



PERSONAL INFORMATION **Alessandro ABBOTTO**

 Department of Materials Science, Via Cozzi 55, I-20125 Milano (I)

 (+39) 02 6448 5227

 alessandro.abbotto@unimib.it

 <http://www.unimib.it/alessandro-abbotto>

Date of birth 09 Dec. 1963

WORK EXPERIENCE

2010–present Full Professor in Organic Chemistry and Materials
University di Milano-Bicocca, Milano (I)

2001–2010 Associate Professor
University of Milano-Bicocca, Milano (I)

1995–2001 Assistant Professor
University of Milano-Bicocca, Milano (I)

1995–1995 NATO Postdoctoral Fellowship
University of Erlangen-Nurnberg, Erlangen (D)

1994–1995 NSF Postdoctoral Fellow
University of California, Berkeley (CA, USA)

EDUCATION AND TRAINING

1993 PhD Degree in Chemical Sciences
University of Milano, Milano (I)

1989 MS Degree in Chemistry
University of Milano, Milano (I)

PERSONAL SKILLS

Mother tongue Italian

Foreign languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	C2	C2	C2

French	B2	B2	B2	B2	B2
Levels: A1 e A2: Basic user - B1 e B2: Independent user - C1 e C2: Proficient user Common European Framework of Reference for Languages					
ORGANISATIONAL/ MANAGERIAL SKILLS					
2018–present	Head (Director) of the Department of Materials Science University of Milano-Bicocca, Milano (I)				
2019–present	Executive Board of the Division of Organic Chemistry Italian Chemical Society, Roma (I)				
2017–2018	Deputy President of University Evaluation Board (Nucleo di Valutazione) University of Milano-Bicocca, Milano (I)				
2012–2018	National Coordinator of the Interdivisional Group of Chemistry for Renewable Energies (EnerCHEM) Italian Chemical Society, Roma (I)				
2012–2018	Expert Board of Ministry of University and Research (MUR) for European Programme Horizon 2020, Societal Challenge SC3 “Secure, Clean and Efficient Energy”				
2014–present	Editorial Board of La Chimica & l’Industria, Official Journal of the Italian Chemical Society, Roma (I)				
2013–present	Internal Advisory Board of European Journal of Organic Chemistry, Wiley,				
2010–2019	Scientific Board of Fondazione Silvio Tronchetti Provera, Pirelli SpA				
2012–2017	Head of Degree Courses in Chemical Sciences and Technologies University of Milano-Bicocca, Milano (I)				
2015–2017	Deputy Director of the Department of Materials Sciences University of Milano-Bicocca, Milano (I)				

- 2013–2017 Director of the Solar Energy Research Center MIB-SOLAR
University of Milano-Bicocca, Milano (I)
- 2011–2013 Deputy-Director of the Solar Energy Research Center MIB-SOLAR
University of Milano-Bicocca, Milano (I)
- 2010–2011 Scientific Board of the Solar Energy Research Center MIB-SOLAR
University of Milano-Bicocca, Milano (I)
- 2010–2012 Deputy Coordinator of PhD Degree in Materials Science
University of Milano-Bicocca, Milano (I)

TEACHING DUTIES

- PRESENT** Organic Chemistry, Materials and Devices for Energy, Organic Chemistry for Sustainable Energy for the BS and MS Degree Courses in: Chemical Sciences, Materials Science
University of Milano-Bicocca, Milano (I)

RESAECCH ACTIVITY

The recent research activity deals with the study (design, preparation and characterization) of multifunctional materials and devices, also nanostructured, based on organic and hybrid molecular and polymeric systems (organic-inorganic) for advanced technological applications in the field of solar energy, in particular production of solar fuels and chemical intermediates from abundant, clean and renewable sources (water photolysis and reduction of carbon dioxide by sunlight), in the so-called artificial photosynthesis processes; it also deals with latest generation photovoltaic devices (DSSC, PSC, tandem cells) for advanced applications (building integration, etc.).

Recently he has participated as PI or local coordinator in national or international EU - MUR - Lombardy Region - Cariplo Foundation projects as well as scientific manager of research contracts with industries in the energy field.

Since April 2020 he has been national coordinator of the technical working group of the Italian Chemical Society on hand and surface sanitizers for COVID-19 emergency.

Bibliometric records (June 2020):

<http://orcid.org/0000-0002-0165-5581>

- Publications: 155 (including 1 book; 4 book chapters; 11 international and 9 national patents)
- Total citations: 3796 (Scopus)
- *h*-index: 33 (Scopus)

AWARDS

2016: Interuniversity Consortium CIMPIS (Consorzio Interuniversitario Nazionale di Ricerca in Metodologie e Processi Innovativi di Sintesi) for Innovation in Organic Chemistry

1990: Dow Chemicals for best student in Chemistry, University of Milano (I)

OTHER DATA

2020-2021: organizing committee of XXVII National Congress of the Italian Chemical Society (Univ. Milano-Bicocca, Univ. Milano and Politecnico di Milano)

2018: co-chair of XXXVIII National Congress of the Division of Organic Chemistry of the Italian Chemical Society (Univ. Milano-Bicocca e Univ. Milano)

2018: Chair of the Scientific Committee of the First School of Chemistry of Renewable Energies - EnerCHEM (Firenze, I)

2016: Chair of the Scientific Committee of the First Congress of Chemistry of Renewable Energies - EnerCHEM (Firenze, I)

LIST OF PUBLICATIONS

1. **Abbotto, A.**; Alanzo, V.; Bradamante, S.; Pagani, G. A.
"Preparation of Heteroaryl Phenylmethanes and a ^{13}C and ^{15}N NMR Spectroscopic Study of their Conjugate Carbanions. Rotational Isomerism and Charge Maps of the Anions and Ranking of the Charge Demand of the Heterocycles", *J. Chem. Soc. Perkin Trans. 2*, **1991**, 481-488.
2. **Abbotto, A.**; Alanzo, V.; Bradamante, S.; Pagani, G. A.; Rizzoli, C.; Calestani, G.
"Novel Heteroaromatic and Heteroalicyclic Metal Methanates, $[\text{ML}_2]$ (L=Bis-2-Benzothiazolyl and bis-2-thiazolyl)", *Gazz. Chim. Ital.*, **1991**, 121, 365-368.
3. **Abbotto, A.**; Pagani, G. A.
"Formation of Carbon Nitrogen Bonds",
In *Seminars in Organic Synthesis-XVI Summer School A. Corbella*"; Polo Editoriale Chimico: Milano, **1991**, Vol. 16, pp. 8.1-8.28; ISBN:8885104444.
4. **Abbotto, A.**; Bradamante, S.; Pagani, G. A.
"Geometric Isomerism in Substituted 4-Picolyl Carbanions: A Probe for Ranking the Charge Demands of Electron-Withdrawing Groups",
J. Org. Chem., **1993**, 58, 444-448.
5. **Abbotto, A.**; Bradamante, S.; Pagani, G. A.
"Charge Mapping in Carbanions. Weak Charge Demand of the Cyano Group As Assessed from a ^{13}C NMR Study of Carbanions of α -Activated Acetonitriles and Phenylacetonitriles: Breakdown of a Myth",
J. Org. Chem., **1993**, 58, 449-455.
6. **Abbotto, A.**; Bradamante, S.; Pagani, G. A.
"Diheteroarylmethanes II. Active Methylene Behaviour of 2-Thiazolyl and 2-Oxazolyl Derivatives",
Gazz. Chim. Ital., **1994**, 124, 301-308.
7. Pagani, G. A.; **Abbotto, A.**
"Chimica Eterociclica";
Piccin Nuova Libreria: Padova, **1995**; 556 pagine; ISBN: 978-88-299-1189-9.
8. Ragaini, F.; Pizzotti, M.; Cenini, S.; **Abbotto, A.**; Pagani, G. A.; Demartin, F.
"New chelating nitrogen ligands and their application to the catalytic reduction of nitrobenzene to aniline. X-ray structure

