European Photochemistry Association

NEWSLETTER

No. 104,
February 2025

Newsletter Editor:

Prof. Ludovic

Troian-Gautier

Institute of
Condensed Matter
and
Nanosciences (IMCN/
MOST)
UCLouvain
Louvain-la-Neuve
BELGIUM

ISSN 1011-424

CONTENTS

EPA EXECUTIVE COMMITTEE

At the 29th IUPAC Symposium on Photochemistry (PhotoIUPAC) held in Valencia, the EPA elected a novel executive committee. The following members have been elected:

- Paola Ceroni: President
- Norbert Hoffmann: Past President and responsible for PPS matters
- Alexandre Fürstenberg : Treasurer
- Werner Nau: Awards Management
- Dominik Heger: Webmaster
- Susan J. Quinn: Conference Sponsorship
- Ludovic Troian-Gautier: Newsletter Editor and Social Media Manager

MEMBERSHIP APPLICATION

If you are interested in joining the European Photochemistry Association or would like to renew your membership, please visit our website: www.photochemistry.eu.

The EPA members benefit from

- Free online access to the EPA official journal, Photochemical & Photobiological Sciences, edited by Springer Nature (12 issues per year).
- The EPA Newsletter (1 issue per year).
- Reduced fees at selected conferences.
- Opportunity of applying to several EPA Prizes, such as:
    - EPA PhD in Photochemistry.
    - EPA Young Investigator Award.
    - EPA Award to Teachers.
    - European Ambassador of Photochemistry

Prof. Paola Ceroni
Role: President
Departmento of Chemistry "Giacomo Ciamician"
University of Bologna
Via Selmi 2
40126 Bologna, Italy
paola.ceroni@unibo.it

Paola Ceroni is full professor at the University of Bologna. In 1998 she obtained her PhD degree in Chemical Sciences at the University of Bologna, after a period in the United States (Prof. Allen J. Bard's laboratory). In 2015 she was visiting scientist at the University of Pennsylvania (Prof. Vinogradov's laboratory, Philadelphia, US) for 3 months. Current research is focused on photoactive molecules, supramolecular systems and nanocrystals for photocatalysis, artificial photosynthesis and luminescent materials. Her research on luminescent silicon nanocrystals was funded by an ERC Starting Grant *PhotoSi* and an ERC Proof of Concept *SiNBiosys*. She is fellow of the Royal Society of Chemistry and Associate Editor of Dalton Transactions.

Dr. Norbert Hoffmann
Role: Past President and responsible for PPS matters
Institute of Physics and Chemistry of Materials of Strasbourg (IPCMS)
Université de Strasbourg
67034 Strasbourg, France
norbert.hoffmann@ipcms.unistra.fr

Norbert Hoffmann studied chemistry at the RWTH Aachen University, Germany and received his PhD degree in 1992 under the supervision of Hans-Dieter Scharf. In 1993, he obtained a permanent position (Chargé de Recherche) at the French National Center for Scientific Research CNRS in Reims, France. In 2004, he was appointed Research Director in the CNRS. In December 2023, he moved to the Institute of Physics and Chemistry of Materials of Strasbourg (IPCMS, UMR 7504, CNRS - University of Strasbourg). His main research interests are in the field of organic photochemistry: electron transfer, photoinduced radical reactions, stereoselective reactions, cycloadditions of aromatic compounds, reactions in photochemical continuous flow reactors and application of these reactions to organic synthesis. Further research interests concern the production of fine chemicals from biomass and the synthesis and characterization of dyes (chemistry of polymethine and perylene derivatives).
Since 2018, he is member of the Executive Committee of the European Photochemistry Association (EPA). From 2022 to 2024, he was the president of the EPA. Since 2018, he is Associate Editor of Photochemical & Photobiological Sciences.

Dr. Alexandre Fürstenberg
Role: Treasurer
Department of Physical Chemistry and Department of Inorganic and Analytical Chemistry
University of Geneva
1211 Genève 4, Switzerland
alexandre.fuerstenberg@unige.ch

Alexandre Fürstenberg studied chemistry and biochemistry at the Universities of Lausanne and Geneva. He specialised in photochemistry and ultrafast dynamics of fluorescent probes in bimolecular environments with Eric Vauthey at the University of Geneva (PhD 2007) before moving into single-molecule spectroscopy and imaging as a postdoctoral fellow with W.E. Moerner at Stanford University. After holding positions as Ambizione fellow at the Faculty of Medicine of the University of Geneva with Oliver Hartley, visiting assistant professor at Rockefeller University in the group of Thomas Sakmar and scientific collaborator at the Goethe University Frankfurt with Mike Heilemann, he became senior lecturer and group leader in the section of chemistry and biochemistry in 2020 with his research focusing on the development and application of single-molecule tools for biology with an emphasis on environment-sensitive probes for advanced fluorescence microscopy. He has been the treasurer of EPA since 2012.

