Consiglio Nazionale delle Ricerche

Andrea Barbieri, *Ph.D.*
Senior Researcher

Italian National Research Council (CNR)
Institute for Organic Synthesis and Photoreactivity (ISOF)
Via P. Gobetti 101, 40129 Bologna, Italy
tel.: +39 051 639 9828
fax: +39 051 639 9844
mail: andrea.barbieri@isof.cnr.it
web: https://www.isof.cnr.it/?q=content/barbieri-andrea

WoS Researcher ID: B-8712-2009
Scopus Author ID: 55597086549
Google Scholar: Andrea Barbieri
ORCID: 0000-0002-8841-9521

I was born in 1961 in Modena (Italy). I got a *summa cum laude* **degree in Chemistry in 1985** at the University of Modena (Italy), and a **PhD in Chemical Sciences** at the University of Ferrara (Italy) **in 1992**. In 1997 I joined the Italian National Research Council (CNR) as Researcher, then **Senior Scientist since 2010**. Now, I am working at the Institute for Organic Synthesis and Photoreactivity (ISOF) in Bologna.

I am a **physical chemist** experienced in steady-state and time-resolved optical electronic spectroscopy. Along my career I got acquainted with electrochemical techniques and electron paramagnetic resonance (EPR) spectroscopy.

My current scientific activity is mainly concerned with:

- the study of the **photophysical properties of the excited states in transition metal inorganic and organometallic complexes** (*e.g.*: Re(I), Ru(II), Os(II), Rh(III) and Ir(III)) as potential photosensitizers in DSCs or as active material in electroluminescent devices (OLEDs, LECs);
- the study of the **photoinduced energy transfer processes in polymetallic supramolecular nanoassemblies**, as function of electronic and structural properties of the spacer bridging the metal centres.

To date I have published **85 papers** on ISI journals and **2 book chapters** collecting **2,300 citations** (***h*-index = 24**, from ISI-WoS). I have given invited lectures at Italian and European universities and research centres, and presented communications at national and international conferences and meetings. I have been invited CNRS Research Director at the Univ. Paris VI, IPCM (10/2009 – 01/2010).

I participated several National and European projects. I have been **Coordinator** of the project: H2020-MSCA-IF-749287 (White Light Emitting Lanthanide Metal Complexes for Electroluminescent Materials, WHITELIGHT), and **Principal Investigator** in the projects: H2020-MSCA-RISE-734834 (Engineering optoelectronic interfaces: a global action intersecting fundamental concepts and technology implementation of self-organized organic materials, INFUSION), CNR – Accordo Bilaterale di Cooperazione Scientifica e Tecnologica CNR/CNRS-L, "Development of a Modular Integrated Device for Solar Energy Conversion", ESF-EUROCORES 10-EuroSolarFuels-FP-006 (Modular design of a bioinspired tandem cell for direct solar-to-fuel conversion, SOLARFUELTANDEM), and EU-FP6 STReP NMP3-CT-2006-032636 (Structured scintillators for medical imaging, STRING).

I actively collaborate with renowned researchers from National and International research centers (*e.g.*: H. Amouri, Univ. Paris, FR; R. Ziessel, Univ. Strasbourg, FR).

I act as referee mainly for ACS, RSC and Wiley inorganic chemistry journals; as project evaluator for the Italian Ministry of Education (MIUR), the Georgian Shota Rustaveli National Science Foundation (SRNSF), the Foundation for Polish Science (FNP), the Polish National Science Centre (NCN), the German Academic Exchange Service (DAAD), and the Strasbourg and Beirut Universities. I have been in the evaluation board for PhD Theses at the Univ. of Valencia (Spain), Namur (Belgium), and Paris VI (France).

I received the National Scientific Abilitation to Associate Professor in Inorganic Chemistry in 2013 by the Italian Ministry of Education.

I have supervised 2 PhD and 8 MSc students.

I am member of the ACS, RSC and EPA associations.

January 2017

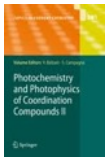
SELECTED PUBLICATIONS

(1) A. Barbieri, E. Bandini, F. Monti, Vakayil K. Praveen, N. Armaroli "The Rise of Near Infrared Emitters: Organic Dyes, Porphyrinoids and Transition Metal Complexes", in *Photoluminescent Materials and Electroluminescent Devices*; Eds. N. Armaroli and H. J. Bolink; Springer: Berlin / Heidelberg, **2016**.
(2) A. Barbieri, B. Ventura, R. Ziessel "Photoinduced energy-transfer dynamics in multichromophoric arrays containing transition metal complexes and organic modules", *Coord. Chem. Rev.* **2012**, *256*, 1732-1741.
(3) A. Barbieri, G. Accorsi, N. Armaroli "Luminescent complexes beyond the platinum group: the d^{10} avenue", *Chem. Commun.* **2008**, 2185-2193.
(4) L. Flamigni, A. Barbieri, C. Sabatini, B. Ventura, F. Barigelletti "Photochemistry and photophysics of coordination compounds: Iridium", in *Photochemistry and Photophysics of Coordination Compounds II*; Eds. V. Balzani and S. Campagna; Springer: Berlin / Heidelberg, **2007**.