- of $[\text{Rh}(\text{CO})_2(\text{BBOM})]$ (HBBOM = bis(2-benzoxazolyl)methane)", *J. Organomet. Chem.*, **1995**, 489, 107-112.
9. **Abbotto, A.**; Bradamante, S.; Pagani, G. A.; Rzepa, H.; Stoppa, F. "Bispyridyl- and bisquinolylmethanes. NMR-based charge mapping of the carbanions and metal ligand properties", *Heterocycles*, **1995**, 40, 757-776.
 10. **Abbotto, A.**; Streitwieser, A. "Aggregation of the Lithium Enolate of *p*-Phenylisobutyrophenone in THF: The Unexpected Importance of Monomer", *J. Am. Chem. Soc.*, **1995**, 117, 6358-6359.
 11. **Abbotto, A.**; Bradamante, S.; Pagani, G. A. "Diheteroarylmethanes. Part 5. E-Z Isomerism of Carbanions Substituted by 1,3-Azoles: ^{13}C and ^{15}N π -Charge/Shift Relationships as Source for Mapping Charge and Ranking the Electron-Withdrawing Power of Heterocycles", *J. Org. Chem.*, **1996**, 61, 1761-1769.
 12. **Abbotto, A.**; Bradamante, S.; Capri, N.; Rzepa, H.; Williams, D. J.; White, A. "Diheteroarylmethanes. Part 6. Probing the Electron-Withdrawing Rank of Heteroaryl Groups by Conformational Studies of Push-Pull Ethylenes. Isolation of NH-Enamine Tautomers of α,α -Diheteroarylacetaldehydes. (Heteroaryl = 2-Benzoxazolyl, 2-Benzothiazolyl)", *J. Org. Chem.*, **1996**, 61, 1770-1778.
 13. Ricceri, R.; **Abbotto, A.**; Facchetti, A.; Pagani, G. A.; Gabrielli, G. "Langmuir-blodgett films of a new pyridinium-dicyanomethanide dye and their potential optical applications", *Langmuir*, **1997**, 13, 3434-3437.
 14. He, G. S.; Yuan, L. X.; Prasad, P. N.; **Abbotto, A.**; Facchetti, A.; Pagani, G. A. "Two-photon pumped frequency-upconversion lasing of a new blue-green dye material", *Optic. Commun.*, **1997**, 140, 49-52.
 15. Ricceri, R.; **Abbotto, A.**; Facchetti, A.; Pagani, G. A.; Gabrielli, G. "A first study of langmuir-blodgett films of 1-[*N*-(*n*-hexadecyl)-4-pyridinio]-2-[5-(dicyanomethanidyl)thien-2-yl]ethene", *Langmuir*, **1997**, 13, 4182-4184.
 16. **Abbotto, A.**; Facchetti, A.; Pagani, G. A.; Yuan, L. X.; Prasad, P. N. "Enhanced second-order optical non-linearity of thiophene-spaced *N*-alkylpyridinium malononitrile zwitterions", *Gazz. Chim. Ital.*, **1997**, 127, 165-166.
 17. **Abbotto, A.**; Bradamante, S.; Facchetti, A.; Pagani, G. A. "Facile, regioselective synthesis of highly solvatochromic thiophene-spaced *N*-alkylpyridinium dicyanomethanides for second-harmonic generation", *J. Org. Chem.*, **1997**, 62, 5755-5765.
 18. Ricceri, R.; Grando, D.; **Abbotto, A.**; Facchetti, A.; Pagani, G. A.; Gabrielli, G. "Aggregated structures in Langmuir-Blodgett films of pyridinium-dicyanomethanide dyes", *Langmuir*, **1997**, 13, 5787-5790.
 19. **Abbotto, A.**; Streitwieser, A.; Schleyer, P. v. R. "Ab Initio and Semiempirical Study of the Effect of Ethereal Solvent on Aggregation of a Lithium Enolate", *J. Am. Chem. Soc.*, **1997**, 119, 11255-11268.
 20. **Abbotto, A.**; Bradamante, S.; Florio, S.; Capriati, V. "A NMR Investigation of α -Heterosubstituted Chloroethylolithiums in THF", *J. Org. Chem.*, **1997**, 62, 8937-8940.
 21. **Abbotto, A.**; Facchetti, A.; Bradamante, S.; Pagani, G. A. "8-Purinylyl versus 2-Benzimidazolyl Carbanions: Charge Demands of the Heterocycles and Ligand Properties of the Bis(heteroaryl)methanes", *J. Org. Chem.*, **1998**, 63, 436-444.
 22. **Abbotto, A.**; Streitwieser, A.; Stratakis, M.; Krom, J. A. "Ion Pair Properties of Lithium and Cesium Salts of Carbazole", *J. Am. Chem. Soc.*, **1998**, 120, 1718-1723.
 23. **Abbotto, A.**; Bradamante, S.; Facchetti, A.; Pagani, G. A.; Ledoux, I.; Zyss, J. "Very Large Second Order Non-Linear Optical Activity Shown by Heterocycle-Based Dicyanomethanide Zwitterions", *Mater. Res. Soc. Symp. Proc.*, **1998**, 488, 819-822.
 24. Streitwieser, A.; Wang, D. Z.; Stratakis, M.; Facchetti, A.; Gareyev, R.; **Abbotto, A.**; Krom, J. A.; Kilway, K. V. "Extended Lithium Ion Pair Indicator Scale in Tetrahydrofuran",

