FORMATO EUROPEO PER IL CURRICULUM VITAE

INFORMAZIONI PERSONALI

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Nazionalità	Italiana
Data di nascita	30-10-1950

ESPERIENZA LAVORATIVA

• Date (dal 2000 – al 2019)	**INSEGNAMENTI DI CHIMICA GENERALE E INORGANICA E DI CHIMICA INORGANICA AVANZATA, CORSO DI LAUREA IN CHIMICA**
• Nome e indirizzo del datore di lavoro	Dipartimento di Scienze Chimiche e Farmaceutiche
• Tipo di azienda o settore	Università di Ferrara
• Tipo di impiego	Professore Ordinario di Chimica Generale e Inorganica in quiescenza dal 1 Gennaio 2020
• Principali mansioni e responsabilità	Coordinatore della ricerca nell'ambito Inorganico-Fotochimico
• Date (dal 2018 – al 2019)	**INSEGNAMENTO DI CHIMICA , CORSO DI LAUREA IN GEOLOGIA**
• Nome e indirizzo del datore di lavoro	Dipartimento di Scienze Della Terra
• Tipo di azienda o settore	Università di Ferrara
• Tipo di impiego	Professore Ordinario di Chimica Generale e Inorganica
• Date (dal 2010 – al 2019)	Coordinatore del Dottorato in Scienze Chimiche
• Date (dal 2003 – al 2009)	Direttore del Dipartimento di Scienze Chimiche Università di Ferrara

Per ulteriori informazioni:
www.cedefop.eu.int/transparency
www.europa.eu.int/comm/education/index_it.html
www.eurescv-search.com

• Date (dal 1995 – al 2000)	**INSEGNAMENTO DI CHIMICA INORGANICA II , CORSO DI LAUREA IN CHIMICA**
• Nome e indirizzo del datore di lavoro	Dipartimento di Scienze Chimiche
• Tipo di azienda o settore	Università di Ferrara
• Tipo di impiego	Professore Associato di Chimica Generale e Inorganica, Facoltà di Scienze Matematiche, Fisiche e Naturali
• Date (dal 1985 – al 2000)	**INSEGNAMENTO DI CHIMICA DEI COMPOSTI DI COORDINAZIONE, CORSO DI LAUREA IN CHIMICA**
• Nome e indirizzo del datore di lavoro	Dipartimento di Scienze Chimiche
• Tipo di azienda o settore	Università di Ferrara
• Tipo di impiego	Professore Associato di Chimica Generale e Inorganica, Facoltà di Scienze Matematiche, Fisiche e Naturali
• Date (dal 1979 – al 1985)	**INSEGNAMENTO DI SPETTROSCOPIA MOLECOLARE, CORSO DI LAUREA IN CHIMICA**
• Nome e indirizzo del datore di lavoro	Dipartimento di Scienze Chimiche
• Tipo di azienda o settore	Università di Ferrara
• Tipo di impiego	Professore Incaricato di Chimica Generale e Inorganica, Facoltà di Scienze Matematiche, Fisiche e Naturali
• Date (dal 1979 – al 1985)	**INSEGNAMENTO DI SPETTROSCOPIA MOLECOLARE, CORSO DI LAUREA IN CHIMICA**
• Nome e indirizzo del datore di lavoro	Dipartimento di Scienze Chimiche
• Tipo di azienda o settore	Università di Ferrara
• Tipo di impiego	Professore Incaricato di Chimica Generale e Inorganica, Facoltà di Scienze Matematiche, Fisiche e Naturali
• Date (dal 1977 – al 1980)	**INSEGNAMENTO DI ESERCITAZIONI DI CHIMICA FARMACEUTICA E TOSSICOLOGICA II, CORSO DI LAUREA IN FARMACIA**
• Nome e indirizzo del datore di lavoro	Dipartimento di Scienze Farmaceutiche
• Tipo di azienda o settore	Università di Ferrara
• Tipo di impiego	Professore Incaricato Facoltà di Scienze Farmaceutiche
• Date (dal 1978 – al 1979)	**INSEGNAMENTO DI CHIMICA GENERALE E INORGANICA CON ELEMENTI DI ORGANICA, CORSO DI LAUREA IN GEOLOGIA**
• Nome e indirizzo del datore di lavoro	Dipartimento di Scienze Chimiche
• Tipo di azienda o settore	Università di Ferrara
• Tipo di impiego	Professore Incaricato, Facoltà di Scienze Matematiche , Fisiche e Naturali

ISTRUZIONE E FORMAZIONE

• Date (da 1974– 1975)	Specializzazione in Radioprotezione e Tecniche Radioisotopiche Università di Bologna

Per ulteriori informazioni:
www.cedefop.eu.int/transparency
www.europa.eu.int/comm/education/index_it.html
www.eurescv-search.com

• Date (da 1969– 1974)	Corso di Laurea in Chimica
	Università di Ferrara
• Qualifica conseguita	Dottore in Chimica

CAPACITÀ E COMPETENZE PERSONALI

Acquisite nel corso della vita e della carriera ma non necessariamente riconosciute da certificati e diplomi ufficiali.

PRIMA LINGUA **ITALIANO**

ALTRE LINGUE

	INGLESE
• Capacità di lettura	ECCELLENTE
• Capacità di scrittura	ECCELLENTE
• Capacità di espressione orale	ECCELLENTE

Per ulteriori informazioni:
www.cedefop.eu.int/transparency
www.europa.eu.int/comm/education/index_it.html
www.eurescv-search.com

ULTERIORI INFORMAZIONI

Membro dell' International Organizing Committee, International Conference on Photochemical Conversion and Storage of Solar Energy 1995-2000.

