-Chemical and Engineering Aspects, 265, 2005, 23-31*

**P26 “TRMC, XPS, EPR Characterisations of Polycrystalline TiO<sub>2</sub> Porphyrin Impregnated Powders and their**

**Catalytic Activity for 4-Nitrophenol Photodegradation in Aqueous Suspension”**

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**P25 “Removal of drugs in aqueous systems by photoassisted degradation”**

M. Addamo, V. Augugliaro, A. Di Paola, E. García-López, V. Loddo, G. Marcì, L. Palmisano.

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**P24 “Synthesis, Characterisation and Photocatalytic Tests of Anatase Titanium Dioxide Powders Prepared Via Sol-Gel with Different Chelating Agents and under Different Gelling Pressure Conditions”**

M. Ischia, R. Campostrini, L. Lutterotti, E. García-López, L. Palmisano, M. Schiavello, F. Pirillo and R. Molinari

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**P23 “Photolytic and TiO<sub>2</sub>-Assisted Photodegradation of Aqueous Solutions of Tetracycline”**

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**P22 “Polycrystalline TiO<sub>2</sub> impregnated with cardanol-based porphyrins for the photocatalytic degradation of 4-nitrophenol”**

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**P21 “Preparation, Characterization and Photoactivity of Polycrystalline Nanostructured TiO<sub>2</sub> Catalysts”**

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**P20 “Surface Characterization of Metal Ions Loaded TiO<sub>2</sub> Photocatalysts: Structure-Activity Relationship”**

A. Di Paola, E. García-López, G. Marcì, C. Martín, L. Palmisano, V. Rives and A. M. Venezia

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**P19 “Photocatalytic Oxidation of Acetonitrile in Aqueous Suspension of Titanium Dioxide Irradiated by Sunlight”**

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**P18 “Adsorption and Photocatalytic Degradation of Acetonitrile: FTIR Investigation”**

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**P17 “Photocatalytic Oxidation of Toluene on Irradiated TiO<sub>2</sub>: Comparison of Degradation Performance in Humidified Air, in Water and in Water Containing a Zwitterionic Surfactant”**

G. Marcì, M. Addamo, V. Augugliaro, S. Coluccia, E. García-López, V. Loddo, G. Martra, L. Palmisano and M. Schiavello

**P16 “Photocatalytic degradation of 4-nitrophenol in aqueous suspension by using polycrystalline TiO<sub>2</sub> impregnated with functionalized Cu(II)-porphyrin or Cu(II)-phthalocyanine”**

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**P15 “Photocatalytic Oxidation of Methyl-Orange in Aqueous Suspension: Comparison of the Performance of Different Polycrystalline Titanium Dioxide”**

G. Marcì, V. Augugliaro, A. Bianco Prevot, C. Baiocchi, E. García-López, V. Loddo, L. Palmisano, E. Pramauro and M. Schiavello

Annali di Chimica, 93, 2003, 639-648

**P14 “Photocatalytic Degradation of 4-Nitrophenol in Aqueous Suspension by Using Polycrystalline TiO<sub>2</sub> Samples Impregnated with Cu(II)-Phthalocyanine”**

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#### **AMBITI DI RICERCA**

Elisa Isabel García López was born in Madrid. She graduated in Chemistry (Inorganic Chemistry address) at Universidad Autónoma of Madrid (U.A.M.) in June of 1993. She attended the UAM Chemistry Dep. as a research assistant with a UAM scholarship from November 1<sup>st</sup> 1993 to April 1<sup>st</sup> 1994 working on the synthesis and characterization of macrocyclic Schiff bases and their coordination compounds with Sn.

She obtained the MASTER's DEGREE in "Ecological consultancy and entrepreneurial planning for the environment. " by the Institute of Ecological Research, Faculty of Technical Architecture, University of

Málaga.

Winner of a EU scholarship she worked at the Institute of Catalysis and Petrochemistry (ICP) of CSIC under the supervision of Prof. Javier Soria from April 1<sup>st</sup> 1994 to August 31<sup>th</sup> 1996. The project was addressed to the oxidation of cyanides in aqueous solutions by a photocatalytic process.

In September 1<sup>st</sup> 1996 Dr García won a scholarship for the training of staff researcher (Plan de Formación de Personal Investigador) by the Province of Madrid (Comunidad de Madrid) and she worked at the Institute of Renewable Energies in the Solar Energy unit of the Energy, Environmental and Technological Research Centre (CIEMAT) from September 1<sup>st</sup> 1996 until August 31<sup>th</sup> 1998. The work was carried on "Kinetic-chemical analysis of the process of photo-oxidation in the gaseous phase of volatile organic pollutants with catalysts based on titanium dioxide".

PhD in Chemistry in February of 2003 at Palermo University (UNIPA) defending the doctoral thesis titled: "Catalytic Degradation of Toluene and Acetonitrile using as Catalyst TiO<sub>2</sub>: Relationship between the chemical-physical properties of Photocatalyst and Photoreactivity. Supervisors: Prof. M. Schiavello and L. Palmisano.

Dr. García-López has worked in laboratories of international prestige, engaged in the study of different aspects of photocatysis, as Universidad Nacional de Río Cuarto (Argentina); Water Chemistry at the University of Madison-Wisconsin (USA); Department of Physical Chemistry of University of Turin (Italy); Department of Chemistry of the University of Salamanca (Spain); Department of Inorganic Chemistry of the Friedrich-Alexander University of Erlangen-Nürnberg (Germany). She has carried out a post-doc stage of one year at the Meisei University in Tokyo (Japan) at the Frontier Research Center for the Global Environment Protection in the group of Professor Hisao Hidaka. (August 2006 to July 2007).

Associate Professor n Chemistry (SSD CHIM 07) i at the UNIPA since January 2015. She has been enabled to became Full Professor by the National Commission of the Italian University Education in March 2017.

She is co-author of 97 scientific papers in ISI journals (peer reviewed) with H-index 37. (5074 citations in 4213 documents). Source: Scopus June 2022.

Co-editor of the book "Materials Science in Photocatalysis" Elsevier. 1st Edition, 2021. ISBN: 9780128218594

She is co-author of 12 chapters on scientific books and more than 250 works presented at National and International Congress.

Invited Editor of a special issue of the journal "Catalysts" (MDPI) titled: "Photocatalytic Materials alternative to TiO<sub>2</sub> for environmental remediation, sustainable chemistry and energy conversion".

-Member of the Editorial board of:

- 1) "International Journal of Photoenergy". Journal Hindawi Publishing Corporation.
- 2) "Materials" an MDIP open access journal; IF 3.623.
- 3) "Journal of Photocatalysis" by Bentham Science Publishers.

She has been invited by prestigious Professors to give lectures at institutions of scientific research as:

-Professor Jincai Zhao at the Institute of Chemistry, University of Chinese Academic of Sciences. Key Laboratory of Photochemistry in Beijing (July 2016)

-Professor A. Bielansky at the Jagellonian University, Krakow, Poland and at the Jerzy Haber Institute of Catalysis in Krakow, Poland (April 2014), where he also conducted a period of research as invited professor (April 2014).