

PROF: OSVALDO LANZALUNGA
Curriculum Vitae

Part I – General Information

Full Name	Oswaldo Lanzalunga
Date of Birth	20/06/1965
Place of Birth	Salerno
E-mail	osvaldo.lanzalunga@uniroma1.it
Spoken Languages	Italiano, Inglese

Part II – Education

Type	Year	Institution	Notes (Degree, Experience,...)
University graduation	1989	Università di Roma “La Sapienza”	Full marks (110/110 e Lode)
Qualification for Chemistry Profession	1990		
PhD in Chemical Sciences (VI Cycle)	1994	Università di Roma “La Sapienza”	PhD thesis title: “Reazioni di Frammentazione di Radicali Cationi Aromatici: un Modello per lo Studio dei Meccanismi di Ossidazione Biomimetica ed Enzimatica”

Part III – Appointments

IIIA – Academic Appointments

Start	End	Institution	Position
1/11/1993	31/10/1994	Consiglio Nazionale delle Ricerche - CNR	Winner of a postdoc CNR grant (scholarship) - Call n. 201.03.20
1/6/1995	31/05/1996	Consiglio Nazionale delle Ricerche - CNR	Winner of a postdoc CNR grant (scholarship) - Call n. 201.03.22
01/07/1996	31/12/2004	Università di Roma “La Sapienza” – Dipartimento di Chimica	Ricercatore Universitario, “SSD CHIM/06, Organic Chemistry”
1/1/2005	Current	Università di Roma “La Sapienza” – Dipartimento di Chimica	Professore di II fascia, “Settore concorsuale 03/C1, SSD CHIM/06, Organic Chemistry”
14/11/2014	14/11/2020		Qualified for the role of “Professore di I fascia” for the “Settore Concorsuale 03/C1, SSD CHIM/06, Organic Chemistry”

IIIB – Other Academic Appointments

Start	End	Institution	Position
August 1993	October 1993	Max Plank Institute fur Strahlenchemie, Mülheim an der Ruhr (Germany)	PhD visiting student, laboratory of Prof. S. Steenken
June 1994	July 1994	Max Plank Institute fur Strahlenchemie, Mülheim an der Ruhr (Germany)	Postdoc visiting scientist, laboratory of Prof. S. Steenken
June 2000	June 2000	National Institute of Standards and Technology, Gaithersburg, Maryland, USA	Postdoc visiting scientist, laboratory of Prof. P. Neta
5/6/1997	7/6/1997	Patterson Institute for Cancer Research Free Radical Research Facility, Manchester, UK	Visiting scientist (mission funded by TMR Programme-Access to Large-Scale Facilities, pulse radiolysis and laser flash photolysis techniques)
27/11/1997	29/11/1997		
28/5/1998	28/5/1998		
21/1/1999	23/1/1999		
27/5/1999	29/5/1999		
18/3/2001	31/3/2001	Central Laser facility, Rutherford Appleton Laboratory, Chilton, Didcot, UK	Visiting scientist, laboratory of Dr. Ian P. Clark, Program Manager of Time-Resolved Resonance Raman Spectroscopy (mission funded by the European Commission's Transnational Access to Major Research Infrastructures).
19/1/2003	2/2/2003		
23/2/2003	2/3/2003	Free Radical Research Facility di Daresbury, Cheshire, UK	Visiting scientist (mission funded by TMR Programme-Access to Large-Scale Facilities, European Commission's Transnational Access to Major Research Infrastructures)
17/2/2004	22/2/2004		
6/11/2004	11/11/2004		
February 2018	February 2018	European Synchrotron Radiation Facility (ESRF) di Grenoble, France	Visiting scientist, project "Following the ms timescale evolution of redox processes in iron catalysts by simultaneous X-ray and UV/Vis absorption spectroscopy"

IIIC – Other non-Academic Appointments

Start	End	Institution	Position
2008	2013	ABBOTT S.p.A., API Manufacturing Science & Technology	Scientific Advisor (program: identification of unknown impurities in pharmaceutical compounds through NMR and HPLC/MS analysis)
2011	2011	FIAT AVIO S.p.A	Scientific Advisor (program concerning the analysis of rubber samples through NMR and HPLC/MS analysis)
2012	2012	Aziende Chimiche Riunite Angelini Francesco - Acraf S.p.A.	Scientific Advisor (program concerning the antioxidant activity of paracetamol derivatives)

December 2012	January 2013	ABBVIE S.r.l. (ABBOTT S.p.A. group)	Research Contract “Caratterizzazione di un prodotto finito e di una materia prima mediante tecniche analitiche avanzate”
2014	2015	ABBVIE S.r.l. (ABBOTT S.p.A. group)	Scientific Advisor (program concerning the identification of unknown impurities in pharmaceutical compounds through NMR and HPLC/MS analysis)

Part IV – Teaching experience

IV A – Lectures and Courses in Academic Institutions

Year	Institution	Lecture/Course
Academic years: 2018/2019, 2017/2018, 2016/2017, 2015/2016, 2014/2015, 2013/2014, 2012/2013, 2011/2012, 2010/2011	Faculty of Mathematical, Physical and Natural Science, Università di Roma “La Sapienza”	“Chimica Organica II con Laboratorio (A-L)” for the Bachelor Degree in “Chimica” (9 CFU)
Academic year: 2018/2019	Faculty of Mathematical, Physical and Natural Science, Università di Roma “La Sapienza”	“Chimica Organica IV for the Master Degree in “Chimica” (3 CFU)
Academic years: 2009/2010, 2008/2009, 2007/2008, 2006/2007, 2005/2006, 2004/2005, 2003/2004, 2002/2003	Faculty of Mathematical, Physical and Natural Science, Università di Roma “La Sapienza”	“Laboratorio di Chimica Organica (A-L) for the Bachelor Degree in “Chimica”
Academic years: 2001/2002, 2000/2001, 1999/2000	Faculty of Mathematical, Physical and Natural Science, Università di Roma “La Sapienza”	“Laboratorio di Chimica Organica (IV Corso)” for the Degree in “Chimica”
Academic years: 2008/2009, 2007/2008, 2006/2007, 2005/2006	Faculty of Mathematical, Physical and Natural Science, Università di Roma “La Sapienza”	“Sintesi Organica” for the Master Degree in “Chimica” (4 CFU)