Visiting Professor, University of Sao Paulo, Brazil, 1997

Visiting Professor, National Institute of Materials and Chemical Research, Tsukuba and University of Osaka, Japan, (January), 1996

Visiting Scientist, Chemical Science and Technology Division Los Alamos National Laboratory, New Mexico, 1995

Visiting Professor, University of Sao Paulo, Brazil, 1995

Lecturer for the 3e Cycle en Chimie (Switzerland), 1994.

Visiting NATO Senior, University of North Carolina, Chapel Hill (USA), 1989.

Progetti RTD Finanziati dal MIUR, E.U e Istituzioni Straniere:

Partner in: Photosensitization of Wide Band-Gap Semiconductors. Contract N. 9965Q0104-3C (1996). Los Alamos National Laboratory (USA), 20.000 US$.

Partner in: Electron and Energy Transfer in Model System and their Implication for Molecular Electronics.Contract N. CHRX CT940538 (EU) Human Capital and Mobility (1996-1998) 40.000 Euro.

Partner in: Dye Sensitized Nanocrystalline Solar Cells. Contract N. JOR3CT960107, (EU) Joule III (1997-98), 186.000 Euro.

Coordinator of : Highly Integrated PV/Thermal/Structural Building Components

Contract N. JO.S22-3534, (EU) Joule III (1999-2000), 480.000 Euro.

Partner in : Self-assembly of addressable and modulatable arrays of funcltional metal oxide nanocrystals. Contact N. RTN1-(EU) (TMR)-(2000-2002), 198.000 Euro.

Partner in : BUILD-DSSC. Conrtact N. CT-2004-512510 (EU) (CRAFT)-(2004-2006), 192.000 Euro.

Cordinator of : Development of Nanomaterials with Microbicidal Activity for Environmental Decontamination (NMTech-CFR) 2005-2007. 100.000 Euro

Coordinator of : Hydrogen Production With Nanocrystalline Semiconductors (ENI) (2007-2014). 540.000 Euro.

Coordinator of: Design and Development of New Components for Hyghly Efficient Dye sensitized Solar Cells (PRIN 2008) 586.000 Euro

Coordinator of: Dispositivi Solari a Coloranti di Nuova Generazione: Sensibilizzatori e Conduttori Nano-Ingegnerizzati (DSSCX) (PRIN 2010) 1.102.753 Euro

Partner in : Dye Power Consortium (ERG, Permasteelisa, Dyesol, University of Rome 2 Tor Vergata, University of Turin) for the industrialization and application of DSC in photovoltaic facades (2009-2014) 740.000 Euro

Partner in: Nanosolar FIRB (2011-2015) 600.000 Euro

Coordinator of : HP-SOLAR (POR FESR Regione Emilia Romagna 2016) 590.000 Euro.

Coordinator of: Development of Silver based compositions for topical applications (Pavia Farmaceutici-CFR) 54.000 Eur.) 2016-2018.

Coordinator of: Development of antimicrobial products for topical applications (DEBx-Medical B.V. CFR) 2019. 140.000 Euro

Coordinatore di altri 55 progetti industriali finanziati attraverso il Consorzio Ferrara Ricerche/Consorzio Futuro in Ricerche

Tematiche di Ricerca

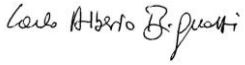
Gli interessi di ricerca attuali sono legati: a) alla conversione dell'energia solare con particolare riguardo allo sviluppo di sistemi optoelettronici basati su semiconduttori ad ampio band-gap sensibilizzati con complessi di metalli di transizione;

b) alla scissione fotoindotta dell'acqua su semiconduttori nanocristallini; c) allo sviluppo di sistemi antimicrobici basati su complessi fotochimicamente stabili di metalli di transizione per applicazioni in campo farmaceutico.

Autore di 239 pubblicazioni su riviste internazionali e di 37 brevetti descritti in allegato.
N. Conferenze Plenarie in Meeting Scientifici: 14
N. Conferenze Invitate in Meeting Scientifici: 48
N. Seminari in Università Italiane e Straniere: 39

ALLEGATI ELENCO PUBBLICAZIONI, BREVETTI, CONFERENZE E SEMINARI.

Autorizzo il trattamento dei miei dati personali ai sensi del GDPR (UE) n. 2016/679.

Data 07-03-2022 Firma 
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Autorizzo la pubblicazione del presente CV sul sito dell'Università degli Studi di Ferrara

Data 07-03-2022 F.to Nome e Cognome
Carlo Alberto Bignozzi

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www.europa.eu.int/comm/education/index_it.html
www.eurescv-search.com

Curriculum Vitae

Prof. Carlo Alberto Bignozzi.

***Affiliation and Official Address*:**

Dipartimento di Chimica Università di Ferrara, Via L. Borsari 46, 44100 Ferrara, Italy.

FAX: +(39-532-240709), TEL: +(39-532-291163). E-mail G4S@unife.it

***Date and place of birth*:**

October 10, **1950**, Ferrara, Italy

***Education*:**

University of Ferrara, Italy, Doctor in Chemistry **1974**

University of Bologna Italy , Specialization in Radioisotopic Techniques **1975**

Career/Employment

-University of Ferrara, Assistant Professor, (**1977**)

-University of Ferrara, Associate Professor of Inorganic Chemistry, (**1986**)

-University of Ferrara, Full Professor of Inorganic Chemistry, (**2000**-present)

-University of Ferrara, Vice Chairman Department of Chemistry, (**2000-2003**)

-University of Ferrara, Chairman Department of Chemistry, (**2003-2009**)

University of Ferrara, Coordinator PhD in Chemistry (**2010-**present**)**

-Visiting NATO Senior, University of North Carolina, Chapel Hill (USA), **1989**

-Lecturer for the 3e Cycle en Chimie (Switzerland), **1994**

-Visiting Scientist, Chemical Science and Technology Division Los Alamos National Laboratory, New Mexico, **1995**

-Visiting Professor, University of Sao Paulo, Brazil, **1995**

-Visiting Professor, National Institute of Materials and Chemical Research, Tsukuba and University of Osaka, Japan, **(**January**), 1996**.