LIST OF PUBLICATIONS AND COMMUNICATIONS

Book Chapters

(2) A. Barbieri, E. Bandini, F. Monti, Vakayil K. Praveen, N. Armaroli "The Rise of Near Infrared Emitters: Organic Dyes, Porphyrinoids and Transition Metal Complexes", in *Photoluminescent Materials and Electroluminescent Devices*; Eds. N. Armaroli and H. J. Bolink; Springer: Berlin / Heidelberg, **2016**. DOI: 10.1007/s41061-016-0048-9



(1) L. Flamigni, A. Barbieri, C. Sabatini, B. Ventura, F. Barigelletti "Photochemistry and photophysics of coordination compounds: Iridium", in *Photochemistry and Photophysics of Coordination Compounds II*; Eds. V. Balzani and S. Campagna; Springer: Berlin / Heidelberg, **2007**. DOI: 10.1007/128_2007_131

Papers on ISI journals

(85) A. Nano, M. P. Gullo, B. Ventura, A. Barbieri, N. Armaroli, R. Ziessel "Color-tunable heterodinuclear Pt(II)/B(III) and Pt(II)/Ir(III) arrays with N^O-julolidine ligands", *Inorg. Chem.* **2017**, *56*, 4807-4817.

(84) J. Moussa, A. Loch, L. M. Chamoreau, A. Degli Esposti, E. Bandini, A. Barbieri, H. Amouri "Luminescent cyclometalated platinum complexes with π-bonded catecholate organometallic ligands", *Inorg. Chem.* **2017**, *56*, 2050-2059.

(83) J. de Ruiter, R. Purchase, A. Monti, C. van der Ham, M. P. Gullo, K. Joya, M. D'Angelantonio, A. Barbieri, D. Hetterscheid, H. de Groot, F. Buda "Electrochemical and spectroscopic study of mononuclear ruthenium water oxidation catalysts: a combined experimental and theoretical investigation", *ACS Catalysis* **2016**, *6*, 7340-7349.

(82) A. Baschieri, F. Monti, E. Matteucci, A. Mazzanti, A. Barbieri, N. Armaroli, L. Sambri "A mesoionic carbene as neutral ligand for phosphorescent cationic Ir(III) complexes", *Inorg. Chem.* **2016**, *55*, 7912-7919.

(81) P.-H. Lanoë, J. Chan, G. Gontard, F. Monti, N. Armaroli, A. Barbieri, H. Amouri "Deep-Red phosphorescent Iridium(III) complexes with chromophoric N-heterocyclic carbene ligands: design, photophysical properties, and DFT calculations", *Eur. J. Inorg. Chem.* **2016**, 1631-1634.

(80) J. Moussa, L. M. Chamoreau, M. P. Gullo, A. Degli Esposti, A. Barbieri, H. Amouri "Induced phosphorescence from Pt → Ag and Ag(I)···Ag(I) metallophilic interactions in benzenedithiolatodiimine-Pt_2/Ag_2 clusters: a combined experimental and theoretical investigation", *Dalton Trans.* **2016**, *45*, 2906-2913.

(79) A. Kremer, C. Aurisicchio, F. De Leo, B. Ventura, J. Wouters, N. Armaroli, A. Barbieri, D. Bonifazi "Walking down the chalcogenic group of the periodic table: from singlet to triplet organic emitters", *Chem. Eur. J.* **2015**, *21*, 15377-15387.

(78) F. Monti, A. Baschieri, E. Matteucci, A. Mazzanti, L. Sambri, A. Barbieri, N. Armaroli "A chelating diisocyanide ligand for cyclometalated Ir(III) complexes with strong and tunable luminescence", *Faraday Discuss.* **2015**, *185*, 233-248.

(77) A. Douvali, G. Papaefstathiou, M. P. Gullo, A. Barbieri, A. C. Tsipis, C. D. Malliakas, M. G. Kanatzidis, I. Papadas, G. Armatas, A. G. Hatzidimitriou, T. Lazarides, M. J. Manos "Alkaline earth metal ion/dihydroxy-terephthalate MOFs: structural diversity and unusual luminescent properties", *Inorg. Chem.* **2015**, *54*, 5813-5826.

(76) R. Orlowski, O. Vakuliuk, M. P. Gullo, O. Danylyuk, B. Ventura, B. Koszarna, A. Tarnowska, N. Jaworska, A. Barbieri, D. T. Gryko "Self-assembling corroles", *Chem. Commun.* **2015**, *51*, 8284-8287.

(75) A. Nano, M. P. Gullo, B. Ventura, N. Armaroli, A. Barbieri, R. Ziessel "Panchromatic luminescence from julolidine dyes exhibiting excited state intramolecular proton transfer", *Chem. Commun.* **2015**, *51*, 3351-3354.

(74) H. Sesolis, J. Moussa, G. Gontard, A. Jutand, M. P. Gullo, A. Barbieri, H. Amouri "A unique class of neutral cyclometalated platinum(II) complexes with π-bonded benzenedithiolate: synthesis, molecular structures and tuning of luminescence properties", *Dalton Trans.* **2015**, *44*, 2973-2977.

(73) K. Ocakoglu, T. Krupnik, B. van den Bosch, E. Harputlu, M. P. Gullo, J. D. J. Olmos, S. Yildirimcan, R. K. Gupta, F. Yakuphanoglu, A. Barbieri, J. N. H. Reek, J. Kargul "Photosystem I-based biophotovoltaics on nanostructured hematite", *Adv. Funct. Mater.* **2014**, *24*, 7467-7477.

(72) J. Moussa, L.-M. Chamoreau, A. Degli Esposti, M. P. Gullo, A. Barbieri, H. Amouri "Tuning excited states of bipyridyl platinum(ii) chromophores with **π**-bonded catecholate organometallic ligands: synthesis, structures, TD-DFT calculations and photophysical properties", *Inorg. Chem.* **2014**, *53*, 6624-6633.

(71) A. Damas, H. Sesolis, M. N. Rager, L. M. Chamoreau, M. P. Gullo, A. Barbieri, H. Amouri "Ester-substituted cyclometallated rhodium and iridium coordination assemblies with π-bonded dioxolene ligand: synthesis, structures and luminescent properties", *RSC Adv.* **2014**, *4*, 23740-23748.