Academic years: 2005/2006, 2004/2005	Faculty of Science, Università di Roma "Tor Vergata"	"Chimica Organica" for the Bachelor Degree in "Ecologia" (5 CFU)
Academic year: 2003/2003	Faculty of Science, Università di Roma "Tor Vergata"	"Chimica Organica" for the Bachelor Degree in "Biologia Evoluzionistica ed Ecologia" (5 CFU)

IV B – Supervisor of PhD thesis in Chemical Sciences

Cycle	Title of the PhD Thesis	Student
XVII Cycle	<i>Mechanistic Aspects of Lignin Degradation. Role of Radicals and Radical Ions</i>	Claudia Fabbri
XXIV Cycle	<i>Study of Photochemically Generated Reactive Intermediates of Organic Sulfides and Sulfoxides</i>	Marco Mazzonna
XXV Cycle	<i>Study of the Reactivity of N-oxyl Radicals in Hydrogen Atom Transfer and Electron Transfer Processes</i>	Claudio D'Alfonso
XXX Cycle	<i>Oxidative Functionalization of Organic Compounds Promoted by Nonheme Fe and Mn Complexes</i>	Alessia Barbieri
XXXII Cycle	<i>Currently ongoing</i>	Barbara Ticconi

Part V - Society memberships, Awards and Honors

Year	Title
1989	Prize "ENICHEM – Piano Giovani"
1992	Prize "Federchimica per un futuro intelligente" IV Edition
2015	Award for the teaching of Chimica Organica II: on 10 december 2015 I was the recipient of a prize for "INSEGNAMENTO UNIVERSITARIO ECCELLENTE" which is assigned by the Dean of the Faculty of Mathematical, Physical and Natural Science of University of Rome "La Sapienza" for the teachings given during the previous academic year. The prize is assigned to the 5% of the teachers of the Faculty who distinguished in the teaching. It is assigned every year and this was the second edition.
2017	Member of the Directive Board of the Italia Chemical Society, Lazio, for the three years 2017-2019
2018	Award for the teaching of Chimica Organica II: on 13 december 2018 I was the recipient of a prize for "INSEGNAMENTO UNIVERSITARIO ECCELLENTE", V Edition, which is assigned by the Dean of the Faculty of Mathematical, Physical and Natural Science of University of Rome "La Sapienza" for the teachings given during the previous academic year.

Part VI - Funding Information [grants as PI-principal investigator or I-investigator]

VI A grants as **Principal Investigator**

Year	Title	Program	Grant value
2017	Non-heme iron complexes as efficient and versatile catalysts of oxidative processes	Bando Finanziamento Universitario "La Sapienza" Progetti di Ricerca Grandi - Progetti Grandi, anno 2017	58750 euro
2016	Processi Ossidativi Catalizzati da Complessi di Ferro-noneme	Bando Finanziamento Universitario 2016 "La Sapienza"	11000
2012	Processi di trasferimento di elettrone e di atomo di idrogeno e loro ruolo in ossidazioni enzimatiche e chimiche ecocompatibili	Bando Finanziamento Universitario 2012 "La Sapienza"	35000
2011	Proprietà e reattività di radicali e radicali ioni e loro ruolo in ossidazioni chimiche ed enzimatiche	Bando Finanziamento Universitario 2011 "La Sapienza"	12000
2010	Proprietà e reattività di radicali e radicali ioni e loro ruolo in processi ossidativi chimici ed enzimatici	Bando Finanziamento Universitario 2010 "La Sapienza"	15000
2000	Studio dei Meccanismi di Processi di Fotoingiallimento della Polpa del Legno e della Carta Contenenti Lignina	CNR Agenzia 2000	15.000.000 Lire

VI B grants as **Investigator**

Year	Title	Program	Position
2013-2016	Processi Ossidativi e Radicalici: Aspetti Innovativi ed Applicazioni allo Sviluppo di Biopolimeri Melanici e Antiossidanti di Rilevanza Biomedica e Tecnologica (PROxi) (PRIN 2011)	PRIN 2011. Prot. n. 2010PFLRJR_004	Associate professor Sapienza unit
2015	Hydrogen Peroxide Activation by Non-Heme Iron Complexes: A Route for Sustainable and Selective Oxidation Processes	Progetto grandi ricerche universitarie "La Sapienza" 2015 n. C26H159F5B	Associate professor
2014	The role of metal ions in the prion conversion of different human prion protein variants	Progetto di ricerca universitario "La Sapienza" 2014 n. C26A14L7CX	Associate professor
2013	Processi di trasferimento di elettrone e di atomo di idrogeno e loro ruolo in ossidazioni enzimatiche e chimiche eco-compatibili	Progetto di ricerca universitario "La Sapienza" 2013 n. C26A13PSX7	Associate professor