-Visiting Professor, University of Sao Paulo, Brazil, **1997**

***Publications*:**

Number of papers in referred journals: **230**

Number of patents: **37**

Number of plenary lectures to scientific meetings:**14**

Number of Invited Lectures to scientific meetings **48**

Number of Seminars in Italian and Foreign Universities: **39**

H Index: **55**

N. Citations over **12500**

***Membership of Professional Societies and International Committee*:**

-Member of the International Organizing Committee, International Conference on Photochemical Conversion and Storage of Solar Energy **1995-2000**.

***Specialization*:**

Main fields: Inorganic Chemistry, Photochemistry, Chemistry of Materials.

***Current Reserch Interests*:**

Conversion of solar energy with dye sensitized nanocrystalline semiconductors.

Photoinduced water splitting and hydrogen production with nanocrystalline semiconductors.

Development of polynuclear transition metal complexes which can be usefull in catalytic schemes, and vectorial energy and electron transfer processes.

Development of molecular systems for sensitization of wide band-gap semiconductors and for electrochromic and photochromic devices.

Development of molecular level optical information storage devices based on luminescent complexes

Development of nanocristaline semiconductors for environmental application, surface self cleaninig and decontamination.

Development of active principles for Inorganic Medicinal Chemistry

RTD Projects Awarded by E.U and by Foreign Research Institutions .

Partner in: Photosensitization of Wide Band-Gap Semiconductors.

Contract N. 9965Q0104-3C (**1996**).

Los Alamos National Laboratory (USA), 20.000 US$.

Partner in: Electron and Energy Transfer in Model System and their Implication for Molecular Electronics.
Contract N. CHRX CT940538 (EU) Human Capital and Mobility (**1996-1998**) 40.000 Euro.
Partner in: Dye Sensitized Nanocrystalline Solar Cells.
Contract N. JOR3CT960107, (EU) Joule III (**1997-98**), 186.000 Euro.
Coordinator of : Highly Integrated PV/Thermal/Structural Building Components
Contract N. JO.S22-3534, (EU) Joule III (**1999-2000**), 480.000 Euro.
Partner in : Self-assembly of addressable and modulatable arrays of funcltional metal oxide nanocrystals. Contact N. RTN1-(EU) (TMR)-(**2000-2002**), 198.000 Euro.
Partner in : BUILD-DSSC. Conrtact N. CT-2004-512510 (EU) (CRAFT)-(**2004-2006**), 192.000 Euro.
Cordinator of : Development of Nanomaterials with Microbicidal Activity for Environmental Decontamination (NMTech-CFR) **2005-2007**. 100.000 Euro
Coordinator of : Hydrogen Production With Nanocrystalline Semiconductors (ENI) (**2007-2014**). 540.000 Euro.
Coordinator of: Design and Development of New Components for Hyghly Efficient Dye sensitized Solar Cells (**PRIN 2008**) 586.000 Euro
Coordinator of: Dispositivi Solari a Coloranti di Nuova Generazione: Sensibilizzatori e Conduttori Nano-Ingegnerizzati (DSSCX) (**PRIN 2010**) 1.102.753 Euro
Partner in : Dye Power Consortium (ERG, Permasteelisa, Dyesol, University of Rome 2 Tor Vergata, University of Turin) for the industrialization and application of DSC in photovoltaic facades (**2009-2014**) 740.000 Euro
Partner in: Nanosolar **FIRB** (**2011-2015**) 600.000 Euro
Coordinator of : HP-SOLAR (POR FESR Regione Emilia Romagna **2016**) 590.000 Euro.
Coordinator of: Development of Silver based compositions for topical applications (Pavia Farmaceutici-CFR) **2016-2018**. 54.000 Euro
Coordinator of: Development of antimicrobial products for topical applications (DEBx-Medical B.V. CFR) **2019-2020**. 140.000 Euro
Coordinator of additional 48 industrial projects financed through the Consortium Ferrara Research /Consortium Furure in Research.

PUBLICATIONS

1) V. Carassiti, C. A. Bignozzi, F. Scandola
"Efficienza del Trasferimento di Energia Elettronica dal Biacetile al Ferrocene in Soluzione Fluida"
Atti della Accademia delle Scienze dell'Istituto di Bologna, **1977**, *Serie XIII, IV*, 123.

2) V. Carassiti, C. Chiorboli, C. A. Bignozzi, A. Ferri, A. Maldotti.
"Atmospheric Photooxidation of Vinyl Chloride: a Generalized Treatment of the Relative Rates of Product Formation".
Annali di Chimica, **1977**, *67*, 499-512.

3) V. Carassiti, C. A. Bignozzi, C. Chiorboli.
"Atmospheric Photochemistry, and Photooxidation of Vinyl Chloride".
Atti della Accademia delle Scienze dell'Istituto di Bologna, **1978**, *Serie IV, 1*, 5.

4) C. Chiorboli, C.A. Bignozzi, A. Maldotti, V. Carassiti
"Synergistic Effects in the Photooxidation of Ethylene and Vinyl Chloride Induced by 1,3 Butadiene".
J. Photochem. **1978**, *9*, 113-115.

5) R. Ballardini, M. T. Indelli, G. Varani, C. A. Bignozzi, F. Scandola.
"Bis(8-quinolinolato)platinum(II): a Novel Complex Exhibiting Efficient, Long Lived Luminescence in Fluid Solution".
Inorg. Chim. Acta, **1978**, *31*, L.423-L424.

6) C. A. Bignozzi, C. Chiorboli, A. Maldotti, V. Carassiti.
"Atmospheric Reactivity of 1-3 Butadiene-Nitrogen Monoxide and Acrolein-Nitrogen Monoxide Systems".
Annali di Chimica, **1980**, 453-461.