- Canad. J. Chem.*, **1998**, *76*, 765-769.
25. Streitwieser, A.; Krom, J. A.; Kilway, K. V.; **Abbotto, A.**
"Aggregation and Reactivity of the Cesium Enolate of *p*-Phenylisobutyrophenone in Tetrahydrofuran",
J. Am. Chem. Soc., **1998**, *120*, 10801-10806.
 26. **Abbotto, A.**; Leung, S. S.-W.; Streitwieser, A.; Kilway, K. V.
"The Role of Monomer in Alkylation Reactions of the Lithium Enolate of *p*-Phenylisobutyrophenone in Tetrahydrofuran."
J. Am. Chem. Soc., **1998**, *120*, 10807-10813.
 27. Florio, S.; Capriati, V.; Di Martino, S.; **Abbotto, A.**
"Deprotonation of Oxazolinyloxiranes: Formation of Substituted Acyloxiranes"
Eur. J. Org. Chem., **1999**, *2*, 409-417.
 28. Ricceri, R.; **Abbotto, A.**; Facchetti, A.; Pagani, G. A.; Gabrielli, G.
"Information Storage Based on Photochemical Effects in Mixed Langmuir-Blodgett Films",
Thin Solid Films, **1999**, *340*, 218-220.
 29. Ricceri, R.; Neto, C.; **Abbotto, A.**; Facchetti, A.; Pagani, G. A.
"Morphological characterization of H aggregates in Langmuir-Blodgett films of pyridinium-dicyanomethanide dyes",
Langmuir, **1999**, *15*, 2149-2151.
 30. Ricceri, R.; **Abbotto, A.**; Facchetti, A.; Grando, D.; Gabrielli, G.; Pagani, G. A.
"Langmuir-Blodgett films of pyridinium-dicyanomethanide dyes mixtures with photobleachable absorption bands",
Colloid Surf. A-Physicochem. Eng. Asp. **1999**, *150*, 289-296.
 31. **Abbotto, A.**; Facchetti, A.; Bradamante, S.; Pagani, G. A.
"Diheteroarylmethanes. 8. Mapping Charge and Electron-Withdrawing Power of the 1,2,4-Triazol-5-yl Substituent",
J. Org. Chem., **1999**, *64*, 6756-6763.
 32. Florio, S.; Capriati, V.; Luisi, R.; **Abbotto, A.**
"Boron Azaenolates of Chiral Oxazolines: Synthesis of Optically Active Formyl Oxiranes"
Tetrahedron Lett., **1999**, *40*, 7421-7425.
 33. **Abbotto, A.**; Ferruti, P.; Gilberti, M.; Pagani, G. A.
"Incorporation of highly efficient second- and third-order nonlinear optical chromophores into poly(amido-amine) backbones"
SPIE Proceed., **1999**, *3796*, 328-335.
 34. **Abbotto, A.**; Bozio, R.; Brusatin, G.; Facchetti, A.; Guglielmi, M.; Innocenzi, P.; Meneghetti, M.; Pagani, G. A.; Signorini, R.
"Novel hybrid organic-inorganic sol-gel materials based on highly efficient heterocyclic push-pull chromophores"
SPIE Proceed., **1999**, *3803*, 18-25.
 35. **Abbotto, A.**; Bruni, S.; Cariati, F.; Pagani, G. A.
"A spectroscopic and magnetic study of complexes of bis(2-benzothiazolyl)methanate and bis(2-benzoxazolyl)methanate with Co(II), Ni(II), Cu(II) and Zn(II)"
Spectrochimica Acta Part A, **2000**, *56*, 1543-1552.
 36. **Abbotto, A.**,* Beverina, L.; Bozio, R.; Bradamante, S.; Ferrante, C.; Pagani, G. A.; Signorini, R.
"Push-Pull Organic Chromophores for Frequency-Upconverted Lasing" – **General review su invito**
Adv. Mater., **2000**, *12*, 1963-1967.
 37. **Abbotto, A.**; Bozio, R.; Pagani, G. A.
"Composti eteroaromatici ad elevata prestazione come limitatori ottici in soluzione tramite assorbimento a due fotoni",
proprietario: University of Milano-Bicocca, brevetto italiano n. domanda MI2000A000612, data di deposito Marzo **2000**;
brevetto n. 0001318421, concessione 25/08/2003.
 38. **Abbotto, A.**; Capriati, V.; De Gennaro, L.; Florio, S.; Luisi, R.; Pierrot, M.; Salomone, A.
"A Stereospecific Synthesis of Oxazolinyloxiranes"
J. Org. Chem. **2001**, *66*, 3049-3058.
 39. **Abbotto, A.**,* Beverina, L.; Bozio, R.; Bradamante, S.; Pagani, G. A.; Signorini, R.
"Heterocycle-based materials for frequency-upconverted lasing"
Synth. Met., **2001**, *121*, 1755-1756.
 40. Florio, S.; Capriati, V.; Luisi, R.; **Abbotto, A.**; Pippel, D. J.
"On the Coupling Reaction of Lithium Azaenolates of Chiral Oxazolines with Carbonyl Compounds"
Tetrahedron, **2001**, *57*, 6775-6786.
 41. Facchetti, A.; van der Boom, M. E.; **Abbotto, A.**; Beverina, L.; Marks, T. J.; Pagani, G. A.
"Design and Preparation of Zwitterionic Organic Thin-Films: Self-Assembled Siloxane-Based Thiophene-Spaced *N*-

- Benzylpyridinium Dicyanomethanides as Nonlinear Optical Materials”
Langmuir, **2001**, *17*, 5939-5942.
42. Pagani, G. A.; Marks, T. J.; **Abbotto, A.**; Beverina, L.; van der Boom, M. E.; Bradamante, S.; Facchetti, A.
“Novel Heterocycle-Based Dyes for Photonics: Effect of Self-Assembling, Pyridine Annulation, and Medium on Molecular Response”
Polym. Prepr., **2001**, *42*, 567-568.
43. **Abbotto, A.**; Bozio, R.; Pagani, G. A.
“Heteroaromatic Compounds Having Two-Photon Absorption Activity”
PCT Int. Appl., WO 0170735, A1 20010927 AN 2001:713344, **2001** (domanda USA: US2003118916, 2003; domanda Canada: CA2402564, 2002; domanda Europa: EP1268467, 2003)
44. **Abbotto, A.**; Bradamante, S.; Pagani, G. A.
“Pyridoneimines and Pyridonemethides: Substituent- and Solvent-Tunable Intramolecular Charge Transfer and Geometric Isomerism”
J. Org. Chem., **2001**, *66*, 8883-8892.
45. Facchetti, A.; **Abbotto, A.**; Beverina, L.; van der Boom, M. E.; Marks, T. J.; Pagani, G. A.
“Self-assembled heterocycle-based films. Evidence for the high donor efficiency of the pyrrol-2-yl group in push-pull chromophores”
Polym. Prepr., **2002**, *43*, 459-460.
46. **Abbotto, A.**,* Beverina, L.; Bozio, R.; Facchetti, A.; Ferrante, C.; Pagani, G. A.*; Pedron, D.; Signorini, R.
“Novel Heterocycle-Based Two-Photon Absorbing Dyes”
Org. Lett., **2002**, *4*, 1495-1498.
47. **Abbotto, A.**; Bradamante, S.; Facchetti, A.; Pagani, G. A.
“Metal chelation aptitudes of bis-ortho-aza-heteroarylmethanes as tuned by heterocycle charge demands”
J. Org. Chem., **2002**, *67*, 5753-5772.
48. Facchetti, A.; **Abbotto, A.**; Beverina, L.; van der Boom, M. E.; Marks, T. J.; Pagani, G. A.
“Self-assembled heterocycle-based films. Layer-by-layer fabrication of highly transparent superlattices”
Polym. Prepr., **2002**, *43*, 1292-1293.
49. Innocenzi, P.; Miorin, E.; Brusatin, G.; **Abbotto, A.**; Beverina, L.; Pagani, G. A.; Casalboni, M.; Sarcinelli, F.; Pizzoferrato, R.
“Incorporation of zwitterionic push-pull chromophores in hybrid organic-inorganic matrices”
Chem. Mater., **2002**, *14*, 3758-3766.
50. **Abbotto, A.**; Beverina, L.; Bozio, R.; Pagani, G. A.; Signorini, R.
“Cromofori eteroaromatici con attività di assorbimento a due fotoni, e composizioni che li comprendono”, proprietario: University of Milano-Bicocca, brevetto italiano n. domanda MI2002A001809, data di deposito Agosto **2002**; brevetto n. 0001341784, concessione 18/10/2007.
51. Facchetti, A.; **Abbotto, A.**; Beverina, L.; van der Boom, M. E. Dutta, P.; Evmenenko, G.; Marks, T. J.; Pagani, G. A.
“Azinium-(π -bridge)-pyrrole NLO-phores: influence of heterocycle acceptors on chromophoric and self-assembled thin film properties”
Chem. Mater., **2002**, *12*, 4996-5005.
52. Innocenzi, P.; Brusatin, G.; **Abbotto, A.**; Beverina, L.; Pagani, G. A.; Casalboni, M.; Sarcinelli, F.; Pizzoferrato, M.
“Entrapping of push-pull zwitterionic chromophores in hybrid matrices for photonic applications”,
J. Sol-Gel Sci. Technol., **2003**, *26*, 967-970.
53. **Abbotto, A.**; Beverina, L.; Facchetti, A.; Ferruti, P.; Gilberti, M.; Pagani, G. A.
“Incorporation of efficient NLO-phores into crosslinked poly(amino-amide) matrixes”
Polym. Prepr., **2003**, *44*, 1006-1007.
54. Facchetti, A.; **Abbotto, A.**; Beverina, L.; van der Boom, M. E.; Marks, T. J.; Pagani, G. A.
“Self-assembled heterocycle-based films. Properties of novel pyridine-pyrrole chromophores anchored to functionalized siliceous substrates”
Polym. Prepr., **2003**, *44*, 1171-1172.
55. Facchetti, A.; **Abbotto, A.**; Beverina, L.; E. van der Boom, M. E.; Dutta, P.; Evmenenko, G.; Marks, T. J.; Pagani, G. A.
“Layer-by-Layer Self-Assembled Pyrrole-Based Donor-Acceptor Chromophores as Electro-Optic Materials”
Chem. Mater., **2003**, *15*, 1064-1072.
56. **Abbotto, A.**; Beverina, L.; Chirico, G.; Facchetti, A.; Ferruti, P.; Gilberti, M.; Pagani, G. A.
“Crosslinked Poly(amido-amine)s as Superior Matrices for Chemical Incorporation of Highly Efficient Organic Nonlinear Optical Dyes”
Macromol. Rapid. Commun., **2003**, *24*, 397-402.