2010-2012	Proprietà di radicali e di radicali ioni, e loro ruolo in ossidazioni chimiche ed enzimatiche	PRIN 2008 Prot. n. 2008KRBLP5_002	Associate professor Sapienza Unit
2009	Rilevanza di eventi radicalici o a trasferimento di elettrone in processi enzimatici, biomimetici o chimici	Progetto di ricerca universitario "La Sapienza" 2009 n. C26A09E4A8	Associate professor
2008	Ruolo di processi radicalici e a trasferimento di elettrone in reazioni enzimatiche, biomimetiche e chimiche	Progetto di ricerca universitario "La Sapienza" 2008 n. C26A08FSSB	Associate professor
2007	Reazioni enzimatiche, biomimetiche e chimiche: ruolo di processi radicalici e a trasferimento di elettrone	Progetto di ateneo "La Sapienza" 2007 n. C26A074289	Associate professor
2006	Radicali e ioni radicali come intermedi chiave in processi ossidativi chimici ed enzimatici.	PRIN 2006 Prot. n. 2006033539_002	Researcher Sapienza unit
2006	Ruolo dei processi radicalici e di trasferimento di elettrone in reazioni enzimatiche, biomimetiche e chimiche	Progetto di ateneo "La Sapienza" 2006 n. C26A064WMY	Researcher
2005	Ruolo dei processi radicalici e di trasferimento di elettrone in reazioni enzimatiche, biomimetiche e chimiche	Progetto di ateneo "La Sapienza" 2005 n. C26A052831	Researcher
2004-2006	Processi ossidativi catalizzati da enzimi e da loro modelli: indagini meccanicistiche e strutturali, intermedi reattivi, possibili applicazioni sintetiche	PRIN 2004 Prot. n. 2004038243_002	Researcher Sapienza unit
2004	Ruolo dei processi radicalici e di trasferimento di elettrone in reazioni enzimatiche, biomimetiche e chimiche	Progetto di ateneo "La Sapienza" 2004 n. C26A043907	Researcher
2003	Ruolo di processi radicalici e di trasferimento di elettrone in reazioni enzimatiche, biomimetiche e chimiche	Progetto di ateneo "La Sapienza" 2003 n. C26A037125	Researcher
2002-2003	Aspetti meccanicistici della degradazione ossidativa della lignina. Ruolo di radicali e radicali ioni	PRIN 2002 Prot. n. 2002038342_002	Researcher
2002	Ruolo dei Processi di trasferimento di elettrone in reazioni enzimatiche, biomimetiche e chimiche	Progetto di ateneo "La Sapienza" 2002 n. C26A025528	Researcher
2000-2002	Meccanismi di ossidazioni enzimatiche e biomimetiche	PRIN 2000 Prot. n. MM03038742_002	Researcher Sapienza unit

1998-2000	Meccanismi di ossidazioni enzimatiche indotte da emoproteine e da loro sistemi modello	PRIN 1998 Prot. n. 9803031883_004	Researcher Sapienza unit
1999-2001	European project "OXYDELIGN - Towards efficient oxygen delignification"	Fifth Framework Programme	Researcher participant Sapienza unit

Part VII – Organization Activities and Other Institutional Roles

Period	Role
From 5/2/2019	Deputy Director of the Department of Chemistry, Università di Roma "La Sapienza"
From 6/11/2018	Member of the Ph.D. Programme Commission of Università di Roma "La Sapienza"
From 13/7/2015	Coordinator of the Ph.D. School in "Chemical Sciences", Università di Roma "La Sapienza"
From 2013	Member of the PhD Board of the PhD School in Chemical Sciences of the University of Rome "La Sapienza"
From 2006	Chief representative of Università di Roma "La Sapienza" for the Interuniversity Consortium Chemical Reactivity and Catalysis (CIRCC)
From 2015	Member of the Directive Board of the Interuniversity Consortium Chemical Reactivity and Catalysis (CIRCC)
From 24/2/2016 to 6/4/2017	Member of the Board of the Faculty of Mathematical, Physical and Natural Science, Università di Roma "La Sapienza"
2003	Member of the Evaluation Assessment Commission for the position of "Ricercatore Universitario", Facoltà di FARMACIA, Università degli Studi di Bologna – SSD CHIM/06 (Organic Chemistry), D.R. n. 1416 - 25.09.2003.
2014	Member of the Evaluation Assessment Commission for the position of "Ricercatore a tempo determinato", Dipartimento di Chimica e Chimica Industriale, Università di Pisa, SC 03/C1, SSD CHIM06 (Organic Chemistry), D.R. n. 23783/2014 - 23/7/2014.
2016	Member of the Ph.D. Commission for the final dissertation, Chimica per L'Ambiente e i Beni Culturali (XXVII-XXVIII Cycles), Università degli Studi dell'Aquila
2011	Member of the Ph.D. Commission for the assignment of the Doctor Europaeus title in Chemical Sciences "Synthesis and Reactivity", for the XXIV cycle at the University of Rome "La Sapienza".
2008	Member of the Ph.D. Commission for the final dissertation, Ph.D. School in Chemical Sciences, XXI cycle, University of Rome "La Sapienza".
2009	Member of the Commission for the admission to the PhD in Chemical Sciences for the XXV cycle at the University of Rome "La Sapienza", D.R. 001042 - 29/09/2009.

Part VIII – Reviewer Activity

Period	Role
From 2013	Member of the Editorial Board, <i>Journal of Sulfur Chemistry</i> (Taylor & Francis) (Editor in Chief: Prof. E. L. Clennan)
February 2011	Scientific evaluator of research project for ACS Petroleum Research Fund (USA)
March 2011	Scientific evaluator of research projects (National Call 2011) for the Agence Nationale de la Recherche (F)
May 2018	Scientific evaluator of research projects (National Call 2018) for the Agence Nationale de la Recherche (F)

I have carried out a reviewing activity for the following publishing houses (The journals for which the reviewing activity has been carried out and the related years are in brackets):

American Chemical Society (ACS Catalysis, 2018) (Accounts of Chemical Research, 2018) (The Journal of Organic Chemistry, 2004, 2006, 2007, 2009, 2014, 2015, 2016) (The Journal of Physical Chemistry, 2013, 2016, 2017, 2018) (Organic Letters, 2011, 2013)

Beilstein-Institut (Beilstein Journal of Organic Chemistry, 2013)

Bentham Science (Letters in Organic Chemistry, 2017)

Elsevier (Bioorganic Chemistry, 2009) (Bioorganic & Medicinal Chemistry, 2010) (Catalysis Communications, 2011, 2016) (Catalysis Today, 2017) (Chemosphere, 2012) (European Journal of Medicinal Chemistry, 2013) (Journal of Biotechnology, 2003) (Journal of Molecular Catalysis A: Chemical, Elsevier, 2017) (Journal of Molecular Catalysis B: Enzymatic, 2014) (Tetrahedron, 2015) (Tetrahedron Letters, 2014, 2015) (Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, 2009)

NRC Research Press (Canadian Journal of Chemistry, 2005)

Royal Society of Chemistry (Photochemical & Photobiological Sciences, 2008) (Organic & Biomolecular Chemistry, 2011, 2012, 2016, 2017, 2018) (Physical Chemistry Chemical Physics, 2013)