7) A. Maldotti, C. Chiorboli, C. A. Bignozzi, C. Bartocci, V. Carassiti.
"Photooxidation of 1,3 Butadiene Containing Systems: Rate Constant Determination for the Reaction of Acrolein with ·OH Radicals".
Int. J. Chem. Kinet.,**1980**, *12*, 905-913.

8) C. A. Bignozzi, A. Maldotti, C. Chiorboli, C. Bartocci, V. Carassiti.

"Kinetics and Mechanism of Reactions Between Aromatic Olefins and Hydroxyl Radicals".

Int. J. Chem. Kinet.,**1981**, *13*, 1235-1242.

9) C. Bartocci, C. A. Bignozzi, A. Maldotti, F. Fagioli.
"Photochemical Formation of a Mixed Valence Platinum Compound".
Inorg. Chim. Acta, **1981**, *53*, L157-L159.

10) C. A. Bignozzi, C. Bartocci, A. Maldotti, V. Carassiti.
"Photochemistry of Dimeric and Trimeric Hydroxo-Bridged Diammine Platinum (II) Complexes in Aqueous Solution".
Inorg. Chim. Acta, **1982**, *62*, 187-191.

11) M. T. Indelli, R. Ballardini, C. A. Bignozzi, F. Scandola.
"Doublet-Doublet Annihilation in Chromium(III) Polypyridine Complexes".
J. Phys. Chem., **1982**, *86*, 4284-4286.

12) F. Scandola, R. Ballardini, M.T. Indelli, M.A. Rampi, C.A. Bignozzi, G. Varani.
"Metal Complexes as Photosensitizers and Relays for the Redox Decomposition of Water".
In "*Photochemical, Photoelectrochemical and Photobiological Processes"*, D.O. Hall and W. Palz Eds., Reidel, Dordrecht **1982**, p.70.

13) C. Bartocci, A. Maldotti, O. Traverso , C. A. Bignozzi, V. Carassiti.
"Photoreduction of Chlorohemin in Pure Pyridine".
Polyhedron, **1983**, *2*, 97-102.

14) C. Bartocci, C. A. Bignozzi, F. Scandola, R. Rumin, P. Courtot.
"*Cis*- Dicianobis(2,2'- bipyridine)Ruthenium(II) as a Nitrile Ligand. Formation of Adducts with Platinum(II) Complexes".
Inorg. Chim. Acta, **1983**, *76*, L 119-L121.

15) C. A. Bignozzi, C. Bartocci, C. Chiorboli, V. Carassiti.
"Dimerization Processes of *cis*- $Pt(NH_3)_2(H_2O)_2^{2+}$ in Aqueous Solution".
Inorg. Chim. Acta, **1983**, *70*, 87-90.

16) C. Chiorboli, C. A. Bignozzi, A. Maldotti, P. F. Giardini, A. Rossi, V. Carassiti.
"Rate Constants for the Gas-Phase Reactions of OH Radicals with β-Dimethylstyrene and Acetone. Mechanism of β -Dimethylstyrene NOx-air Photooxidation".
Int. J. Chem. Kinet., **1983**, *15*, 579-586.

17) C.A.Bignozzi, F.Scandola.
"Cyanobridged Ruthenium(II)/ Platinum(II) Complexes. Synthesis, Photophysical Properties, and Excited-State Behaviour".
Inorg. Chem., **1984**, *23*, 1540-1545.

18) C.A.Bignozzi, F.Scandola.
"Bis(bipyridine)Ruthenium(II) Cyanobridged Polymeric Cations".
Inorg. Chim. Acta, **1984**, *86*, 133-136.

19) R. Ballardini, C.A. Bignozzi, C. Chiorboli, M.T. Indelli, M.A. Rampi, F. Scandola, G. Varani.
"Metal Complexes as Photosensitizers and Relays for the Redox Decomposition of Water", *Report EUR 947 EN, Commission of the European Communities*, **1984**.

20) C.A.Bignozzi, S.Roffia, F.Scandola.
"Intervalence Transfer in Cyano-Bridged Bi- and Trinuclear Ruthenium Complexes".
J. Am. Chem. Soc., **1985**, *107*, 1644.-1651

21) F. Scandola, C.A. Bignozzi, V. Balzani.
"Photoinduced Charge Separation. Towards the Design of Supermolecular Systems Based on Transition Metal Complexes".
In "*Homogeneous and Heterogeneous Photocatalysis*", E. Pelizzetti and N.Serpone, Eds., Reidel, Dordrecht, **1986**, p.29.

22) S. Roffia, C. Paradisi, C.A. Bignozzi.
"Electrochemical and Spectroscopic Behavior of Cyanobridged Bi- and Trinuclear Complexes of Ruthenium Containing 2,2'-bipyridine and Ammonia Ligands. Convolutive Potential Sweep Voltammetric Study of Two Nernstian Waves".
J. Electroanal. Chem., **1986**, *200*, 105-118.

23) C.A. Bignozzi, C. Chiorboli, M.T. Indelli, M.A. Rampi Scandola, G. Varani, F. Scandola.
"A Simple Polypyridineruthenium(II) Photosensitizer: (2,2'-Bipyridine) Tetracyanoruthenate(II)".
J. Am. Chem. Soc., **1986**, *108*, 7872-7873.

24) F. Scandola, C.A. Bignozzi.
"Cyano-Bridged Supramolecular Systems Containing the $Ru(bpy)_2^{2+}$ Photosensitizer Unit",

In *Supramolecular Photochemistry*, V.Balzani, Ed., Reidel, Dordrecht, **1987**, p.121.

25) M.T. Indelli, C.A. Bignozzi, A. Marconi, F. Scandola.
"Ground- and Excited-State Acid-Base Equilibria of (2,2'-bipyridine)tetracyanoruthenate(II)".
In *Photochemistry and Photophysics of Coordination Compounds*, H. Yersin and A. Vogler, Eds., Springer-Verlag Berlin, **1987**, p.159.