(70) F. Di Maria, I. E. Palamà, M. Baroncini, A. Barbieri, A. Bongini, R. Bizzarri, G. Gigli, G. Barbarella "Live cell cytoplasm staining and selective labeling of intracellular proteins by non-toxic cell-permeant thiophene fluorophores", *Org. Biomol. Chem.* **2014**, *12*, 1603-1610.

(69) A. Venturini, A. Barbieri, J. N. H. Reek, D. G. H. Hetterscheid "Catalytic water splitting using an iridium-carbene complex: a theoretical study", *Chem.-Eur. J.* **2014**, *20*, 5358-5368.

(68) M. P. Gullo, J. Batcha Seneclauze, B. Ventura, A. Barbieri, R. Ziessel "Photophysical study of spiro-bifluorene bridged Pt(II), Os(II) and Ir(III) luminescent complexes and supramolecular arrays", *Dalton Trans.* **2013**, *42*, 16818-16828.

(67) T. Bura, M. P. Gullo, B. Ventura, A. Barbieri, R. Ziessel "Multichromophoric arrays arranged around a triptycene scaffold: synthesis and photophysics", *Inorg. Chem.* **2013**, *52*, 8653-8664.

(66) P. P. Mazzeo, L. Maini, D. Braga, G. Valenti, F. Paolucci, M. Marcaccio, A. Barbieri, B. Ventura "Switch on / switch off signal in a MOF-guest crystalline device", *Eur. J. Inorg. Chem.* **2013**, 4459-4465.

(65) A. Damas, M. P. Gullo, M. N. Rager, A. Jutand, A. Barbieri, H. Amouri "Near-infrared room temperature emission from a novel class of Ru(II) heteroleptic complexes with quinonoid organometallic linker", *Chem. Commun.* **2013**, *49*, 3796-3798.

(64) S. Diring, B. Ventura, A. Barbieri, R. Ziessel "Photoinduced energy transfer processes in hybrid organic-inorganic multichromophoric arrays arranged on a truxene-based platform", *Dalton Trans.* **2012**, *41*, 13090-13096.

(63) A. Barbieri, B. Ventura, R. Ziessel "Photoinduced energy-transfer dynamics in multichromophoric arrays containing transition metal complexes and organic modules", *Coord. Chem. Rev.* **2012**, *256*, 1732-1741.

(62) B. Ventura, A. Barbieri, A. Degli Esposti, J. Batcha Seneclauze, R. Ziessel "Spirobifluorene bridged Ir(III) and Os(II) polypyridyl arrays: synthesis, photophysical characterization, and energy transfer dynamics", *Inorg. Chem.* **2012**, *51*, 2832-2840.

(61) A. Damas, B. Ventura, J. Moussa, A. Degli Esposti, L.-M. Chamoreau, A. Barbieri, H. Amouri "Turning on red and near-infrared phosphorescence in octahedral complexes with metalated quinones", *Inorg. Chem.* **2012**, *51*, 1739-1750.

(60) D. Sykes, I. S. Tidmarsh, A. Barbieri, I. V. Sazanovich, J. A. Weinstein, M. D. Ward "d→f energy transfer in a series of Ir^{III}/Eu^{III} dyads: energy-transfer mechanisms and white-light emission", *Inorg. Chem.* **2011**, *50*, 11323-11339.

(59) R. D. Costa, F. Monti, G. Accorsi, A. Barbieri, H. J. Bolink, E. Ortì, N. Armaroli "Photophysical properties of charged cy-