Springer (Applied Biochemistry and Biotechnology, 2014) (Journal of Inclusion Phenomena and Macrocyclic Chemistry, 2009) (Environmental Chemistry Letters, 2008) (Monatshefte für Chemie, 2008) (Research on Chemical Intermediates, 2017)

Taylor & Francis (Free Radical Research, 2016) (Journal of Wood Chemistry & Technology, 2011) (Journal of Sulfur Chemistry, 2013, 2014, 2015, 2017, 2018) (Phosphorus, Sulfur, and Silicon and the Related Elements, 2014)

Versita (Central European Journal of Chemistry, 2007)

Wiley (Advances in Synthesis & Catalysis, 2012) (Asian Journal of Organic Chemistry, 2017) (Chemistry a European Journal, 2015, 2016) (European Journal of Organic Chemistry, 2013) (Journal of Physical Organic Chemistry, 2001, 2008) (Photochemistry and Photobiology, 2006)

World Scientific (Journal of Porphyrins and Phthalocyanines, 2007)

Reviewing activity for ANVUR (2016).

Part IX – Research Activities

Keywords	Brief description of past and current research interest
Radical	<p><i>Properties and reactivity of radicals and radical ions.</i> Research activity focused on the investigation of the structure and reactivity of oxygen centred radicals (aminoxyl and alkoxy radicals) and radical cations of several classes of aromatic compounds (alkylaromatics, silanes, aromatic amines, sulfides and sulfoxides). The role of structural and medium effects on the generation and reactivity of these species has been analyzed by means of steady state photolysis and time resolved techniques such as laser flash photolysis and pulse radiolysis.</p>
Radical ions	
Laser flash photolysis	
Pulse radiolysis	
Photochemistry	

Keywords	Brief description of past and current research interest
Enzymes	<p><i>Mechanism of enzymatic oxidations.</i> The role played by radicals and radical ions in the oxidations of alkylaromatics, aromatic amines, sulfides and sulfoxides catalysed by heme enzymes (cytochrome P450, chloroperoxidase, horseradish peroxidase, lignin peroxidase) and the multicopper oxidase laccase has been analysed by means of product and kinetic studies.</p>
Cytochrome P450	
Horseradish peroxidases	
Lignin peroxidase	
laccase	

Keywords	Brief description of past and current research interest
Metalloporphyrin	<p><i>Mechanism of biomimetic oxidations.</i> In this research activity a special attention has been dedicated to the analysis of the mechanism of the oxidations catalysed by metalloporphyrin complexes as models of hemoproteins and nonheme iron and manganese complexes as biomimetic models of nonheme oxygenases. The distinction between hydrogen atom transfer and electron transfer/proton transfer mechanisms in the oxidation of hydrocarbons and direct oxygen transfer vs electron transfer/oxygen rebound mechanism in the oxidation of aromatic sulphides and sulfoxides have been investigated in detail.</p>
Nonheme model systems	
Oxidation	
Iron complexes	
Manganese complexes	

Keywords	Brief description of past and current research interest
Nonheme Iron Catalyst	<p><i>Nonheme iron complexes for sustainable C-H oxidations.</i> Nonheme imine iron (II) complexes prepared from cheap and commercially available precursors are efficient catalysts for the oxidation of aliphatic and aromatic C–H bonds by H₂O₂. In the same research field we prepared a supramolecular catalyst based on White's iron (II) complex, which efficiently oxidizes selected methylenic positions of long primary amines due to the presence of crown ethers in the catalyst backbone that allow the substrate recognition.</p>
Oxidation	
Reaction Mechanism	
C-H Activation	
Supramolecular catalysis	

Keywords	Brief description of past and current research interest
Lignin degradation	<p><i>Lignin degradation and photoyellowing.</i> The mechanistic aspects associated to the oxidative degradation and photoyellowing of lignin have been analyzed by using time-resolved techniques. Only a minor role is played by the ketyl pathway in the photoyellowing process while a major role would be played by the β-cleavage of α-aryloxy-substituted aromatic ketones formed by reaction of ketyl radicals with O₂ (phenacyl pathway).</p>
Photoyellowing	
Oxidation	
Ketyl radicals	
Phenacyl pathway	

Part X – Summary of Scientific Achievements

		Data Base
Total number of papers	106 (104 papers + 2 book chapters)	Scopus and WOS (highest value)
Number of papers in the last 5 years	26	Scopus and WOS (highest value)
Number of papers in the last 10 years	47	Scopus and WOS (highest value)
Hirsh (H) index	26	Scopus
Hirsh (H) index in the last 10 years	13	Scopus
Hirsh (H) index in the last 15 years	21	Scopus
Normalized H index [§]	0.9	Obtained as 26/29
Total number of citations	2443	Scopus and WOS (for each publication the highest number of citations reported in Scopus or WOS has been considered)
Number of citations in the last 15 years	1325	Scopus and WOS (for each publication the highest number of citations reported in Scopus or WOS has been considered)
Average citations per publication	23.5	Obtained as 2443/104
Total Impact Factor*	427.775	Journal Citation Reports (JCR)
Average Impact Factor per publication* [§]	4.11	Journal Citation Reports (JCR)

[§]H index divided by the academic seniority.

* The Impact Factor is related to the year of publication. For the less recent publication (before 1997) the IF is related to the nearest available IF from JCR (1997). For most recent publications (after 2017), the IFs of year 2017 are used.

[§] Obtained by (Total Impact Factor) / 104 since the book chapters do not contribute to the total impact factor.

Part XI– Direction or Participation to the activities of a research group characterized by international and national collaboration.

XI A Direction and co-direction at international level (corresponding authors in the publications related to the research activity are asterisked)

Collaboration with the group of Prof. Gino A. DiLabio, Department of Chemistry, University of British Columbia, Kelowna, Canada.

Projects: *Properties and reactivity of aminoxyl radicals, Reactivity studies of alkoxyl radicals in hydrogen atom transfer and electron transfer processes*

Collaboration with the group of Dr. Sakura Pascarelli and Dr. Theyencheri Narayanan, European Synchrotron Radiation Facility, Grenoble, France.