26) C.A. Bignozzi, C. Paradisi, S. Roffia, F. Scandola.
"Optical Electron Transfer Transitions in Polynuclear Complexes of the Type $X(NH_3)_4RuNCRu(bpy)_2CNRu(NH_3)_4Y^{m+}$ ($X=NH_3$,py; $Y=NH_3$,py; m=4-6)".
Inorg. Chem., **1988**, *27*, 408-414.

27) C.A. Bignozzi, C. Chiorboli, M.T. Indelli, M.A. Rampi, F. Scandola.
"Supramolecular Photochemistry: Energy and Electron Transfer processes in Polynuclear Transition Metal Complexes."
In " *Macrocyclic and Supramolecular Chemistry in Italy*" U Tonellato, and P.A. Vigato eds., University Press, Parma, **1988**, p.35.

28) M.T. Indelli, C.A. Bignozzi, A. Marconi, F. Scandola.
"Ruthenium(II) 2,2'-Bipyridine Complexes Containing Methyl Isocyanide Ligands.Extreme Effects of Nonchromophoric Ligands on Excited State Properties."
J. Am. Chem. Soc., **1988**, *110*, 7381-7386

29) J. Davila, C. A. Bignozzi, F. Scandola.
"Excited-state proton transfer processes of *cis*-dicyanobis (2,2'-bipyridine)ruthenium(II) in acetonitrile/water solvent systems".
J. Phys. Chem., **1989**, *93*, 1373-1380.

30) Q. G. Mulazzani, M. Venturi, M. D'Angelantonio, C. A. Bignozzi, F. Scandola.
"Pulse and Continuous Radiolysis of Cyano-Bridged Polynuclear Ruthenium Complexes in Aqueous Solution".
J. Phys. Chem., **1989**, *93*, 736-740.

31) C. A. Bignozzi, M. T. Indelli, F. Scandola.
"Bis(2,2'-bipyridine) Ruthenium(II)-Hexacyanochromate(III) Chromophore-Luminophore Complexes. Intramolecular Energy Transfer, Excited-State Intervalence Transfer and Doublet-Doublet Annihilation".
J. Am. Chem. Soc., **1989**, *111*, 5192-5198.

32) C .A. Bignozzi, S. Roffia, C. Chiorboli, J. Davila, M.T. Indelli, F. Scandola.
"Oligomeric Dicyanobis(Polypyridine)Ruthenium(II) Complexes. Synthesis and Spectroscopic and Photophysical Properties".
Inorg. Chem., **1989**, *28*, 4350-4358.

33) C. Chiorboli, C.A. Bignozzi, L. Checchi, M. T. Indelli, M. A. Rampi, F. Scandola.
"Intramolecular Energy Transfer in Polynuclear Transition Metal Complexes".
In "*Photoconversion Processes For Energy and Chemicals*", D.O. Hall and G. Grassi, Eds, Elsevier, London, **1989**, p.57.

34) F. Scandola, C. A. Bignozzi, C. Chiorboli, M. T. Indelli, M. A. Rampi.
"Intramolecular Energy Transfer in Ru(II)-Ru(II) and Ru(II)-Cr(III) Polynuclear Complexes".
Coord. Chem. Rev., **1990**, *97*, 299-312.

35) R. Amadelli, R. Argazzi, C. A. Bignozzi, F. Scandola.
"Design of Antenna-Sensitizer Polynuclear Complexes. Sensitization of Titanium Dioxide with $[Ru(bpy)_2(CN)_2]_2Ru(bpy(COO)_2)_2]^{2-}$".
J. Am. Chem. Soc., **1990**, *112*, 7099-7103.

36) F. Scandola, M.T. Indelli, C. Chiorboli, C.A. Bignozzi.
"Photoinduced Electron and Energy Transfer in Polynuclear Complexes".
Top. Curr. Chem., **1990**, 158, 73-149.

37) M.T. Indelli, F. Scandola, C.A. Bignozzi, C. Chiorboli, M.A. Rampi.
"Intramolecular Energy Transfer In Polynuclear Transition Metal Complexes".
In *"Macrocyclic and Supramolecular Chemistry in Italy*",
University Press, Padova **1990**, p.27.

38) M. T. Indelli, E. Polo, C. A. Bignozzi, F. Scandola.
"Intramolecular Charge Shift Following Bimolecular Reductive Quenching of a Rhodium (III)polypyridine-Diquat Dyad",
J. Phys. Chem. **1991**, *95*, 3889-3892.

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36) Bignozzi Carlo Alberto, Cogo Alberto

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37) Bignozzi Carlo Alberto, Papadia Stefania

"Composizione polimerica antimicrobica" IT. N. 102021000003893,

Plenary Lectures

1) Congresso Interdivisionale della Società Chimica Italiana, S. Benedetto del Tronto (**1990**)

" Energy and electron transfer processes in polynuclear complexes".

2) 212th ACS National Meeting, Orlando Florida, August 25-29 (**1996**)

"A Supramolecular Approach to Light Harvesting and Sensitization of Wide Bandgap Semiconductors ".

3) XXI International Conference on Photochemistry, NARA, Japan July, 26-31 (**2003**)

"Red Sensitive dyes and Metal Based Electron-Transfer Mediators for Dye Sensitized Solar Cells"

4) 6th AIST International Symposium on Photoreaction Control and Photofunctional Materials. Tsukuba, Japan, October 29-31, **2003**

" Design of Red Sensitive Dyes for Dye Sensitized Solar Cells Based on Mesoscopic Oxides"

5) VII Convegno Chimica Fisica "Complex Systems: Striature, Properties, Reactivity and Dynamics. 13-15 Giugno Alghero, **2005**

" Design of Photoelectrochemical electrochromic and Photochromic Devices Based on Functional Metal Oxide Semiconductors".