57. Signorini, R.; Pedron, D.; Ferrante, C.; Bozio, R.; Brusatin, G.; Innocenzi, P.; Della Negra, F.; Maggini, M.; **Abbotto, A.**; Beverina, L.; Pagani, G.
"Optical limiting based on multiphoton processes in carbon nanostructures and heterocyclic quadrupolar molecules"
SPIE Proceed., **2003**, 4797, 1-14.
58. **Abbotto, A.**; Beverina, L.; Brusatin, G.; Casalboni, M.; Innocenzi, P.; Pagani, G. A.; Sarcinelli, F.
"Materiale ibrido organico-inorganico a risposta ottica non-lineare a base di cromofori organici e procedimento di preparazione del medesimo", proprietario: University of Milano-Bicocca, brevetto italiano n. domanda PD2003A000080, data di deposito Aprile **2003**, concessione 16 Giugno 2008.
59. **Abbotto, A.**;* Beverina, L.; Bradamante, S.; Facchetti, A.; Klein, C.; Pagani, G. A.*; Redi-Abshiro, M.; Wortmann, R.
"A Distinctive Example of the Cooperative Interplay of Structure and Environment in Tuning Intramolecular Charge Transfer in Second-Order NLO Chromophores"
Chem. Eur. J., **2003**, 9, 1991-2007.
60. **Abbotto, A.**;* Beverina, L.; Bozio, R.; Bradamante, S.; Facchetti, A.; Ferrante, C.; Pagani, G. A.; Pedron, D.; Signorini, R.
"Novel heterocycle-based two-photon absorbing dyes"
NATO Science Ser. II, **2003**, 100, 385-393.
61. Signorini, R.; Ferrante, C.; Pedron, D.; Slaviero, M.; Bozio, R.; Beverina, L.; **Abbotto, A.**; Pagani, G. A.
"Highly efficient multiphoton absorption in a new quadrupolar heterocyclic dye"
NATO Science Ser. II, **2003**, 100, 231-240.
62. **Abbotto, A.**;* Beverina, L.; Bozio, R.; Facchetti, A.; Ferrante, C.; Pagani, G. A.*; Pedron, D.; Signorini, R.
"Novel heteroaromatic-based multi-branched dyes with enhanced two-photon absorption activity"
Chem. Commun., **2003**, 17, 2144-2145.
63. **Abbotto, A.**;* Beverina, L.; Bradamante, S.; Facchetti, A.; Pagani, G. A.; Bozio, R.; Ferrante, C.; Pedron, D.; Signorini, R.
"Design and Synthesis of Heterocyclic Multi-Branched Dyes for Two-Photon Absorption"
Synth. Met., **2003**, 139, 795-797.
64. **Abbotto, A.**; Beverina, L.; Chirico, G.; Facchetti, A.; Ferruti, P.; Pagani, G. A.
"Design and Synthesis of New Improved Functional Polymers for Nonlinear Optical Applications"
Synth. Met., **2003**, 139, 629-632.
65. **Abbotto, A.**;* Beverina, L.; Pagani, G. A.; Collini, M.; Chirico, G.; D'Alfonso, L.; Baldini, G.
"Novel Efficient and Stable Heteroaromatic Two-Photon Absorbing Dyes"
SPIE Proceed., **2003**, 5139, 223-230.
66. D'Alfonso, L.; Chirico, G.; Collini, M.; Baldini, G.; Diaspro, A.; Ramoino, P.; **Abbotto, A.**; Beverina, L. Pagani, G.
"New Two-Photon Excitation Chromophores For Cellular Imaging"
SPIE Proceed., **2003**, 5139, 27-35.
67. Brusatin, G.; Innocenzi, P.; **Abbotto, A.**; Beverina, L.; Pagani, G. A.; Casalboni, M.; Sarcinelli, F.; Pizzoferrato, R.
"Hybrid organic-inorganic materials containing poled zwitterionic push-pull chromophores"
J. Eur. Ceram. Soc., **2004**, 24, 1853-1856.
68. **Abbotto, A.**; Beverina, L.; Bozio, R.; Pagani, G. A.; Signorini, R.
"Two-photon absorption heteroaromatic chromophores and compositions thereof"
PCT Int. Appl., WO 2004/018456 A1 20040304, *Chem. Abstr.* **2004**, 182869 (domanda USA: US2005244807, 2005; domanda Canada: CA2495050, 2004; domanda Europa: EP1534702, 2004)
69. Facchetti, A.; **Abbotto, A.**; Beverina, L.; Bradamante, S.; Mariani, P.; Stern, C. L.; Marks, T. J.; Vacca, A.; Pagani, G. A.
"Novel coordinating motifs for lanthanide (III) ions based on 5-(2-pyridyl)-tetrazole and 5-(2-pyridyl-1-oxide)tetrazole. Potential new contrast agents"
Chem. Commun., **2004**, 1770-1771.
70. Sarcinelli, F.; **Abbotto, A.**; Beverina, L.; Pagani, G.; Brusatin, G.; Innocenzi, P.; Casalboni, M.
"Hybrid organic-inorganic material with non-linear optical response based on organic chromophores and process for the preparation thereof"
PCT Int. Appl., WO 2004/092820 A1 20041028, *Chem. Abstr.* **2004**, 906026 (brevetto europeo concesso: EP1616218, 2006)
71. Brusatin, G.; **Abbotto, A.**; Beverina, L.; Pagani, G. A.; Casalboni, M.; Sarcinelli, F.; Innocenzi, P.
"Poled sol-gel materials with heterocycle push-pull chromophores with enhanced second-order optical nonlinearity"
Adv. Funct. Mater., **2004**, 14, 1160-1166.
72. Brusatin, G.; Innocenzi, P.; Guglielmi, M.; **Abbotto, A.**; Beverina, L.; Pagani, G. A.; Casalboni, M.; Sarcinelli, F.
"Poled sol-gel materials doped with heterocycle-based push-pull chromophores with second-order optical non-linearity"
J. Non-Cryst. Solids, **2004**, 345-346, 575-579.
73. **Abbotto, A.**; Baldini, G.; Beverina, L.; Chirico, G.; Collini, M.; D'Alfonso, L.; Diaspro, A.; Magrassi, R.; Nardo, L.; Pagani, G. A.