Project: *Coupled X-Ray Absorption/UV-Vis Monitoring of reactions promoted by nonheme iron oxo complexes*

Collaboration with the group of Prof. Miquel Costas, Universitat de Girona, Spain.

Project: *Reaction catalyzed by nonheme iron and manganese complexes.*

Collaboration with the group of Prof. Birger Sjögren, STFI, Swedish Pulp and Paper Research Institute, Stockholm, Sweden.

Project: *Delignification of wood pulp samples with the laccase/N-hydroxyphthalimide mediators/O₂ systems.*

Collaboration with the group of Prof. Wesley R. Browne, University of Groningen, The Netherlands.

Project: *Reactivity studies of imine based nonheme iron complexes.*

Collaboration with the group of Prof. Hermenegildo Garcia, Politecnico de Valencia, Spain.

Project: *Photochemical processes of aromatic sulfides*

Collaboration with the group of Prof. Derek A. Pratt., University of Ottawa, Canada.

Project: *Reactivity studies of sulfinyl radicals.*

XI B Direction and co-direction at national level (corresponding authors in the publications related to the research activity are asterisked)

Collaboration with the group of Dr. Tiziana Del Giacco, Università di Perugia.

Project: *Reactivity and properties of radical cations of aromatic sulfides and sulfoxides generated by laser flash photolysis.*

Collaboration with the group of Prof. Massimo Bietti, Università di Roma "Tor Vergata".

Projects: *Hydrogen atom transfer and electron transfer processes promoted by aminoxyl radicals, Reactivity and properties of radicals and cation radicals*

Collaboration with the group of Prof. Marco Lucarini, Università di Bologna.

Project: *Reactivity and product studies of short-lived aminoxyl radicals.*

XI C Participation at international level

Collaboration with the group of Prof. Juan C. Scaiano, Department of Chemistry and Centre for Catalysis Research and Innovation, University of Ottawa, Canada.

Project: *Synthesis of gold nanoparticles by means of laser ablation and their application to electron transfer processes.*

Collaboration with the group of Prof. Patricia J. Harvey, School of Chemical & Life Sciences, University of Greenwich, London, UK.

Project: *Mechanistic studies of the oxidation promoted by lignin peroxidase*

Collaboration with the group of Prof. Steen Steenken, Max Planck Institute für Strahlenchemie, Muelheim an der Ruhr, Germany.

Project: *Reactivity and properties of radical cations of alkylaromatic compounds and aromatic sulfides generated by pulse radiolysis.*

XI D Participation at national level

Collaboration with the group of Prof. Cinzia Chiappe, Università di Pisa.
Project: *Oxidation of organic compounds with singlet oxygen in ionic liquids.*

Collaboration with the group of Prof. Marco D'Ischia, Università di Napoli Federico II,
Project: *Synthesis, properties and structure-activity relationship of eumelanin polymers.*

Collaboration with the group of Prof. Antonio Faucitano, Università di Pavia.
Project: *EPR studies of aromatic sulfide radical cations*

Collaboration with the group of Prof. Carlo Punta, Politecnico di Milano.
Project: *ecofriendly and sustainable radical oxidative processes.*

Part XII– Participation to Organizing and Scientific Committees of International Congresses.

- EUCHEM Conference on “Organic Free Radicals”, Grottaferrata, Roma, 4-9 Luglio 1998. (Organizing Committee)
- ISRIR 2006 - 20th International Symposium on radical Ion Reactivity, Villa Mondragone Monteporzio Catone) Roma 2-6 Luglio 2006 (Organizing Committee)
- International Conference on Hydrogen Atom Transfer iCHAT 2014, Villa Mondragone (Roma) 22-26 Giugno 2014. (Organizing and Scientific Committee)
- International Conference on Hydrogen Atom Transfer iCHAT 2017, Villa Mondragone (Roma) 2-6 Luglio 2017. (Organizing and Scientific Committee)
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Part XII – Part – XIII Invited lectures (*IL*) and Oral Communications (*OL*) held at Congresses and School

1. *Hydrogen Atom Transfer Processes Promoted by Short-Lived N-oxyl Radicals: Structural and Medium Effect on the Reactivity and Selectivity*”. Osvaldo Lanzalunga. XXXVIII Convegno Nazionale della Divisione di Chimica Organica della SCI. 9-13 September 2018 – Milano. (**OL**)
2. *“Hydrogen Atom Transfer Promoted by Short-Lived Aminoxyl Radicals: a Key Step in N-hydroxy Catalytic Systems”*. Osvaldo Lanzalunga. Free Radical Chemistry @ POLIMI, Radical reactivity applied to Biology, Catalysis, and Materials, 17 February 2017. (**IL**)
3. *“Structural and Medium Effects in the Hydrogen Atom Transfer Processes Promoted by Short-Lived Aminoxyl Radicals”*. Osvaldo Lanzalunga. XXVI Convegno Nazionale della Società Chimica Italiana, Paestum (SA), 10-14 September 2017. (**OL**)
4. *“C-H Oxidation Promoted by Nonheme Imine Based Iron Complexes”*. Osvaldo Lanzalunga. XXXVII Convegno Nazionale della Divisione di Chimica Organica, Mestre, 18-22 September 2016. (**OL**)
5. *“Role of Electron Transfer Processes in the Oxidation of Aromatic Sulfides Promoted by the Nonheme Iron Complex [Fe^{II}(N4Py)](OTf)₂”*. Osvaldo Lanzalunga. 27th International

Symposium on the Organic Chemistry of Sulfur (ISOCS-27), Jena, Germania, 24-29 July 2016. **(OL)**