6) Convegno Europa ed Ambiente. Ferrara 17 Febbraio **2005**

La Chimica per la Qualità dell'Aria: Fatti e Prospettive

7) Convegno Chimica Industria e Ambiente. Ferrara, Settembre **2005**

"Nanomateriali per la Decontaminazione dell'Ambiente"

8) Annual Meeting of the Cinese Chimical Society, Taipei, December **2007**,

"Dye Engineering and Electron Mediators for Dye Sensitized Solar Cells"

9) Joint ICPT-KFAS Workshop on Nanoscience for Solar Energy Conversion, Trieste October **2008 .**

" Recent developments in the design of dye sensitized solar cell components"

10) 237th ACS Meeting, Salt Lake City Utah, March **2009.**

" Recent developments in the design of dye sensitized solar cell components"

11) X SAYCS, Pesaro, Ottobre **2010**

"Functional Nanomaterials for Solar Energy Conversion and Photoinduced Water Splitting".

12) Solar Fuels Catalysis & Photoconversion. Solar Energy research Center University of North Carolina at Chapel Hill, January **2011**

"Semiconductor Nanomaterials in Solar Energy Conversion Processes"

13) XXIV Congresso Nazionale SCI (Lecce), Settembre **2011**

Application of Semiconductor Nanomaterials in Energy Conversion Processes

14) Italian Photochemistry Conference, Morimondo, November **2014**

"Molecular Assemblies and nanostructured semiconductors for photoinduced water splitting"

Invited Lectures, National Meetings

1) XV Congresso Nazionale di Chimica Inorganica, Bari (**1982**)
"(Dicyanobis(2,2'-bipyridine)ruthenium(II) as a nitrile ligand. Adducts with platinum(II) complexes: spectroscopic and photophysical properties".

2) XVI Congresso Nazionale di Chimica Inorganica, Ferrara (**1983**)
"Synthesis, photophysical properties and excited state rebox behaviour of two bimetallic ruthenium(II)/platinum(II) complexes".

3) XVII Congresso Nazionale di Chimica Inorganica, Cefalù (**1984**)
"Intervalence Transfer in Cyanobridged bi- and trinuclear complexes of ruthenium".

4) XVIII Congresso Nazionale di Chimica Inorganica, Como (**1985**)
"Polynuclear Ruthenium(II)/(III) complexes, intervalence transfer and intramolecular redox processes.

5) XVII Congresso Nazionale della Società Chimica Italiana. Genova (**1992**).
"Long Range Energy transfer in Oligomeric Metal Complex Assemblies".

6) I Congresso Nazionale di Chimica Supramolecolare, PAVIA (**1992**)
"Long Range Energy transfer in Oligomeric, Metal Complex Assemblies".

7) XII Congresso Nazionale di Chimica Inorganica , Villasimius (Cagliari)(**1993**)
"Application of Time-Resolved Resonance Raman and Infrared Spectroscopy to the Study of Intramolecular Energy Transfer Processes".

8) Convegno Nazionale Congiunto di Fotobiologia e Fotochimica. Volterra (**1994**)
Enhanced Spectral Sensitivity from Ru(II) polypyridil based photovoltaic devices.

9) XXIII Congresso Nazionale di Chimica Inorganica, Bressanone (**1994)**
Enhanced Spectral Sensitivity from Ru(II) polypyridil based photovoltaic devices.

10) XVIII Congresso Nazionale SCI, Milano (**1995**)

"Polynuclear Metal Complexes as Supramolecular Species, Intercomponent Electronic Coupling and Electron Transfer Processes in Homogeneous and Heterogeneous Phase".

15) Congresso Nazionale di Fotochimica GIF , Bertinoro, (**2008**)

"Dye Sensitizers and Electron Mediators for DSSCs".

16) Convegno Inaugurazione Sede CNR Messina

"Celle solari sensibilizzate con coloranti naturali" (**2008**)

17) Convegno Tecnologia Foltovoltaica e Inbrida, Stato dell'Arte e prospettive, Perugia (**2009**)

" Nuovi Componenti per Dispositivi Solari DSSC"

18) I Giganti della Fotochimica, Bologna 2 Febbraio **2017**. Convegno GIF

"Photoelectrochemical Devices in Solar Energy Conversion Processes".

Invited Lectures, International Meetings

1) Mediterranean Meeting on Photochemistry, Santa Tecla, Catania (**1991**)

" Design of long chain cyanobridged polynuclear complexes featuring vectorial energy transfer".

2) 9th International Symposium on the Photochemistry and Photophysics of Coordination Compounds, Friburg (Switzerland) (**1991**)

"Photoinduced intramolecular energy and electron transfer processes in long chain polynuclear complexes containing rhenium(I) and ruthenium(II) polypyridine moieties".

3) First European Congress on Catalysis, Montpelier (France) (**1993)**

"Design of Mononuclear and Polynuclear Complexes for the Sensitization of TiO_2 to visiible light".

4) Tenth International Conference on Photochemical Conversion and Storage of Solar Energy Interlaken (Switzerland) (**1994**)

"Photosensitization of Wide Bandgap Semiconductors with Antenna Molecules".

5) Workshop on Electron and Energy transfer In Model Systems and their Implication for Molecular Electronics (Leuven) (**1995**)

"Application of Time-Resolved electronic and Vibrational Spectroscopy to the Study of Excited-State Intercomponent Processes in Supramolecular Systems".

6) Workshop on Electron and Energy transfer In Model Systems and their Implication for Molecular Electronics (Ferrara) (**1996**)

"Intercomponent and Interfacial energy and Electron Transfer Processes in Polynuclear Metal Complexes Adsorbed on transparent TiO2 Films".