- "Dimethyl-pepep: a DNA probe in two-photon excitation cellular imaging",
Biophys. Chem. **2005**, *114*, 35-41.
74. Beverina, L.; **Abbotto, A.**; Landenna, M.; Cerminara, M.; Tubino, R.; Meinardi, F.; Bradamante, S.; Pagani, G. A.
"New π -Extended Water-Soluble Squaraines as Singlet Oxygen Generators",
Org. Lett. **2005**, *7*, 4257-4260.
75. Della Giustina, G.; Brusatin, G.; Guglielmi, M.; Dispenza, M.; Fiorello, A. M.; Varasi, M.; Casalboni, M.; Quatela, A.; De Matteis, F.; Giorgetti, E.; Margheri, G.; Innocenzi, P.; **Abbotto, A.**; Beverina, L.; Pagani, G. A.
"Electro-optics poled sol-gel materials doped with heterocycle push-pull chromophores",
Mater. Sci. Engin. C **2006**, *26*, 979-982.
76. **Abbotto, A.***
"Organic Chemical Reactions"
In "Organic and Bio-molecular Chemistry"; Nicotra, F., Ed.; from *Encyclopedia of Life Support Systems (EOLSS)*, Developed under the auspices of the UNESCO; Eolss Publishers: Oxford; **2006** [<http://www.eolss.net>]; e-book format: Vol. 1, pp. 169-223; **2008**; ISBN-978-1-905839-98-8.
77. Morone, M.; Beverina, L.; **Abbotto, A.**; Silvestri, F.; Collini, E.; Ferrante, C.; Bozio, R.; Pagani, G. A.
"Enhancement of Two-Photon Absorption Cross-Section and Singlet-Oxygen Generation in Porphyrins upon β -Functionalization with Donor-Acceptor Substituents",
Org. Lett. **2006**, *8*, 2719-2722.
78. Pagani, G. A.; Bradamante, S.; **Abbotto, A.**; Beverina, L.
"Uso di fluorofori per la localizzazione selettiva di mitocondri", proprietario: University of Milano-Bicocca, brevetto italiano n. domanda PD2006A000128, data di deposito Aprile **2006**.
79. Archetti, G.; **Abbotto, A.**;* Wortmann, R.*
"Effect of polarity and structural design on molecular photorefractive properties of heteroaromatic based push-pull dyes"
Chem. Eur. J. **2006**, *12*, 7151-7160.
80. Morone, M.; Beverina, L.; **Abbotto, A.**; Pagani, G. A.
"Frontiers in Biophotonics: Heterocycle-Based Photosensitizers for Photodynamic Therapy (PDT)"
In *Targets in Heterocyclic Systems. Chemistry and Properties*; Attanasi, O. A., Spinelli, D., Eds.; Società Chimica Italiana: Roma; **2005**; Vol. 9; pp. 66-86; ISBN: 978-8-88620-831-4.
81. **Abbotto, A.**;* Beverina, L.
"Molecular Organic Materials for Nonlinear Optics: How to Interact with Laser Beams and Exploit Molecular Structural Properties to Make Advanced Technology" - General review su invito,
In "Seminars in Organic Synthesis-XXXI Summer School A. Corbella"; Società Chimica Italiana: Roma, **2006**; pp. 97-120; ISBN: 978-8-88620-832-1.
82. Pagani, G.; Mari, C.; **Abbotto, A.**; Beverina, L.; Ruffo, R.; Patriarca, G.; Schottner, G.; Posset, U.; Ayse, C.
"Highly transparent electrochromic coating material, method for producing the same and use of the material",
Eur. Pat. Appl. **2006**, EP 06024930.7; *PCT Int. Appl.* **2008**, WO2008064878; issued May 20 2009 no. 1928000.
83. Mazzucato, S.; Fortunati, I.; Scolaro, S.; Zerbetto, M.; Ferrante, C.;* Signorini, R.; Pedron, D.; Bozio, R.; Locatelli, D.; Righetto, S.; Roberto, D.;* Ugo, R.; **Abbotto, A.**;* Archetti, G.; Beverina, L.; Ghezzi, S.
"Two-photon absorption of Zn(II) octupolar molecules",
Phys. Chem. Chem. Phys., **2007**, *9*, 2999-3005.
84. Pagani, G. A.; Bradamante, S.; **Abbotto, A.**; Beverina, L.
"Use of fluorophores for the selective localisation of mitochondria",
PCT Int. Appl. WO 2007/113321 A1 20071011 AN 2007:1146708, **2007**.
85. Proutiere, S.; Ferruti, P.; Ugo, R.; **Abbotto, A.**; Bozio, R.; Cozzuol, M.; Dragonetti, C.; Emilietri, E.; Locatelli, D.; Marinotto, D.; Pagani, G.; Pedron, D.; Roberto, D.
"A three steps procedure (swelling-poling-deswelling) to produce a stable alignment of second order NLO-phores covalently attached to a cross-linked polymeric network",
Mater. Sci. Eng., B **2008**, *147*, 293-297.
86. Signorini, R.; Ferrante, C.; Pedron, D.; Zerbetto, N.; Cecchetto, E.; Slaviero, N.; Fortunati, I.; Collini, E.; Bozio, R.; **Abbotto, A.**; Beverina, L.; Pagani, G. A.
"Effective two-photon absorption cross-section of heteroaromatic quadrupolar dyes: dependence on measurement technique and laser pulse characteristics",
J. Phys. Chem. A **2008**, *112*, 4224-4234.
87. **Abbotto, A.**;* Barolo, C.; Yum, J.-H.; Bellotto, L.; De Angelis, F.;* Grätzel, M.; Marini, C.; Nazeeruddin, M. K.*
"Ruthenium sensitizers based on heteroaromatic conjugated bipyridines for dye-sensitized solar cells",

- SPIE Proceed.* **2008**, 6999, 699900-1 - 699900-9.
88. **Abbotto, A.;*** Bellotto, L.; Marinzi, C.; Painelli, A.;* Terenziani, F.; Sissa, C.; Ferrante, C.;* Fortunati, I.; Bozio, R. "One- and two-photon absorption and emission properties of heteroaromatic bichromophores", *SPIE Proceed.* **2008**, 6999, 69990K-1 - 69990K-10.
 89. Comoretto, D.;* Cucini, M.; Galli, M.; Marabelli, F.; **Abbotto, A.;*** Bellotto, L.; Marinzi, C. "Emission properties of artificial opals infiltrated with a heteroaromatic quadrupolar dye", *SPIE Proceed.* **2008**, 6999, 69992D-1 - 69992D-11.
 90. **Abbotto, A.;*** Bellotto, L.; De Angelis, F.;* Manfredi, N.; Marinzi, C. "Heteroaromatic donor-acceptor π -conjugated 2,2'-bipyridines", *Eur. J. Org. Chem.* **2008**, 5047-5054.
 91. **Abbotto, A.;*** Barolo, C.; Bellotto, L.; De Angelis, F.;* Grätzel, M.; Manfredi, N.; Marinzi, C.; Fantacci, S.; Yum, J.-H.; Nazeeruddin, M. K.* "Electronrich heteroaromatic conjugated bipyridine based ruthenium sensitizer for efficient dye-sensitized solar cells", *Chem. Commun.* **2008**, 5318-5320.
 92. **Abbotto, A.;*** Beverina, L.; Manfredi, N.; Pagani, G. A.;* Archetti, G.; Kuball, H.-G.; Wittenburg, C.; Heck, J.; Holtmann, J. "Second-Order Nonlinear Optical Activity of Dipolar Chromophores Based on Pyrrole-Hydrazono Donor Moieties", *Chem. Eur. J.* **2009**, 15, 6175-6185.
 93. Dragonetti, C.; Balordi, M.; Colombo, A.; Roberto, D.; Ugo, R.; Fortunati, I.; Garbin, E.; Ferrante, C.; Bozio, R.; **Abbotto, A.;** Le Bozec, H. "Two-photon absorption properties of Zn(II) complexes: Unexpected large TPA cross section of dipolar [ZnY2(4,4'-bis(para-di-n-butylaminostyryl)-2,2'-bipyridine)] (Y=Cl, CF3CO2)", *Chem. Phys. Lett.* **2009**, 475, 245-249.
 94. Di Stasio, F.; Cucini, M.; Berti, L.; Comoretto, D.; **Abbotto, A.;** Bellotto, L.; Manfredi, N.; Marinzi, C. "Tuning optical properties of opal photonic crystals by structural defects engineering", *J. Europ. Opt. Soc. Rap. Public.* **2009**, 4, 09033-1 - 09033-7.
 95. Capriati, V.; Florio, S.; Perna, F. M.; Salomone, A.; **Abbotto, A.;** Amedjkouh, M.; Nilsson Lill, S.O. "On the Dichotomic Reactivity of Lithiated Styrene Oxide: A Computational and Multinuclear Magnetic Resonance Investigation", *Chem. Eur. J.* **2009**, 15, 7958-7979.
 96. **Abbotto, A.;*** Manfredi, N.; Marinzi, C.; Angelis, F. D.; Mosconi, E.; Yum, J.-H.; Xianxi, Z.; Nazeeruddin, M.K.; Gratzel, M. "Di-branched di-anchoring organic dyes for dye-sensitized solar cells", *Energy Environ. Sci.* **2009**, 2, 1094-1101.
 97. **Abbotto, A.;*** De Angelis, F.;* Nazeeruddin, M. D.;* Graetzel, M.; Marinzi, C.; Manfredi, N. "Novel Ligands for Sensitizing Dyes of Dye-Sensitized Solar Cells" Brevetto Europeo EP 2009-171711, PCT Int. Appl. **2011**, WO 2011039715 A1 20110407; data di deposito Settembre **2009**.
 98. Sissa, C.; Terenziani, F.; Painelli, A.;* **Abbotto, A.;*** Bellotto, L.; Marinzi, C.; Garbin, E.; Ferrante, C.;* Bozio, R. "Dimers of quadrupolar chromophores in solution: electrostatic interactions and optical spectra" *J. Phys. Chem. B* **2010**, 114, 882-893; dx.doi.org/10.1021/jp909475d
 99. Berti, L.; Cucini, M.; Di Stasio, F.; Comoretto, D.;* Galli, M.; Marabelli, F.; Manfredi, N.; Marinzi, C.; **Abbotto, A.;*** "Spectroscopic investigation of artificial opals infiltrated with a heteroaromatic quadrupolar dye" *J. Phys. Chem. C* **2010**, 114, 2403-2413; dx.doi.org/10.1021/jp906002q.
 100. **Abbotto, A.;*** Manfredi, N.; Coluccini, C.; Roberto, D.; Ugo, R.; Dragonetti, C.; Valore, A.; Colombo, A. "Nuovi complessi ciclometalati per celle solari" brevetto italiano n. domanda MI2010A001400, proprietari: University of Milano-Bicocca e University of Milano; data di deposito Luglio **2010**.
 101. **Abbotto, A.;*** Herrera Calderon, E.; Dangate, M. S.; De Angelis, F.; Manfredi, N.; Mari, C. M.; Marinzi, C.; Mosconi, E.; Muccini, M.; Ruffo, R.; Seri, M. "Pyridine-EDOT Heteroarylene-Vinylene Donor-Acceptor Polymers" *Macromolecules* **2010**, 43, 9698-9713; dx.doi.org/10.1021/ma1017132 (Publication Date (Web): November 10, 2010).
 102. **Abbotto, A.;*** Sauvage, F.; Barolo, C.; De Angelis, F.;* Fantacci, S.; Graetzel, M.; Manfredi, N.; Marinzi, C.; Nazeeruddin, M. K.* "Panchromatic ruthenium sensitizer based on electron-rich heteroarylvinylene π -conjugated quaterpyridine for dye-sensitized solar cells" *Dalton Trans.* **2011**, 40, 234-242; dx.doi.org/10.1039/C0DT01190H.
 103. **Abbotto, A.;** Herrera Calderon, E.; Manfredi, N.; Mari, C. M.; Marinzi, C.; Ruffo, R.