clometalated Ir(III) complexes: a joint theoretical and experimental study", *Inorg. Chem.* **2011**, *50*, 7229-7238.
(58) J. Zeitouny, A. Belbakra, A. Llanes-Pallas, A. Barbieri, N. Armaroli, D. Bonifazi "On the route to mimic natural movements: synthesis and photophysicalproperties of a molecular arachnoid", *Chem. Commun.* **2011**, *47*, 451-453.
(57) A. Damas, B. Ventura, M. R. Axet, A. Degli Esposti, L.-M. Chamoreau, A. Barbieri, H. Amouri "Organometallic quinonoid linkers: A versatile tether for the design of panchromatic Ru(II) heteroleptic complexes", *Inorg. Chem.* **2010**, *49*, 10762-10764.
(56) L. Flamigni, B. Ventura, A. Barbieri, H. Langhals, F. Wetzel, K. Fuchs, A. Walter "On-off switching of the perylene tetracarboxylic bisimide luminescence via substitution at the N position by electron rich mono-, di- and tri-methoxybenzenes", *Chem.-Eur. J.* **2010**, *16*, 13406-13416.
(55) B. Ventura, A. Barbieri, F. Barigelletti, S. Diring, R. Ziessel "Energy transfer dynamics in multichromophoric arrays engineered from phosphorescent Pt^{II} / Ru^{II} / Os^{II} centers linked to a central truxene platform", *Inorg. Chem.* **2010**, *49*, 8333-8346.
(54) S. Diring, R. Ziessel, F. Barigelletti, A. Barbieri, B. Ventura "A Preorganized Truxene Platform for Phosphorescent $[Ru(bpy)_2]$ and $[Os(bpy)_2]$ Metal Centers: a Clear-cut Switch from Förster- to Dexter-type Energy Transfer Mechanism", *Chem.-Eur. J.* **2010**, *16*, 9226-9236.
(53) C. Aurisicchio, B. Ventura, D. Bonifazi, A. Barbieri "Photophysical properties of tolan wavelength shifters in solution and embedded in polymeric organic thin films", *J. Phys. Chem. C* **2009**, *113*, 17927-17935.
(52) B. Ventura, A. Barbieri, A. Zanelli, F. Barigelletti, J. Batcha Seneclauze, S. Diring, R. Ziessel "Excited-state dynamics in a dyad comprising terpyridine-platinum(II) ethynylene linked to pyrrolidino-[60]fullerene", *Inorg. Chem.* **2009**, *48*, 6409-6416.
(51) T. Lazarides, N. M. Tart, D. Sykes, S. Faulkner, A. Barbieri, M. D. Ward "$[Ru(bipy)_3]^{2+}$ and $[Os(bipy)_3]^{2+}$ chromophores as sensitisers for near-infrared luminescence from Yb(III) and Nd(III) in d/f dyads: contributions from Förster, Dexter, and redox-based energy-transfer mechanisms", *Dalton Trans.* **2009**, 3971-3979.
(50) T. Lazarides, D. Sykes, S. Faulkner, A. Barbieri, M. D. Ward "On the mechanism of d-f energy-transfer in Ru^{II}/Ln^{III} and Os^{II}/Ln^{III} dyads: Dexter-type energy-transfer over a distance of 20 Å", *Chem.-Eur. J.* **2008**, *14*, 9389-9399.
(49) B. Ventura, A. Barbieri, F. Barigelletti, J. Batcha Seneclauze, P. Retailleau, R. Ziessel "Trichromophoric systems from square-planar Pt-ethynylbipyridine and octahedral Ru- and Os- bipyridine centers: syntheses, structures, electrochemical behavior, and bipartition of energy transfer", *Inorg. Chem.* **2008**, *47*, 7048-7058.
(48) A. Barbieri, G. Accorsi, N. Armaroli "Luminescent complexes beyond the platinum group: the d^{10} avenue", *Chem. Commun.* **2008**, 2185-2193.
(47) J. B. Waern, C. Desmarets, L.-M. Chamoreau, H. Amouri, A. Barbieri, C. Sabatini, B. Ventura, F. Barigelletti "Luminescent cyclometalated Rh(III), Ir(III) and $(DIP)_2Ru(II)$ complexes with carboxylated bipyridyl ligands: synthesis, X-ray molecular structure and photophysical properties", *Inorg. Chem.* **2008**, *47*, 3340-3348.
(46) R. Ziessel, J. Batcha Seneclauze, B. Ventura, A. Barbieri, F. Barigelletti "Photoinduced energy transfer in multichromophores based on planar Pt-bipyridine-acetylide and octahedral Ru-bipyridine centres", *Dalton Trans.* **2008**, 1686-1688.
(45) C. Goze, C. Sabatini, A. Barbieri, F. Barigelletti, R. Ziessel "Synthesis, electrochemical and optical properties of Ru(II)-diphenylphenanthroline-ethynyl-pyrene-phenanthroline systems", *Eur. J. Inorg. Chem.* **2008**, 1293-1299.
(44) T. Lazarides, G. M. Davies, H. Adams, C. Sabatini, F. Barigelletti, A. Barbieri, S. J. A. Pope, S. Faulkner, M. D. Ward "Ligand-field excited states of hexacyanochromate and hexacyanocobaltate as sensitisers for near-infrared luminescence from Nd(III) and Yb(III) in cyanide-bridged d-f assemblies", *Photochem. Photobiol. Sci.* **2007**, *6*, 1152-1157.