7) Eleventh International Conference on Photochemical Conversion and Storage of Solar Energy (IPS-11) Bangalore, India (**1996**)

“Intercomponent and Interfacial Electron Transfer Processes in Polynuclear meta Complexes Adsorbed on transparent TiO2 Films".

8) EC Meeting on Heterosupramolecular Chemistry (Ferrara) (**1997**)

"Electronic Energy Transfer and Antenna Effects".

9) EC Meeting on Electron and Energy Transfer in Model Systems and Their Implication in Molecular Electronics, Sitges, Spain (**1977**).

"Intramolecular Electron Transfer in Polynuclear Ruthenium Complexes".

10) TMR Meeting on Heterosupramolecular Chemistry Jan 1999- Amsterdam (**1999**)

"Interfacial Electron transfer Processes on Nanocrystalline TiO_2 Sensitized with Mononuclear and polynuclear Complexes".

11) 13^{th} International Symposium on Photochemistry and Photophysics of Coordination Compounds. (Lipari, Italy) (**1999**)

"Nanocrystalline TiO2 Sensitized with Polynuclear Complexes.".

12) 1^{St} BINPHOS (Belgium, Italy, The Netherlands Photochemistry Symposium (Noordwijk, The Netherlands) (**1999**)

"Photoelectrochemical, Photochromic and Electrochromic Devices Based on Sensitized Nanostructured Semiconductors.".

13) Solar Energy and Applied Photochemistry (SOLAR 99) Conference (Cairo, Egipt) (**1999**)

"Interfacial-Electron Transfer Processes on Nanocrystaline TiO2 Sensitized with Mononuclear and polynuclear Complexes".

14) Inorganic Chemistry in the New Millenium (Santa Fe, US) (**2001**)

“ Heterosupramolecular Devices Based on Charge Transfer Complexes, Electrochromic, Photochromic and Photoelectrochemical Properties.

15) First Italian-German Workshop of Electrochemistry. (**2002**)

" Substituted Polypyridine Complexes of Cobalt(II/III) as Efficient Electron Mediator in Dye-Sensitized Solar Cells".

16) Presymposium held in Osaka to the XXI International Conference on Photochemistry, NARA, Japan July, 26-31 **2003**

"Red Sensitive dyes and Metal Based Electron-Transfer Mediators for Dye Sensitized Solar Cells"

17) Syntheses and Methodologies in Inorganic Chemistry, SAMIC 2003, Bressanone 8 11 Dicembre **2003**

" Design of Red Sensitive Dyes and of Electron-Transfer Mediators for Dye Sensitized Solar Cells Based on Mesoscopic Oxides"

18) Nanotechnology: the Molecular Approach, Bologna, Italy, February 25-27, **2004,** 2nd National Conference on Nanoscience

"Design of red sensitive dyes and electron mediators for DSSC"

19) 15th International Conference on Photochemical Conversion and storage of solar cells (IPS-15), Paris 4-9 July **2004**

"New red sensitive Ruthenium and Osmium dyes and cobalt based electron transfer mediators for application in DSSCs ".

20) 16th International Conference on Photochemical Conversion And Storage of Solar Energy Uppsala, Sweden July 2-7, 2006

" Efficient non corrosive mixture of electron mediators for dye sensitized solar cells."

21) 232nd American Chemical Society National Meeting San Francisco California, September 10-14, **2006**

" Efficient non corrosive mixture of electron mediators for dye sensitized solar cells.

22) International School on Organic Photovoltaics, Ventotene, Italy , **2008.**

Dye Sensitized Solar Devices

23) Fondazione Willy Brandt. Meeting sull'Efficienza e Sostenibilità Ambientale, Napoli, Giugno **2008**,

"Nanomateriali per la decontaminazione ambientale"

24) NANOFORUM Torino, Giugno **2009**

"Functional nanomaterials for the environmental decontamination"

25) 5th European Conference of "N.I.C.- Nanotechnology in Chemical Industry" Venice **2013**

"Antimicrobial Nanomaterials for Medical devices"

26) FUTURMAT 2 (**2012**) Riva Marina, Lecce

"New Materials for Dye Sensitized Solar Cells"

27) 20th ISPPCC (International Symposium on the Photophysics and Photochemistry

of Coordination Compounds), Traverse City Michigan, July **2013**

“Component Optimization for Transparent Dye Sensitized Solar Cells”

28) HOPV 14 Lausanne May **2014**

“New materials for dye sensitized Solar Cells”

29) HOPV 15 Rome May **2015**

“Electron Mediators Based on Transition Metal Complexes ”

30) ACS Phladelphia August **2016**

“Transition Metal Complexes as Electron Mediators in Dye Sensitized Solar Cells

Invited Seminars, Italian Universities

1) Università di Bologna (**1989**)

"Processi intramolecolari di trasferimento elettronico in complessi di rutenio".

2) Seminario Nazionale di Chimica Fisica Villa Gualino-Torino (**1997**)

"Sensibilizzazione spettrale di semiconduttori per la conversione dell'energia solare".

3) ENEA-CRE Casaccia, Roma (**1997**)

"Celle per Conversione Fotovoltaica Basate su Biossido di Titanio Sensibilizzato.".

4) Corso Introduttivo di Fotochimica Dip. Chimica “G. Ciamician” – Bologna (**1998**)

“Fotochimica in Sistemi Eterogenei”.

5) Istituto Donegani (ENI) Novara (**2007**)

“ Nanomateriali Semiconduttori ad Ampio Band Gap per la Produzione di Idrogeno “

6) Dipartimento di Chimica Università di Messina (**2008**)

“Nanomateriali per la Decontaminazione Ambientale e la Conversione dell’Energia Solare”.

7) Ca’ Foscari Venezia (**2015**)

“Photoelectrochemical Energy Conversion with Functionalized Semiconductor Nanomaterials).