- “Vinylene-Linked Pyridine-Pyrrole Donor-Acceptor Conjugated Polymers”
Synth. Metals **2011**, 161, 763-769; 10.1016/j.synthmet.2011.01.027.
104. Mosquera Vázquez, S.; **Abbotto, A.**; De Angelis, F.; Foggi, P.; Lapini, A.; Lima, M.; Lobello, M.; Marcelli, A.; Tourón Touceda, P.
 “Transient absorption spectroscopy of a heteroaromatic donor–acceptor- π -conjugated 2,2'-bipyridine dye”
J. Mol. Struct. **2011**, 993, 464-469; dx.doi.org/10.1016/j.molstruc.2011.01.042.
105. **Abbotto, A.**;* Simonutti, R.; Manfredi, N.; Bianchi, A.
 “Elettroliti solidi a base di copolimeri a blocchi per celle fotovoltaiche a colorante, e celle così ottenute”
 brevetto italiano n. domanda MI2011A000833, proprietario: University of Milano-Bicocca; data di deposito 12 Mag **2011**.
106. **Abbotto, A.**;* Manfredi N.
 “Electron-rich heteroaromatic conjugated polypyridine ruthenium sensitizers for dye-sensitized solar cells”
Dalton Trans., **2011**, 40, 12421-12438; dx.doi.org/10.1039/C1DT10832H.
Review su invito; cover article.
107. Coluccini, C.; Manfredi, N.; Herrera Calderon, E.; Salamone, M. M.; Ruffo, R.; Roberto, D.; Lobello, M. G.; De Angelis, F.; **Abbotto, A.***
 “Photophysical and Electrochemical Properties of Thiophene-Based 2-Arylpyridines”
Eur. J. Org. Chem., **2011**, 5587-5598; dx.doi.org/10.1002/ejoc.201100651.
108. **Abbotto, A.**;* Leandri, V.; Manfredi, N.; De Angelis, F.;* Pastore, M.; Yum, J.-H.; Nazeeruddin, M. K.;* Grätzel, M.
 “Bis-Donor–Bis-Acceptor Tribranched Organic Sensitizers for Dye-Sensitized Solar Cells”
Eur. J. Org. Chem., **2011**, 6195-6205; dx.doi.org/10.1002/ejoc.201100821.
109. **Abbotto, A.**;* Manfredi, N.; Coluccini, C.; Roberto, D.;* Ugo, R.; Dragonetti, C.; Valore, A.; Colombo, A.
 “New Cyclometalated Complexes for Solar Cells”
 PCT Int. Appl. **2012**, WO 2012013719 A1 20120202.
110. **Abbotto, A.**;* Comoretto, D.;* Gagliardi, F.; Marabelli, F.*
 “Nuovi composti otticamente sensibili ai composti elettron-poveri”,
Ital. Patent. Appl. **2012**, MI2012A000636, 17/4/12 (Applicants: University of Pavia, University of Milano-Bicocca, University of Genova, Fondazione Cariplo)
111. **Abbotto, A.**;* Manfredi, N.; Comoretto, D.;* Gagliardi, F.; Marabelli, F.*
 “Nuovi polimeri otticamente sensibili ai composti elettron-poveri”,
Ital. Patent. Appl. **2012**, MI2012A000637, 17/4/12 (Applicants: University of Pavia, University of Milano-Bicocca, University of Genova, Fondazione Cariplo)
112. Dell’Orto, E.; Raimondo, L.; Sassella, A.;* **Abbotto, A.***
 “Dye-sensitized solar cells: spectroscopic evaluation of dye loading on TiO₂”
J. Mater. Chem. **2012**, 22, 11364 – 11369; dx.doi.org/10.1039/C2JM30481C.
113. **Abbotto, A.**;* Seri, M.; Dangate, M. S.; De Angelis, F.; Manfredi, N.; Mosconi, E.; Bolognesi, M.; Ruffo, R.;* Salamone, M. M.; Muccini, M.
 “A Vinylene-Linked Benzo[1,2-*b*:4,5-*b'*]dithiophene – 2,1,3-Benzothiadiazole Low-Bandgap Polymer”
J. Polym. Sci. Part A **2012**, 50, 2829-2840; dx.doi.org/10.1002/pola.26046.
Cover article.
114. Dragonetti, C.;* Valore, A.; Colombo, A.; Roberto, D.; Trifiletti, V.; Manfredi, N.; Salamone, M. M.; Ruffo, R.; **Abbotto, A.***
 “A new thiocyanate-free cyclometallated ruthenium complex for dye-sensitized solar cells: beneficial effects of substitution on the cyclometallated ligand”
J. Organomet. Chem. **2012**, 714, 88-93; dx.doi.org/10.1016/j.jorganchem.2012.03.011.
115. **Abbotto, A.**;* Coluccini, C.; Dell’Orto, E.; Manfredi, N.; Trifiletti, V.; Salamone, M. M.; Ruffo, R.; Acciarri, M.; Colombo, A.; Dragonetti, C.; Ordanini, S.; Roberto, D.;* Valore, A.
 “Thiocyanate-free cyclometalated ruthenium sensitizers for solar cells based on heteroaromatic-substituted 2-arylpyridines”
Dalton Trans., **2012**, 41, 11731-11738; dx.doi.org/10.1039/C2DT31551C.
116. Maiorana, S.; Licandro, E.; Longhi, E.; Cauteruccio, S.; **Abbotto, A.**; Baldoli, C.; De Angelis, F.
 “Metal-free photosensitizers”
PCT Int. Appl. **2012**; WO 2012/107488.
117. **Abbotto, A.**;* Acciarri, M. F.; Biagini, P.; Binetti, S. O.
 “Colorante organico per una cella solare sensibilizzata da colorante”
Ital. Pat. Appl. **2012**; MI2012A001672 (5/10/12) (University of Milano Bicocca – ENI SpA)
118. Coluccini, C.; Manfredi, N.; Salamone, M. M.; Ruffo, R.; Lobello, M. G.; De Angelis, F.;* **Abbotto, A.***