(43) C. Goze, C. Sabatini, A. Barbieri, F. Barigelletti, R. Ziessel "Ruthenium-terpyridine complexes with multiple ethynylpyrenyl or ethynyltoluyl subunits: X-ray structure, redox and spectroscopic properties", *Inorg. Chem.* **2007**, *46*, 7341-7350.
(42) A. Auffrant, A. Barbieri, F. Barigelletti, J. Lacour, P. Mobian, J.-P. Collin, J.-P. Sauvage, B. Ventura "Bimetallic Iridium(III) complexes consisting of $Ir(ppy)_2$ units (ppy : 2-phenyl-pyridine) and two laterally-connected N^N chelates as bridge : synthesis, separation and photophysical properties", *Inorg. Chem.* **2007**, *46*, 6911-6919.
(41) H. Amouri, J. B. Waern, R. Caspar, A. Barbieri, C. Sabatini, A. Zanelli, F. Barigelletti "*cis-trans* photoisomerization in $[Ru(DIP)_2(MeOH)_2][OTf]_2$: synthesis, NMR, X-ray structure of *trans*-isomer and photophysical properties", *Dalton Trans.* **2007**, 2179-2186.
(40) M. Zambianchi, A. Barbieri, A. Ventola, L. Favaretto, C. Bettini, M. Galeotti, G. Barbarella "Testing oligothiophene fluorophores under physiological conditions. Preparation and optical characterization of the conjugates of bovine Serum Albumin with oligothiophene *N*-hydroxysuccinimidyl esters", *Bioconjugate Chem.* **2007**, *18*, 1004-1009.
(39) D. Mishra, A. Barbieri, C. Sabatini, M. G. B. Drew, H. M. Figgie, W. S. Sheldrick, S. K. Chattopadhyay "Tuning of redox potential and visible absorption band of ruthenium (II) complexes of (benzimidazolyl) derivatives: synthesis, characterization, spectroscopic and redox properties, X-ray structures and DFT calculations", *Inorg. Chim. Acta* **2007**, *360*, 2231-2244.
(38) C. Sabatini, A. Barbieri, F. Barigelletti, K. J. Armb, J. A. G. Williams "Fast, through-bond mediated energy transfer from Ir(III) to Ru(II) in di- and tetranuclear heterometallic assemblies: elucidation of a two-step Ir → Ir → Ru energy transfer process", *Photochem. Photobiol. Sci.* **2007**, *6*, 397-405.
(37) A. Belbakra, S. Goeb, A. De Nicola, R. Ziessel, C. Sabatini, A. Barbieri, F. Barigelletti "Spectroscopic and redox properties of novel d^6-complexes engineered from all *Z*-ethenylthiophene-bipyridine ligands", *Inorg. Chem.* **2007**, *46*, 839-847.
(36) T. Lazarides, A. Barbieri, C. Sabatini, F. Barigelletti, H. Adams, M. D. Ward "Photoinduced energy transfer between Re(I) and Ru(II) termini connected through a new *exo-ditopic* bis-phenantroline ligand fused to a central macrocycle spacer. Synthesis, structure, and electrochemical and photophysical properties", *Inorg. Chim. Acta* **2007**, *360*, 814-824.
(35) A. Auffrant, A. Barbieri, F. Barigelletti, J.-P. Collin, L. Flamigni, C. Sabatini, J.-P.Sauvage "Dinuclear Iridium(III) complexes consisting of back-to-back tpy-$(ph)_n$-tpy bridging ligands (n= 0, 1 or 2) and terminal cyclometallating tridentate N-C-N ligands", *Inorg. Chem.* **2006**, *45*, 10990-10997.
(34) C. Ferreri, S. Pierotti, A. Barbieri, L. Zambonin, L. Landi, S. Rasi, P. L. Luisi, F. Barigelletti, C. Chatgilialoglu "Comparison of phosphatidylcholine vesicle properties related to geometrical isomerism", *Photochem. Photobiol.*, **2006**, *82*, 274-280.
(33) S. Goeb, A. De Nicola, R. Ziessel, C. Sabatini, A. Barbieri, F. Barigelletti "Energy transfer in hybrids based on a thiophene-substituted ethynylbipyridine dimer decorated with Re(I), Ru(II), and Os(II) units", *Inorg. Chem.*, **2006**, *45*, 1173-1183.
(32) C. Ferreri, S. Pierotti, C. Chatgilialoglu, A. Barbieri, F. Barigelletti "Probing the influence of *cis-trans* isomers on model lipid membrane fluidity using *cis*-parinaric acid and a stop-flow technique", *Chem. Commun.* **2006**, 529-531.
(31) A. Barbieri, B. Ventura, L. Flamigni, F. Barigelletti, G. Fuhrmann, P. Bäuerle, S. Goeb, R. Ziessel "Binuclear wirelike dimers based on Ruthenium(II)-bipyridine units linked by ethynylene-oligothiophene-ethynylene bridges", *Inorg. Chem.* **2005**, *44*, 8033-8043.