6. “*Role of Electron Transfer Processes in the N-demethylation of N,N-dimethylanilines and S-oxidation of Aromatic Sulfides Promoted by Nonheme the Iron(IV)-oxo complex $[Fe^{IV}(O)(N4Py)]^{2+}$* ”. Osvaldo Lanzalunga. XXXVI Convegno Nazionale della Divisione di Chimica Organica, Bologna, 13-17 September 2015. **(OL)**
7. “*Hydrogen Atom Transfer from Activated Phenols to Short-Lived Aminoxyl Radicals. The Role of Charge Transfer Contribution from π -Stacking Interactions*”. Osvaldo Lanzalunga, Claudio D’Alfonso, Marco Mazzonna, Massimo Bietti, Michela Salamone. XXXV Convegno Nazionale della Divisione di Chimica Organica, Sassari, 9-13 September 2013. **(OL)**
8. “*Structural Effects on the C-S Bond Cleavage in Aryl Sulfide Radical Cations*”. Osvaldo Lanzalunga Tiziana Del Giacco, Marco Mazzonna, Paolo Mencarelli. 25th International Symposium on the Organic Chemistry of Sulfur (ISOCS-25), Czestochowa, Polonia, 24-29 June 2012. **(IL)**
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11. “*Structure and Activity Relationships in Hemoproteins*”. Winter School on Physical Organic Chemistry (WISPOC 2008) – Bressanone 27/01-01/02 2008. **(IL)**
12. “*Hydrogen Atom Transfer vs Electron Transfer Mechanism in the Oxidations Promoted By N-oxyl Radicals*”. Plenary lecture. Osvaldo Lanzalunga. Gordon Research Conference: Radicals & Radical Ions in Chemistry and Biology, Holderness School, Plymouth, NH USA, 1-6 July 2007. **(IL)**
13. “*Proprietà e Reattività di Radicali Cationi di Solfossidi Aromatici*”. Claudia Aurisicchio, Enrico Baciocchi, Tiziana Del Giacco, Maria Francesca Gerini, Osvaldo Lanzalunga. Cofem-2006 Giornate di Chimica Organica Fisica e Meccanicistica, Catania 21-23 September 2006. **(OL)**
14. “*Rottura del Legame C-S in Radicali Cationi di t-Alchil Fenil Solfuri Generati Mediante Trasferimento Elettronico Fotoindotto*”. Enrico Baciocchi, Tiziane Del Giacco, Maria Francesca Gerini, Osvaldo Lanzalunga. XXX Convegno Nazionale della Divisione di Chimica Organica, Siena, 19-23 September 2005. **(OL)**
15. “*Oxidation of Lignin Models Catalyzed by Lignin Peroxidase. The Fragmentation Pathways*”. Enrico Baciocchi, Massimo Bietti, Claudia Fabbri, Maria Francesca Gerini, Osvaldo Lanzalunga, Simona Mancinelli. Seminar on progress in the EU-project “OXYDELIGN” “Towards efficient oxygen delignification” Espoo, Finlandia, 28 September 2001. **(OL)**
16. “*Time-resolved studies on the reactivity of lignin model compounds*”. Enrico Baciocchi, Massimo Bietti, Maria Francesca Gerini, Osvaldo Lanzalunga, Sten Ljunggren, SteenSteenken.

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19. "*The role of side-chain OH groups in the base-catalyzed fragmentation of arylalkanol and non-phenolic β -O-4 lignin model dimer radical cations generated by pulse radiolysis in aqueous solution*".: Enrico Baciocchi, Massimo Bietti, Mari Francesca Gerini, Osvaldo Lanzalunga, Sten Ljunggren, Steen Steenken. Sixth European Workshop on Lignocellulosic and Pulp, Bordeaux, 3-6 September 2000. (**OL**)
20. "*Radical cations of lignin model compounds generated by pulse radiolysis – a kinetic and product study of the effect of side-chain structure and ring substitution on the rate of carbon-carbon bond cleavage*". Enrico Baciocchi, Massimo Bietti, Osvaldo Lanzalunga, Steen Steenken, Second Annual User Meeting of the PICR Free Radical Research Facility, Manchester (UK), 18-19 September 1998. (**OL**)
21. "*Fragmentation Reactions of Aromatic Sulfide Cation Radicals as Mechanistic Tool to Distinguish Electron Transfer Processes in Enzymatic and Biomimetic Oxidations*". E. Baciocchi, O. Lanzalunga, S. Steenken. Workshop on "Reactive Intermediates in Sulfur Chemistry", Poznan (PL), 23-26 August 1998. (**IL**)
22. "*Ossidazione di Solfuri Aromatici Catalizzata da Citocromo P-450 e da Perossidasi*". E. Baciocchi e O. Lanzalunga. IV Convegno Nazionale di Chimica dei Sistemi e dei Processi Biologici, Siena 24-26 September 1996. (**OL**)
23. "*Radiolisi Pulsata di Solfuri Aromatici in Acqua e Meccanismo di Ossidazione Catalizzata da Perossidasi*". E. Baciocchi, M. Ioele, O. Lanzalunga, S. Malandrucchio e S. Steenken. Cofem-95 Giornate di Chimica Organica Fisica e Meccanicistica, Perugia 24-27 September 1995. (**OL**)
24. "*The Mechanism of the Oxidations of Aromatic Sulfides and Sulfoxides Catalyzed by Cytochrome P-450 and Model Compounds*". E. Baciocchi e O. Lanzalunga. International Union of Pure and Applied Chemistry, 12th Conference on Physical Organic Chemistry, Padova 28 Agosto-2 September 1994. (**OL**)
25. "*Competizione tra Trasferimento di Elettrone e Trasferimento di Idrogeno nella Ossidazione Benzilica Indotta da Manganese Porfirine*" E. Baciocchi, S. Esposito, O. Lanzalunga, A. Monaci. Cofem-92 Giornate di Chimica Organica Fisica e Meccanicistica, Galzignano Terme (PD) 5-8 July 1992. (**OL**)

Furthermore the results of my research work have been presented by me with poster presentations, and by my co-workers with poster and oral presentation in additional 50 communications held at national and international congresses from 1990 to 2018.

Part – XIV Additional information

- Positive judgement in the comparative evaluation for the position of “Professore di I fascia”, SSD CHIM/06, “Organic Chemistry”, Facoltà di Agraria, Università degli Studi del Molise, D.R. 927 - 18 June 2008 (Commission: Prof. G. Cardillo, B. Botta, V. Amico, A. Pochini e L. Mayol).
- Military service completed as Lieutenant of the Technical Corps of the Italian Army (18/4/90-18/7/91) in the chemical laboratory of “Servizio Applicazioni Tecniche Militari - Centro Tecnico Chimico Fisico Biologico” Civitavecchia (RM).