- “Quaterpyridine ligands for panchromatic Ru(II) dye sensitizers”
J. Org. Chem. **2012**, *77*, 7945–7956; dx.doi.org/10.1021/jo301226z.
119. **Abbotto, A.**;* Simonutti, R.; Manfredi, N.; Bianchi, A.
“Block copolymer-based solid electrolytes for dye photovoltaic cells, and cells thus obtained”
PCT Int. Appl. **2012**, WO 2012153300 A1 20121115.
120. **Abbotto, A.**;* Biagini, P.; Manfredi, N.
“Colorante organico per una cella solare sensibilizzata da colorante”
Ital. Pat. Appl. **2013**; MI2013A000208 (14/02/13) (University of Milano Bicocca – ENI SpA).
121. Le Donne, A.; Scaccabarozzi, A.; Tombolato, S.; Binetti, S.; Acciarri, M.; **Abbotto, A.**
“Solar Photovoltaics: A Review”
Rev. Adv. Sci. Eng. **2013**, *2*, 170-178; dx.doi.org/10.1166/rase.2013.1030.
122. Di Carlo, G.; Orbelli Biroli, A.; Pizzotti, M.; Tessore, F.; Trifiletti, V.; Ruffo, R.; **Abbotto, A.**; Amat, A.; De Angelis, F.; Mussini, P. R.
“Tetraaryl Zn(II) Porphyrinates Substituted at β -Pyrrolic Positions as Sensitizers in Dye-Sensitized Solar Cells: A Comparison with meso-Disubstituted Push–Pull Zn(II) Porphyrinates”,
Chem. Eur. J. **2013**, *19*, 10723-10740; dx.doi.org/10.1002/chem.201300219.
123. Dragonetti, C.; Valore, A.; Colombo, A.; Magni, M.; Mussini, P.; Roberto, D.; Ugo, R.; Valsecchi, A.; Trifiletti, V.; Manfredi, N.; **Abbotto, A.***
“Ruthenium Oxquinolate Complexes for Dye-Sensitized Solar Cells”
Inorganica Chimica Acta **2013**, *405*, 98-104; dx.doi.org/10.1016/j.ica.2013.05.006.
124. Trifiletti, V.; Ruffo, R.; Turrini, C.; Tasseti, D.; Brescia, R.; Di Fonzo, F.; Riccardi, C.; **Abbotto, A.***
“Dye-sensitized solar cells containing plasma jet deposited hierarchical nanostructured TiO₂ thin photoanodes”
J. Mater. Chem. A **2013**, *1*, 11665-11673; dx.doi.org/10.1039/C3TA11485F.
125. Leandri, V.; Ruffo, R.; Trifiletti, V.; **Abbotto, A.***
“Asymmetric Tribranched Dyes: an Intramolecular Co-Sensitization Approach for Dye-Sensitized Solar Cells”
Eur. J. Org. Chem. **2013**, 6793-6801; dx.doi.org/10.1002/ejoc.201300962.
Cover article.
126. Calderon, E.; Dangate, M.; Manfredi, N.; **Abbotto, A.**;* Salamone, M.; Ruffo, R.; Mari, C.
“Electrochemical and Spectroelectrochemical Properties of a New Donor–Acceptor Polymer Containing 3,4-Dialkoxythiophene and 2,1,3-Benzothiadiazole Units”
Polymers **2013**, *5*, 1068-1080; dx.doi.org/10.3390/polym5031068.
127. Lobello, M. G.; Fantacci, S.; Manfredi, N.; Coluccini, C.; **Abbotto, A.**;* Nazeeruddin, Md. K.;* De Angelis, F.*
“Design of Ru(II) sensitizers endowed by three anchoring units for adsorption mode and light harvesting optimization”
Thin Solid Films **2014**, *560*, 86-93; dx.doi.org/10.1016/j.tsf.2013.08.112.
128. Collini, E.; Bolzonello, L.; Zerbetto, M.; Ferrante, C.; Manfredi, N.; **Abbotto, A.**
“Lifetime shortening and fast energy transfer processes upon dimerization of a A- π -D- π -A molecule”
ChemPhysChem **2014**, *15*, 310-319; dx.doi.org/10.1002/cphc.201300694.
129. Manfredi, N.; Bianchi, A.; Causin, V.; Ruffo, R.; Simonutti, R.;* **Abbotto, A.***
“Electrolytes for quasi solid-state dye-sensitized solar cells based on blockcopolymers”
J. Polym. Sci. A **2014**, *52*, 719-727; dx.doi.org/10.1002/pola.27055.
130. Di Carlo, G.; Orbelli Biroli, A.; Tessore, F. Pizzotti, M.; Mussini, P. R.; Amat, A.; De Angelis, F.; **Abbotto, A.**; Trifiletti, V.; Ruffo, R.
“A Physico-Chemical Investigation of the Panchromatic Effect on β -Substituted ZnII Porphyrinates for DSSCs: The Role of the π Bridge between a Dithienylethylene Unit and the Porphyrinic Ring”
J. Phys. Chem. C **2014**, *118*, 7307-7320; dx.doi.org/10.1021/jp412087f.
131. Ros, I.; Placido, T.; Amendola, V.; Marinzi, C.; Manfredi, N.; Comparelli, R.; Striccoli, M.; Agostiano, A.; **Abbotto, A.**; Pedron, D.; Pilot, R.; Bozio, R.
“SERS Properties of Gold Nanorods at Resonance with Molecular, Transverse, and Longitudinal Plasmon Excitations”
Plasmonics **2014**, *9*, 581-593; dx.doi.org/10.1007/s11468-014-9669-4.
132. **Abbotto, A.**;* Acciarri, M.; Biagini, P.; Binetti, S.
“Organic dye for a dye sensitized solar cell”
PCT Int. Appl. **2014**, WO 2014/053626 A1 20140410 (ENI SpA; ceduto da University of Milano-Bicocca)
133. Colombo, A.; Dragonetti, C.;* Valore, A.; Coluccini, C.; Manfredi, N.; **Abbotto, A.***
“Thiocyanate-free ruthenium(II) 2,2'-Bipyridyl complexes for dye-sensitized solar cells”
Polyhedron, **2014**, *82*, 50-56; dx.doi.org/10.1016/j.poly.2014.04.048.