(30) S. D. Bergman, D. Gut, M. Kol, C. Sabatini, A. Barbieri, F. Barigelletti "Eilatin complexes of Ruthenium and Osmium. Synthesis, electrochemical behavior, and near-IR luminescence", *Inorg. Chem.* **2005**, *44*, 7943-7950.
(29) S. D. Bergman, I. Goldberg, A. Barbieri, M. Kol "Mononuclear and dinuclear complexes of isoeilatin", *Inorg. Chem.* **2005**, *44*, 2513-2523.
(28) R. Ziessel, P. Bäuerle, M. Ammann, A. Barbieri, F. Barigelletti "Exciton-like energy collection in an oligothiophene wire end-capped by Ru- and Os-polypyridine chromophores", *Chem. Commun.* **2005**, 802-804.
(27) A. Barbieri, B. Ventura, F. Barigelletti, A. De Nicola, M. Quesada, R. Ziessel "Mononuclear and binuclear wirelike Ruthenium(II) complexes with oligo-diethynyl-thiophene bridged back-to-back terpyridine ligands: synthesis and electrochemical and photophysical properties", *Inorg. Chem.* **2004**, *43*, 7359-7368.
(26) M. Previati, I. Lanzoni, E. Corbacella, S. Magosso, S. Giuffrè, F. Francioso, D. Arcelli, S. Volinia, A. Barbieri, S. Hatzopoulos, S. Capitani, A. Martini "RNA expression induced by cisplatin in an organ of Corti-derived immortalized cell line", *Hear. Res.* **2004**, *196*, 8-18.
(25) C. Shaffner-Hamann, A. von Zelewsky, A. Barbieri, F. Barigelletti, G. Muller, J. Riehl, A. Neels "Diastereoselective formation of chiral tris-cyclometalated Iridium(III) complexes: characterization and photophysical properties", *J. Am. Chem. Soc.* **2004**, *126*, 9339-9348.
(24) E. Polo, A. Barbieri, O. Traverso "From zirconium to titanium: the effect of the metal in *t*-butylacrylate photoinitiated polymerisation", *New J. Chem.* **2004**, *28*, 652-656.
(23) S. D. Bergman, I. Goldberg, A. Barbieri, F. Barigelletti, M. Kol "Mononuclear and dinuclear complexes of dibenzoeilatin: Synthesis, structure, and electrochemical and photophysical properties", *Inorg. Chem.* **2004**, *43*, 2355-2367.
(22) N. M. Shavaleev, A. Barbieri, Z. R. Bell, M. D. Ward, F. Barigelletti "New ligands in the 2,2'-dipyridylamine series and their Re(I) complexes; synthesis, structures and luminescence properties", *New J. Chem.* **2004**, *28*, 398-405.
(21) E. Polo, A. Barbieri, O. Traverso "The effect of phenyl substituents on the activity of some zirconocene photoinitiators", *Eur. J. Inorg. Chem.* **2003**, 324-330.
(20) K. Szaciłowski, A. Wanat, A. Barbieri, E. Wasielewska, M. Witko, G. Stochel, Z. Stasicka "Reactions of the $[Fe(CN)_5NO]^{2-}$ complex with biologically relevant thiols", *New J. Chem.* **2002**, *26*, 1495-1502.
(19) S. Scalia, S. Simeoni, A. Barbieri, S. Sostero "Influence of hydroxypropyl-β-cyclodextrin on photoinduced free radical production by the sunscreen agent, butyl-methoxydibenzoylmethane", *J. Pharm. Pharmacol.* **2002**, *54*, 1553-1558.
(18) E. Polo, A. Barbieri, S. Sostero, M. L. H. Green "Zirconocenes as photoinitiators for free-radical polymerisation of acrylates", *Eur. J. Inorg. Chem.* **2002**, 405-409.
(17) G. A. Lawrance, M. Maeder, Y. M. Neuhold, K. Szaciłowski, A. Barbieri, Z. Stasicka "An electrospray ionization mass spectrometry study of the nitroprusside-cation-thiolate system", *J. Chem. Soc., Dalton Trans.* **2002**, 3649-3655.
(16) K. Szaciłowski, J. Oszajca, A. Barbieri, A. Karocki, Z. Sojka, S. Sostero, R. Boaretto, Z. Stasicka "Photochemistry of the $[Fe(CN)_5N(O)SR]^{3-}$ complex - A mechanistic study", *J. Photochem. Photobiol. A: Chemistry* **2001**, *143*, 99-108.
(15) S. Pinamonti, L. Venturoli, M. Leis, M. Chicca, A. Barbieri, S. Sostero, F. Ravenna, L. Daffonchio, R. Novellini, A. Ciaccia "Antioxidant activity of carbocysteine lysine salt monohydrate", *Panminerva Medica* **2001**, *43*, 215-218.
(14) A. Barbieri, A. Droghetti, S. Sostero, O. Traverso "Photochemistry of *ansa*-zirconocenes: ethylene-bis(1-indenyl)- and ethylene-bis(4,7-dimethyl-1-indenyl) zirconium dichlorides", *J. Photochem. Photobiol. A: Chemistry* **1999**, *129*, 137-142.
(13) S. Pinamonti, M. Leis, A. Barbieri, D. Leoni, M. Muzzoli, S. Sostero, M. Chicca, A. Carrieri, F. Ravenna, L. M. Fabbri, A. Ciaccia "Detection of xanthine oxidase activity products by EPR and HPLC in bronchoalveolar lavage fluid from patients with chronic obstructive pulmonary disease", *Free Rad. Biol. Med.* **1998**, *25*, 771-779.
(12) A. B. Boscoletto, F. Gottardi, L. Milan, P. Pannocchia, V. Tartari, M. Tavan, R. Amadelli, A. De Battisti, A. Barbieri, D. Patracchini, G. Battaglin "Electrochemical treatment of bisphenol-A containing wastewaters", *J. Appl. Electrochem.* **1994**, *24*, 1052-1058.
(11) A. Benedetti, P. Riello, G. Battaglin, A. De Battisti, A. Barbieri "Physicochemical properties of thermally prepared Ti-supported IrO_2+ZrO_2 electrocatalysts", *J. Electroanal. Chem.* **1994**, *376*, 195-202.
(10) S. Daolio, B. Facchin, C. Pagura, A. De Battisti, A. Barbieri "Secondary-Ion Mass-Spectrometry methodology and surface-chemistry of mixed-oxide electrodes - modifications induced by noble-metal content", *Rapid Commun. Mass Spectrom.* **1994**, *8*, 659-665.
(9) S. Daolio, B. Facchin, C. Pagura, A. De Battisti, A. Barbieri, J. Kristof "Characterization of RuO_2-based film electrodes by Secondary-Ion Mass-Spectrometry", *J. Mater. Chem.* **1994**, *4*, 1255-1258.
(8) J. Kristof, J. Liszi, A. De Battisti, A. Barbieri, P. Szabo "Thermoanalytical investigation of the formation of RuO_2-based mixed-oxide electrodes", *Mater. Chem. Phys.* **1994**, *37*, 23-28.
(7) S. Daolio, B. Facchin, C. Pagura, A; De Battisti, A. Barbieri "Surface chemical changes of mixed-oxide films in Cl_2 anodic production", *Rapid Commun. Mass Spectrom.* **1993**, *7*, 887-890.
(6) J. Kristof, J. Liszi, P. Szabo, A. Barbieri, A. De Battisti "Thermoanalytical investigation on the formation of IrO_2-based mixed-oxide coatings", *J. Appl. Electrochem.* **1993**, *23*, 615-624.
(5) B. E. Conway, P. Gu, A. De Battisti, A. Barbieri, G. Battaglin "Behavior of the absorbed Cl· intermediate in anodic Cl_2 evolution at thin-film RuO_2 surfaces", *J. Mater. Chem.* **1991**, *1*, 725-734.
(4) G. Battaglin, A. De Battisti, A. Barbieri, A. Giatti, A. Marchi "Characterization of supported mixed-oxide electrocatalysts by ion-beam techniques", *Surf. Sci.* **1991**, *251*, 73-77.
(3) A. De Battisti, A. Barbieri, A. Giatti, G. Battaglin, S. Daolio, A. B. Boscoletto "Depth profiles and electrochemical properties of IrO_2 electrocatalysts stabilized with TiO_2", *J. Mater. Chem.* **1991**, *1*, 191-195.
(2) R. Andreoli, A. Barbieri, L. Benedetti, C. Fontanesi, G. B. Gavioli "Molecular-structure interfacial activity relationship of N-substituted amino-acids - Adsorption of N-dansylglycine at the mercury aqueous solution interface", *J. Electroanal. Chem.* **1988**, *251*, 201-215.
(1) R. Andreoli, A. Barbieri, L. Benedetti, G. Borghesani, G. Gavioli "Adsorption of N-tosylglycine at the Hg aqueous-solution interface at various pH values", *Electrochim. Acta* **1987**, *32*, 325-330.