Part – XV Complete list of Publications.

- 1) “Origins of Catalyst Inhibition in the Manganese Catalysed Oxidation of Lignin Model Compounds with H₂O₂”
Alessia Barbieri, Johann B. Kasper, Francesco Mecozzi, Osvaldo Lanzalunga, Wesley R. Browne
ChemSusChem **12**, 3126-3133 (2019)
- 2) “Oxidation of α -amino acids promoted by the phthalimide N-oxyl radical: a kinetic and product study”
Barbara Ticconi, Marco Mazzonna, Osvaldo Lanzalunga, Andrea Lapi
Tetrahedron **75**, 3579-3585 (2019)
- 3) “Coupled X-Ray Absorption/ UV-Vis Monitoring of Fast Oxidation Reactions Involving a Non-Heme Iron Oxo Complex”
Giorgio Capocasa, Francesco Sessa, Francesco Tavani, Giorgio Olivo, Manuel Monte Caballero, Sakura Pascarelli, Osvaldo Lanzalunga, Stefano Di Stefano, Paola D'Angelo
J. Am. Chem. Soc. **141**, 2299-2304 (2019)
- 4) “Evaluation of Polar Effects in Hydrogen Atom Transfer Reactions from Activated Phenols”
Massimo Bietti, Erica Cucinotta, Gino DiLabio, Osvaldo Lanzalunga, Andrea Lapi, Marco Mazzonna, Eduardo Romero Montalvo, Michela Salamone
J. Org. Chem. **84**, 1778-1786 (2019) (2019)
- 5) “Enzyme-like Substrate-Selectivity in C-H Oxidation Enabled by Recognition”
Giorgio Capocasa, Stefano Di Stefano, Osvaldo Lanzalunga, Giorgio Olivo, Miquel Costas.
Chem. Commun. **55**, 917-920 (2019)
- 6) “Photoinduced Release of a Chemical Fuel for Acid-Base Operated Molecular Machines”
Chiara Biagini, Flaminia Di Pietri, Luigi Mandolini, Osvaldo Lanzalunga Stefano Di Stefano.
Chem. Eur. J. **24**, 10122-10127 (2018)
- 7) “Oxidative functionalization of aliphatic and aromatic amino acid derivatives with H₂O₂ catalyzed by a nonheme imine based iron complex”
Barbara Ticconi, Arianna Colcerasa, Stefano Di Stefano, Osvaldo Lanzalunga, Andrea Lapi, Marco Mazzonna, Giorgio Olivo.
RSC Advances **8**, 19144-19151 (2018)
- 8) “Characterization and Fate of Hydrogen-Bonded Free-Radical Intermediates and Their Coupling Products from the Hydrogen Atom Transfer Agent 1,8-Naphthalenediol”
Paola Manini, Massimo Bietti, Marco Galeotti, Michela Salamone, Osvaldo Lanzalunga, Martina M. Cecchini, Samantha Reale, Orlando Crescenzi, Alessandra Napolitano, Francesco De Angelis, Vincenzo Barone, Marco d'Ischia.
ACS Omega **3**, 3918-3927 (2018)
- 9) “Aerobic Oxidation of 4-Alkyl-*N,N*-dimethylbenzylamines Catalyzed by *N*-Hydroxyphthalimide. Protonation Driven Control over Regioselectivity”
Massimo Bietti, Osvaldo Lanzalunga, Andrea Lapi, Teo Martin, Marco Mazzonna, Mariangela Polin, Michela Salamone.
J. Org. Chem. **82**, 5761-5768 (2017)

- 10) "Hydrogen Atom Transfer (HAT) Processes Promoted by the Quinolinimide-*N*-Oxyl Radical. A Kinetic and Theoretical Study"
Gino A. DiLabio, Paola Franchi, Osvaldo Lanzalunga, Andrea Lapi, Fiorella Lucarini, Marco Lucarini, Marco Mazzonna, Viki Kumar Prasad, Barbara Ticconi.
J. Org. Chem. **82**, 6133-6141 (2017)
- 11) "Following a Chemical Reaction in the Ms Timescale by Simultaneous X-ray and UV/Vis Spectroscopy"
Giorgio Olivo, Alessia Barbieri, Valeria Dantignana, Francesco Sessa, Valentina Migliorati, Manuel Monte Caballero, Sakura Pascarelli, Theyencheri Narayanan, Osvaldo Lanzalunga, Stefano Di Stefano, Paola D'Angelo
J. Phys. Chem. Lett. **8**, 2956-2963 (2017)
- 12) "Role of Electron Transfer Processes in the Oxidation of Aryl Sulfides Catalysed by Nonheme Iron Complexes"
Alessia Barbieri, Stefano Di Stefano, Osvaldo Lanzalunga, Andrea Lapi, Marco Mazzonna, Giorgio Olivo
Phosphorus, Sulfur Silicon Rel. Elem. **192**, 241-244 (2017)
- 13) "Direct Hydroxylation of Benzene and Aromatics with H₂O₂ Catalyzed by a Self-Assembled Iron Complex: Evidence for a Metal-based Mechanism"
Giorgio Capocasa, Giorgio Olivo, Alessia Barbieri, Osvaldo Lanzalunga and Stefano Di Stefano
Catal. Sci. Technol. **7**, 5677-5686 (2017)
- 14) "Supramolecular recognition allows remote, site-selective C-H oxidation of methylenic sites in linear amines"
Giorgio Olivo, Giulio Farinelli, Alessia Barbieri, Osvaldo Lanzalunga, Stefano Di Stefano, Miquel Costas
Angew. Chem. Int. Ed. **56**, 16347-16351 (2017)
- 15) "Non-Heme Imine-Based Iron Complexes as Catalysts for Oxidative Processes"
Giorgio Olivo, Osvaldo Lanzalunga, Stefano Di Stefano
Adv. Synth. Catal. **358**, 843-863 (2016).
- 16) "Oxidation of Aryl Diphenylmethyl Sulfides Promoted by a Non-Heme Iron(IV)-Oxo Complex: Evidence for Electron Transfer-Oxygen Transfer Mechanism"
Alessia Barbieri, Rosemilia De Carlo Chimienti, Tiziana Del Giacco, Stefano Di Stefano, Osvaldo Lanzalunga, Andrea Lapi, Marco Mazzonna, Giorgio Olivo, Michela Salamone
J. Org. Chem. **81**, 2513-2520 (2016).
- 17) "Alcohol Oxidation with H₂O₂ Catalyzed by a Cheap and Promptly Available Imine Based Iron Complex"
Giorgio Olivo, Simone Giosia, Alessia Barbieri, Osvaldo Lanzalunga, Stefano Di Stefano
Org. Biomol. Chem. **14**, 10630-10635 (2016).
- 18) "Kinetic Study of the Reaction of the Phthalimide-*N*-Oxyl Radical with Amides: Structural and Medium Effects on the Hydrogen Atom Transfer Reactivity and Selectivity"
Massimo Bietti, Veronica Forcina, Osvaldo Lanzalunga, Andrea Lapi, Teo Martin, Marco Mazzonna, Michela Salamone
J. Org. Chem. **81**, 11924-11931 (2016).