Invited Seminars, Foreign Universities and International Schools

1) University of North Carolina at Chapel Hill (USA) (**1990**)

"Lectures on Photochemistry, Mixed-Valence Chemistry and Electron Transfer".

2) Johns Hopkins University, Baltimore (USA) (**1992**)

"The design of antenna-sensitizer complexes for light energy conversion".

3) University of North Carolina at Chapel Hill (USA) (**1992**)

"Photoinduced energy transfer processes in polynuclear complexes".

4) Johns, Hopkins University , (USA) (**1993**)

"Supramolecular Photochemistry for Light Energy Conversion".

5) University of North Carolina at Chapel Hill (USA) (**1993**)

"Photochemical Moleular Devices Based On Polynuclear Transition Metal Complexes".

6) Centre D'elaboration De Materiaux Et D'Estudes Structurales Laboratoire D'Optique Electronique CNRS, Toulouse, (**1993**)

"Photochemical Moleular Devices Based on Polynuclear Transition Metal Complexes".

7) Los Alamos National Laboratory- Laser Division CLS-4, (**1993**)

" Photochemical Moleular Devices Based on Polynuclear Transition Metal Complexes".

8) Institut Fur Anorganische Chemie, Berne, Switzerland (**1994**)

"Optical and Thermal Electron Transfer Processes in Polynuclear Transition Metal Complexes ".

9) Institut Fur Anorganische Chemie, Berne, Switzerland (**1994**)

"Photoinduced Energy Transfer Processes in Polynuclear Complexes" (All. 43).

10) Institut Fur Anorganische Chemie, Berne, Switzerland (**1994**)

"Photochemical Molecular Devices for Light Harvesting and Charge Separation".

11) Department de Chimie Minerale, Geneve, Switzerland (**1994**)

"Antenna Effects and Photoinduced Electron Transfer in Polynuclear Transition Metal Complexes".

12) Institut de Chemie Minerale et Analytique, Lausanne, Switzerland (**1994**)

"Excited State Electron and Energy Transfer in Polynuclear Transition Metal Complexes".

13) Department of Chemistry University of north Carolina at Chapel Hill, USA (**1994**)

Special Inorganic Seminar "Elementary Processes in Molecular Assemblies for Light Harvesting and Sensitization of Wide Band Gap Semiconductors".

14) Los Alamos National Laboratory- Bioscience/Technology Division, USA (**1995**)

"A Supramolecular Approach to Light Harvesting and Sensitization of Wide Bandgap Semiconductors. Antenna Effect and Charge Separation".

15) Universitè Louis Pasteur, Facultè de Chimie, Strasbourg France (**1995**)

"Energy and Electron Transfer Processes in Homogeneous and Heterogeneous Phase".

16) Universidade De Sao Paulo, Instituto de Quimica (**1995**)
"A Supramolecular Approach to Light Harvesting and Sensitization of Wide Band-Gap Semiconductors".
17) National Institute of Materials and Chemical Reserach, Tsukuba (Japan) (**1996**)
"Molecular Level Solar Energy Conversion by Dye Sensitized Nanocrystalline TiO_2".
18) National Institute of Materials and Chemical Reserach, Tsukuba (Japan) (**1996**).
" Application of Time Resolved Resonance raman and Time Resolved Infrared Spectroscopy to the study of Excited State Energy and Electron Transfer Processes in Supramolecular Systems".
19) Department of Chemistry Osaka University (Japan) (**1996**)
"Application of Time Resolved Resonance Raman and Time Resolved Infrared Spectroscopy to the study of Excited State Energy and Electron Transfer Processes in Supramolecular Systems".
20) Department of Chemistry Johns Hopkins University, Baltimore, MD (USA) (**1996**)
"New Trends in Heterosupramolecular Chemistry for Light Energy Conversion".
21) Department of Chemistry University of New Orleans, Luisiana (USA) (**1996**)
"A Supramolecular Approach to Light Harvesting and Sensitization of Wide Bandgap Semiconductors: Antenna Effects and Charge Separation".
22) Chemistry Institute, State University of Campinas, Brazil (**1997**)
"Molecular Level Artificial Photosynthetic Materials".
23) Instituto de Quimica de Sao Carlos/USP, Brazil (**1997**)
"Intramolecular Energy and Electron Transfer Processes in Complex Molecular Systems".
24) University of Sao Paulo USP, Brazil (**1997**)
"Sensibilization of Semiconductors in Solar Conversion Processes".
25) Department of Chemistry, Dublin City University, Dublin, Ireland (**1997**)
"Long-Range Electron and Energy Transfer".
26) Department of Chemistry, University College Dublin, Dublin, Ireland (**1997**)
"Interfacial Electron Transfer From Supramolecular Sensitizers".
27) E'cole Polytechnique Fe'derale de Lausanne Switzerland (**1999**)
"Molecular and Supramolecular sensitization of Nanocrystalline TiO2 Semiconductors".
28) Beckman Institute, California Institute of Technology, USA (**1999**)

"Photoelectrochemical, Photochromic and Electrochromic Devices Based on Sensitized Nanostructured Semiconductors".

29) Bowlin Green University, Chemistry Department, USA (**2001**)

" Heterosupramolecular Devices Based on Charge Transfer Complexes, Electrochromic, Photochromic and Photoelectrochemical Properties.

30) Pontificial Catholic University of Chile Department of Chemistry (**2002**)

"Functional Nanomaterials for the Conversion of Solar Energy and Electrochromic Devices"

31) Chemistry Department University of Birmingham, (U.K.) (**2002**)

" Heterosupramolecular Devices Based on Charge Transfer Complexes, Electrochromic, Photochromic and Photoelectrochemical Properties".

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" State of Art of DSSC"

" Novel Light Absorbers and Electron Mediators"

" Efficient Photoinduced Water Splitting at Nanostructured Interfaces"