Abstracts & Proceedings on ISI journals

(9) H. Amouri, A. Damas, J. Moussa, A. Barbieri, L. M. Chamoreau "Coordination assemblies based on quinonoid organometallic linkers: Design, structure and useful luminescent properties", *Abstr. Pap. Am. Chem. Soc.* **2011**, *241*, 47-INORG.
(8) G. Accorsi, N. Armaroli, A. Listorti, A. Barbieri "Key factors influencing the luminescence of Cu(I) complexes", *Luminescence* **2008**, *23*, 192–193.
(7) M. Chicca, M. Borghi, G. Golfetto, M. Leis, A. Barbieri, C. Veronesi, A. Sebastiani, S. Pinamonti "Production of oxygen radicals by human corneal stroma vaporized during excimer laser photorefractive keratectomy", *Free Radic. Biol. Med.* **2001**, *31*, S120.
(6) M. Chicca, C. Pizzirani, M. Leis, A. Barbieri, S. Sostero, A. Papi, A. Ciaccia, S. Pinamonti "Comparison of oxygen radical production in bronchoalveolar lavage fluid and expectorate fluid from

patients with chronic obstructive pulmonary disease", *Free Radic. Biol. Med.* **2001**, *31*, S111.
(5) M. Chicca, L. Venturoli, A. Barbieri, L. Daffonchio, R. Novellini, A. Ciaccia, A. Papi, S. Pinamonti "Evaluation of antiradical activity of carbocysteine lysine salt", *Free Radic. Biol. Med.* **2001**, *31*, S111.
(4) M. Chicca, A. Barbieri, D. Mucchi, M. Leis, M. Borghi, F. De Panfilis, A. Costa, S. Pinamonti "Electron spin resonance analysis of lipid radical production in palm oil fractions", *Free Radic. Biol. Med.* **2001**, *31*, S29.
(3) M. Chicca, M. Borghi, M. Leis, L. Congiu, A. Barbieri, S. Pinamonti "Photoablation of human tissue by excimer laser during photorefractive keratectomy produces oxygen radicals and DNA fragments", *Free Radic. Biol. Med.* **2000**, *29*, S106.
(2) M. Chicca, A. Barbieri, G. Golfetto, G. Cosia, G. Lamberti, A. Sebastiani, M. Leis, S. Pinamonti "Oxygen radical production from human corneal tissue during excimer laser photorefractive keratectomy", *Free Radic. Biol. Med.* **1999**, *27*, S92.
(1) S. Pinamonti, A. Barbieri, M. Leis, A. Ciaccia, M. Chicca "Antiradical activity of different thiolic compounds evaluated by EPR", *Free Radic. Biol. Med.* **1998**, *25*, S37.

Communications & Invited lectures

(26) "Near Infrared emitting metal complexes", *International workshop on light activated nanostructures*, Bologna (IT), 16 May **2017**.
(25) "Photonics for Energy, Environment and Life care (PhEEL) at ISOF-CNR: Development of a Modular Integrated Device for Solar Energy Conversion", *Department of Chemistry, American University of Beirut,* Beirut (LB), 16 Nov. **2016**.
(24) "Photochemical techniques", *3rd CYCLON-HIT Summer School: Photoactivable Antibacterials – From Basic Concepts to Practical Applications*, Bologna (IT), 26-28 Sept. **2016**.
(23) "Ruthenium and Iridium catalysts for water oxydation: characterisation of reaction intermediates and theoretical study of the mechanism", *INIFTA, CONICET,* La Plata (AR), 12 Feb. **2016**.
(22) "On the route to metal-free phosphors", *Progress in Electromagnetics Research Symposium (PIERS 2015)*, Prague (CZ), 6-9 July **2015**.
(21) "Photoinduced energy transfer in multichromophoric supramolecular arrays", *Dipartimento di Biotecnologie, Università di Verona,* Verona (IT), 22 May **2014**.
(20) "NIR emitting transition metal complexes", *XIVth International Krutyn Summer School – Optical Lanthanide Materials: New Horizons by Tailored Design*, Krutyn (PL), 11-17 Jun. **2013**.
(19) "Techniques for the measurement of photoluminescence quantum yield and lifetime", *XIVth International Krutyn Summer School – Optical Lanthanide Materials: New Horizons by Tailored Design*, Krutyn (PL), 11-17 Jun. **2013**.
(18) "Basic aspects of energy transfer processes", *XIVth International Krutyn Summer School – Optical Lanthanide Materials: New Horizons by Tailored Design*, Krutyn (PL), 11-17 Jun. **2013**.
(17) "Photophysics of Luminescent Molecular Materials: Fundamentals and Applications", *XIth International Krutyn Summer School – Cutting Edge Luminescent Materials: Shifting the Frontiers*, Krutyn (PL), 23-29 Sept. **2012**.
(16) "Photoinduced energy transfer processes in hybrid organic-inorganic multichromophoric arrays arranged on a truxene-based platform", *Inorganic Photophysics and Photochemistry – Fundamentals and Applications: Dalton Discussions*, Sheffield (UK), 10-12 Sept. **2012**.
(15) "L'evoluzione delle strutture chimiche del CNR ed il loro futuro. Situazione della ricerca ed occupazionale degli Istituti del CNR nell'Area della Ricerca di Bologna", *Seminario su: La situazione della Chimica in Bologna e in Italia*, Bologna (IT), 9 Mar. **2012**.
(14) "Photoinduced energy transfer in multichromophoric supramolecular arrays", *Dept. Chemistry, FUNDP,* Namur (BE), 26 Oct. **2011**.
(13) "Photochemical techniques", *2nd CYCLON Summer School: Photochemistry and Applications in Photoactivable Anticancer Drugs*, Bologna (IT), 26-28 Sept. **2011**.
(12) "Energy transfer in multichromophoric supramolecular arrays based on transition metal and lanthanide complexes connected through organic bridging ligands", *PhD School on Molecular Chemistry, Univ. Paris VI*, Paris (FR), 18 Oct. **2010**.
(11) "Energy transfer in multichromophoric supramolecular arrays based on transition metal and lanthanide complexes connected through organic bridging ligands", *Workshop on Luminescence of Inorganic Materials and Bioimaging: Metal-to-Metal Energy and Electron Transfer*, Erice (IT), 22-28 Jun. **2010**.
(10) "A preorganized truxene platform for phosphorescent $\{Ru(bipy)_2\}$ and $\{Os(bipy)_2\}$ metal centers", *2nd France-Italy Symposium on Photosciences (FISPHOTON2009)*, Marseille (FR), 7-10 Dec. **2009**.
(9) "La Ricerca Fotochimica Applicata allo Sviluppo di Dispositivi per Conversione Energetica ad Alta Efficienza", *Premio Sapio per la Ricerca Italiana 2008*, Ferrara (IT), 27 Oct. **2008**.
(8) "Steady-state and time-resolved emission anisotropy: selected applications", Photophysical, sensing, and chiroptical properties of non-covalent molecular assemblies, *COST WG D31-0006-04 Meeting*, Bologna (IT), 31 May-1 Jun. **2007**.
(7) "Energy transfer in large conjugated systems", *Dept. Organic Chemistry, Univ. Valencia*, Valencia (SP), 26 Apr. **2007**.
(6) "La ricerca fotochimica applicata allo sviluppo di dispositivi elettronici molecolari per conversione energetica, illuminazione, sensoristica", *Ready to Market corner, Research to Business (R2B)*, Bologna (IT), 11 May **2006**.
(5) "Overview on OLED Technology for Lighting Applications", *Dipartimento di Scienze per l'Architettura, Università di Genova*, Genova (IT), 12 Jan. **2006**.
(4) "Sorvolando Eilat", *Convegno Nazionale di Fotochimica 2005*, Assisi (IT), 15-17 Dec. **2005**.
(3) "Length dependent energy transfer in Ruthenium polypyridine end-capped oligothiophene nanowires", *VII Congresso Nazionale di Chimica Supramolecolare*, Firenze (IT), 4-7 Sept. **2005**.
(2) "Modulation of photophysics of binuclear transition metal complexes by effect of bridging ligands containing crown units", *COST WG D31-0006-04 Kick-off Meeting*, Sheffield (GB), 19-20 May **2005**.
(1) "Energy transfer from terminal Ru- to Os-polypyridine chromophores connected through polythiophene molecular wires", *Convegno Nazionale di Fotochimica 2004*, Sirmione (IT), 16-18 Dec. **2004**.