- 19) "Electron Transfer Mechanism in the Oxidation of Aryl 1-Methyl-1-phenylethyl Sulfides Promoted by Nonheme Iron(IV)-Oxo Complexes: The Rate of the Oxygen Rebound Process"
Alessia Barbieri, Tiziana Del Giacco, Stefano Di Stefano, Osvaldo Lanzalunga, Andrea Lapi, Marco Mazzonna, Giorgio Olivo
J. Org. Chem. **81**, 12382-12387 (2016).
- 20) "Photosensitized Oxidation of Aryl Benzyl Sulfoxides. Evidence for Nucleophilic Assistance to the C-S Bond Cleavage of Aryl Benzyl Sulfoxide Radical Cations"
Tiziana Del Giacco, Osvaldo Lanzalunga, Andrea Lapi, Marco Mazzonna, Paolo Mencarelli
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- 21) "Isotope Effect Profiles in the *N*-demethylation of *N,N*-dimethylanilines. A Key to Determine the pK_a of Nonheme Fe(III)-OH Complexes"
Alessia Barbieri, Martina De Gennaro, Stefano Di Stefano, Osvaldo Lanzalunga, Andrea Lapi, Marco Mazzonna, Giorgio Olivo and Barbara Ticconi
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- 22) "C-H Bond Oxidation Catalyzed by an Imine Based Iron Complex: A Mechanistic Insight"
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- 26) "Hydrocarbon Oxidation Catalyzed by a Cheap Nonheme Imine-based Iron(II) Complex"
Giorgio Olivo, Giorgio Arancio, Luigi Mandolini, Osvaldo Lanzalunga, Stefano Di Stefano
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- 32) “A Photodynamic Library of Tetrasulfinylcalix[4]arenes: The Sulfinyl Dance”
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- 35) “Ultraclean custom-derivatized monodisperse gold nanoparticles through laser drop ablation of
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- 36) “DPPH Radical Scavenging Activity of Paracetamol Analogues”
Maria Alessandra Alisi, Mario Brufani, Nicola Cazzolla, Francesca Ceccacci, Patrizia Dragone,
Marco Felici, Guido Furlotti, Barbara Garofalo, Angela La Bella, Osvaldo Lanzalunga,
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- 37) “Structure and C-S Bond Cleavage in Aryl 1-Methyl-1-Arylethyl Sulfide Radical Cations”.
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- 38) “Photoinversion of Sulfoxides as a Source of Diversity in Dynamic Combinatorial Chemistry”
Enrico Bodo, Stefano Di Stefano, Osvaldo Lanzalunga, Luigi Mandolini, Marco Mazzonna,
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- 39) “Time-Resolved Kinetic Study of the Electron Transfer Reactions Between Ring-Substituted
Cumyloxyl Radicals and Alkyl Ferrocenes. Evidence for a Inner-Sphere Mechanism”
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- 42) "*N*-Demethylation of *N,N*-Dimethylanilines by the Benzotriazole-*N*-Oxyl Radical: Evidence for a Two Step Electron Transfer-Proton Transfer Mechanism"
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J. Org. Chem. **75**, 1378-1385 (2010).
- 43) "Electron Transfer Properties of Alkoxy Radicals. A Time-Resolved Kinetic Study of the Reactions of the *tert*-Butoxyl, Cumyloxyl, and Benzyloxyl Radicals with Alkyl Ferrocenes"
Massimo Bietti, Gino A. DiLabio, Osvaldo Lanzalunga, Michela Salamone.
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- 44) "Reaction of Singlet Oxygen with Thioanisole in Ionic Liquid-Acetonitrile Binary Mixtures"
Enrico Baciocchi, Cinzia Chiappe, Tiziana Del Giacco, Chiara Fasciani, Osvaldo Lanzalunga, Andrea Lapi. *Org. Lett.* **12**, 5116-5119 (2010).
- 45) "Stereochemistry of the C-S Bond Cleavage in *Cis*-2-methylcyclopentyl Phenyl Sulfoxide Radical Cation"
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- 47) "Electron Transfer Properties of Short-Lived *N*-oxyl Radicals. Kinetic Study of the Reactions of Benzotriazole-*N*-Oxyl Radicals with Ferrocenes. Comparison with the Phthalimide-*N*-Oxyl Radical"
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Enrico Baciocchi, Alessandra Calcagni, Osvaldo Lanzalunga.
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- 51) "Photosensitized Oxidation of Alkyl Phenyl Sulfoxides. C-S Bond Cleavage in Alkyl Phenyl Sulfoxide Radical Cations"
Enrico Baciocchi, Tiziana Del Giacco, Osvaldo Lanzalunga, Paolo Mencarelli, Barbara Procacci
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- 56) "C-S Bond cleavage in the sensitized photooxygenation of *t*-alkyl phenyl sulfides. The role of superoxide anion"
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