134. Manfredi, N.;* Cecconi, B.; **Abbotto, A.***
 “Multi-branched multi-anchoring metal-free dyes for dye-sensitized solar cells”
Eur. J. Org. Chem. **2014**, 7069-7086; dx.doi.org/10.1002/ejoc.201402422.
135. Baldoli, C.;* Bertuolo, S.; Licandro, E.; Viglianti, L.; Mussini, P.; Marotta, G.; Salvatori, P.; De Angelis, F.; Manca, P.; Manfredi, N.; **Abbotto, A.***
 “Benzodithiophene Based Organic Dyes for DSSC: Effect of Alkyl Chain Substitution on Dye Efficiency”
Dyes and Pigments, **2015**, *121*, 351-362; dx.doi.org/10.1016/j.dyepig.2015.04.028.
136. Rocchetti, M. T.; **Abbotto, A.**; Perna, F. M.; Salamone, A.; Florio, S.; Capriati, V.
 “Regio- and stereochemical aspects in the functionalisation of a lithiated 2-(3-chloro-2-methyl-1-propenyl)-2-oxazoline: electrophile and temperature effects”
Tetrahedron **2015**, *71*, 7451-7458; dx.doi.org/10.1016/j.tet.2015.06.034.
137. Cecconi, B.; Manfredi, N.; Ruffo, R.; Montini, T.; Romero-Ocaña, I.; Fornasiero, P.;* **Abbotto, A.***
 “Tuning thiophene-based phenothiazines for stable photocatalytic H₂ production”
ChemSusChem **2015**, *8*, 4216-4228; dx.doi.org/10.1002/cssc.201501040.
138. Biagini, P. ; Abbotto, A.;* Manfredi, N
 “Organic dyes and dye-sensitized solar cells using them”
PCT Int. Appl. **2015**, WO 2014/125432 (ENI SpA; ceduto da University of Milano-Bicocca).
139. Karamshuk, S.; Caramori, S.;* Manfredi, N.; Salamone, M.; Ruffo, R.; Carli, S.; Bignozzi, C. A.; **Abbotto, A.***
 “Molecular level factors affecting the efficiency of organic chromophores for p-type dye sensitized solar cells”
Energies **2016**, *9*, 33-50; dx.doi.org:10.3390/en9010033.
140. Manfredi, N.; Cecconi, B.; Calabrese, V.; Minotti, A.; Peri, F.; Ruffo, R.; Monai, M.; Romero-Ocaña, I.; Montini, T.; Fornasiero, P.*; **Abbotto, A.***
 “Dye-sensitized photocatalytic hydrogen production: distinct activity in a glucose derivative of a phenothiazine dye”
Chem. Commun. **2016**, *52*, 6977 – 6980; DOI: 10.1039/c6cc00390g. COVER ARTICLE
141. Cecconi, B.; Manfredi, N.; Montini, T.; Fornasiero, P.; **Abbotto, A.***
 “Dye-Sensitized Solar Hydrogen Production: the Emerging Role of Metal-Free Organic Sensitizers”
Eur. J. Org. Chem. **2016**, 5194–5215; DOI: ejoc.201600653R1. COVER ARTICLE.
142. Boldrini, C. L.; Manfredi, N.; Perna, F. M.; Trifiletti, V.; Capriati, V.;* **Abbotto, A.***
 “Dye-sensitized solar cells using an aqueous choline chloride-based deep eutectic solvent as an effective electrolyte solution”
Energy Technol. **2017**, *5*, 345-353; dx.doi.org: 10.1002/ente.201600420. COVER ARTICLE
143. Gatti, T.; Manfredi, N.; Boldrini, C.; Lamberti, F.; **Abbotto, A.**;* Menna, E.*
 “A D-π-A organic dye - reduced graphene oxide covalent dyad as a new concept photosensitizer for light harvesting applications”
Carbon **2017**, *115*, 746-753; dx.doi.org: 10.1016/j.carbon.2017.01.081.
144. Manfredi, N.;* Monai, M.; Montini, T.; Salamone, M.; Ruffo, R.; Fornasiero, P.;* **Abbotto, A.***
 “Enhanced photocatalytic hydrogen generation using carbazole-based sensitizers”
Sustainable Energy & Fuels, **2017**, *1*, 694-698; dx.doi.org: 10.1039/C7SE00075H.
145. Manfredi, N.; Monai, M.; Montini, T.; Peri, F.; De Angelis, F.;* Fornasiero, P.;* **Abbotto, A.***
 “Dye-sensitized Photocatalytic Hydrogen Generation: Efficiency Enhancement by Organic Photosensitizer – Co-Adsorbent Intermolecular Interaction”
ACS Energy Letters, **2018**, *3*, 85-91; DOI:10.1021/acscenergylett.7b00896.
146. Manfredi, N.;* Trifiletti, V.; Melchiorre, F.; Giannotta, G.; Biagini, P.;* **Abbotto, A.***
 “Performance enhancement of dye-sensitized solar cell by peripheral aromatic and heteroaromatic functionalization in dibranched organic sensitizers”
New J. Chem., **2018**, *42*, 9281-9290, DOI:10.1039/C7NJ05188C.
147. Manfredi, N.; Boldrini, C. L.; **Abbotto, A.***
 “Organic sensitizers for photoanode water splitting in dye-sensitized photoelectrochemical cells”
ChemElectroChem, **2018**, *5*, 2395-2402, DOI: 10.1002/celec.201800592.
148. Boldrini, C. L.; Manfredi, N.; Perna, F. M.; Capriati, V.;* **Abbotto, A.***
 “Designing Eco-Sustainable Dye-Sensitized Solar Cells by the Use of a Menthol-based Hydrophobic Eutectic Solvent as an Effective Electrolyte Medium”
Chem. Eur. J. **2018**, DOI:10.1002/chem.201803668
149. Dova, D.; Caeteruccio, S.; Manfredi, N.; Prager, S.; Dreuw, A.; Arnaboldi, S.; Mussini, P. R.; Licandro, E.; **Abbotto, A.**
 “Helical push-pull systems for solar cells: Electrochemical, computational, photovoltaic and NMR data”

- Data in Brief* **2018**, 21, 2339-2349; DOI:10.1016/j.dib.2018.11.074.
150. Dova, D.; Cauteruccio, S.; Manfredi, N.; Prager, S.; Dreuw, A.; Arnaboldi, S.; Mussini, P. R.; Licandro, E.; **Abbotto, A.**
“An unconventional helical push-pull system for solar cells”
Dyes&Pigments **2019**, 161, 382-388; DOI: 10.1016/j.dyepig.2018.09.050.
151. Colombo, A.; Dragonetti, C.;* Roberto, D.; Ugo, R.; Manfredi, N.; Manca, P.; **Abbotto, A.*** Della Giustina, G.; Brusatin, G.*
“A carbon doped anatase TiO₂ as a promising semiconducting layer in Ru-dyes based dye-sensitized solar cells”
Inorganica Chimica Acta **2019**, 489, 263-268; DOI: 10.1016/j.ica.2019.02.024.
152. Manfredi, N.; Trifiletti, V.; Melchiorre; F.; Giannotta; G.; Biagini; P.; **Abbotto, A.***
“Photovoltaic characterization of di-branched organic sensitizers for DSSCs”
Data in Brief **2019**, 25, 104167; DOI: 10.1016/j.dib.2019.104167.
153. Manfredi, N.; Decavoli, C.; Boldrini, C. L.; **Abbotto, A.***
“Dye sensitized photocatalytic and photoelectrochemical hydrogen production through water splitting”
Rendiconti Lincei. Scienze Fisiche e Naturali **2019**, 30, 469-483; DOI: 10.1007/s12210-019-00824-6.
154. Decavoli, C.; Boldrini, C. L.; Manfredi, N.; **Abbotto, A.***
“Molecular Organic Sensitizers for Photoelectrochemical Water Splitting”
Eur. J. Inorg. Chem. **2020**, 978–999; DOI: 10.1002/ejic.202000026.
155. Boldrini, C. L.; Manfredi, N.* Perna, F. M.; Capriati, V.* **Abbotto, A.***
“Eco-friendly sugar-based natural deep eutectic solvents as effective electrolyte solutions for dye-sensitized solar cells”
ChemElectroChem, **2020**, 7, 1707-1712; DOI: 10.1002/celec.202000376.