Participation to research projects

(15) H2020 – MSCA-IF-2016-749287, "White Light Emitting Lanthanide Metal Complexes for Electroluminescent Materials (WHITELIGHT)", 09/2017 – 08/2019 (24 months), **Coordinator**.
(14) H2020 – MSCA-RISE-734834, "Engineering optoelectronic interfaces: a global action intersecting fundamental concepts and technology implementation of self-organized organic materials (INFUSION)", 01/2017 – 12/2020 (48 months), **Principal Investigator**.
(13) CNR – Accordo Bilaterale di Cooperazione Scientifica e Tecnologica CNR/CNRS-L, "Development of a Modular Integrated Device for Solar Energy Conversion", 01/2016 – 12/2017 (24 months), **Principal Investigator**.
(12) CNR, "Photonics for Health, Energy, and the Environment (PHEEL)", 01/2016 – to date, **Participant**.
(11) CNR – Accordo Bilaterale di Cooperazione Scientifica e Tecnologica CNR/CONICET, "Carbon dioxide reduction on photoca-

talytic nanomaterials", 04/2015 – 03/2017 (24 months), **Participant**.
(10) MIUR – Progetto Bandiera NANOMAX, "Integrable sensors for pathological biomarkers diagnosis (N-CHEM)", 01/2012 – 12/2016 (60 months), **Participant**.
(9) ESF – EUROCORES 10_EuroSolarFuels_FP_006, "Modular Design of a Bio-Inspired Tandem Cell for Direct Solar-to-Fuel Conversion (SOLARFUELTANDEM)", 04/2011 – 03/2014 (36 months), **Principal Investigator**.
(8) FP7 – ICT-248043, "Cost-Efficient Lighting devices based on Liquid processes and ionic Organometallic complexes (CELLO)", 01/2010 – 12/2012 (36 months), **Participant**.
(7) MIUR – FIRB-RBIP06JWBH, "Sviluppo di componenti e soluzioni tecnologiche integrate per Display di nuova generazione (NODIS)", 07/2007 – 06/2010 (36 months), **Participant**.
(6) MIUR – FIRB-RBIP0642YL, "Sorgenti di luce innovative ad alta efficienza per dispositivi illuminanti a stato solido con impiego civile ed automotive (LUCI)", 07/2007 – 06/2010 (36 months), **Participant**.
(5) CNR – PM.P04.P010, "Materiali Avanzati per la COnversione di energia Luminosa (MACOL)", 01/2007 – 12/2015 (108 months), **Participant**.
(4) FP6 – NMP3-CT-2006-032636, "Structured Scintillators for Medical Imaging (STRING)", 09/2006 – 02/2010 (42 months), **Principal Investigator**.
(3) ESF – COST D31/0006/04, "Photophysical, sensing, and chiroptical properties of non-covalent molecular assemblies", 11/2004 – 02/2009 (52 months), **Participant**.
(2) FP6 – IST-2002-004607, "Organic LEDs for ICT and lighting applications (OLLA)", 10/2004 – 06/2008 (45 months), **Participant**.
(1) MIUR – FIRB-RBNE019H9K, "Manipolazione molecolare per macchine nanometriche", 01/2003 – 12/2006 (48 months), **Participant**.