Prof. Dominik Heger
Role: Webmaster
Department of Chemistry, Faculty of Science
Masaryk University
Kamenice 5, Czech Republic
hegerd@chemi.muni.cz

Dominik Heger pursues a curiosity-driven research in photophysics and photochemistry, applying UV-VIS absorption and luminescence spectroscopies in the steady and time-resolved states (starting from femtoseconds) in solutions and on surfaces. He addresses the open questions that relate to frozen aqueous solutions and performs research utilizable in fields ranging from optimizing freezing procedures in the pharmaceutical industry to understanding the details of atmospheric chemistry events such as ozone depletion. To this end, he connects the microscopic material properties, including state/phase behavior (e.g., glasses and crystals), with the chemical microenvironment via molecular probes (reporting on the acidity, polarity, and aggregation). However, this research track often brings us back to elucidating elementary photophysical steps such as excimer formation or proton and electron transfer.

Prof. Dr. Werner Nau
Role: Awards Management
Constructor University Bremen
Department of Life Science and Chemistry, Campus Ring 1, 28759 Bremen, Germany
wnau@constructor.university

Werner M. Nau was born in Germany, obtained his MSc in 1991 at St. Francis Xavier University, Canada, in spectroscopy, and his PhD at the University of Würzburg in 1994 with Waldemar Adam in organic photochemistry. After his postdoc (95-05) at the University of Ottawa, Canada, with Tito Scaiano, he completed his habilitation in photophysics with J. Wirz at the University of Basel, Switzerland, where he became Assistant Professor in 2000. Since 2002, he is Professor of Chemistry at Constructor University in Bremen, Germany. His research combines principles of organic photochemistry with spectroscopy and supramolecular chemistry and is directed towards applications in bioanalytical chemistry, fluorescent dye design, chemosensing, and fluorescence-based enzyme and membrane assays.

He is the recipient of the Grammaticakis–Neumann Prize of the Swiss Section of the EPA (2000), the ADUC-Jahrespreis für Habilitanden (2000), the Werner Prize 2002 of the Swiss Chemical Society, and the EPA-PPS Prize 2010. He was President (2012-2014) of the EPA and Vice Chairman (2010-2013) of the Photochemistry Section of the German Chemical Society. He presently serves as Executive Board Member of the the International Foundation of Photochemistry.

Prof. Susan Quinn
Role: Conference Sponsorship
School of Chemistry, University College Dublin
Belfield, Dublin 4, Ireland
susan.quinn@ucd.ie

Susan obtained graduated with a B.Sc. Hons in Chemistry from University College Dublin (UCD) in 1997. She then completed her PhD studies on the topic of DNA Programmed Assembly of Heterosupermolecules under the supervision of Prof. Donald Fitzmaurice at University College Dublin. In 2002 Susan started her Postdoctoral studies with Profs. John M. Kelly and Thorfinnur Gunnlaugsson in Trinity College Dublin (TCD). After this time, she took a position as postgraduate course coordinator in the School of Chemistry in TCD, (2006-9) responsible for development and implementation of Dublin Chemistry Graduate programme. In September 2009 Susan returned to a more research driven path when she joined the School of Chemistry in UCD and became a tenured member of staff in 2012 and was promoted to Associate Professor in 2017 and to Professor in 2024.
Susan was awarded the 2016 RSC Rita and John Cornforth Medal in recognition of her contribution to structural work on DNA - transition metal complexes, proof of the origins of the "light-switch" effect and its implications for mechanisms of DNA damage DNA damage.
In 2023 Susan was awarded the Institute of Chemistry of Ireland Annual Award for Chemistry (Eva Philbin Public Lecture Series) for a practising chemist, who has made a significant contribution to the advancement of chemistry and has considerably raised the profile of chemistry through both the excellence of their work and their ability to communicate in an effective and lucid manner.

Prof. Ludovic Troian-Gautier
Role: Newsletter Editor and Social Media Manager
UCLouvain
Institute of Condensed Matter and Nanosciences (IMCN)
Molecular Chemistry, Materials and Catalysis Division (MOST)
Place Louis Pasteur 1, bte L4.01.02, 1348 Louvain-la-Neuve, Belgium
Ludovic.Troian@uclouvain.be

Ludovic Troian-Gautier received his B.S. (2008), M.S (2010) and Ph.D. in chemistry (2014) from the Université libre de Bruxelles (ULB – Belgium) under the supervision of Pr. C. Moucheron and guidance of Pr. A. Kirsch-De Mesmaeker. He undertook post-doctoral research at X4C, a new start-up, under the supervision of Pr. I. Jabin and Dr. A. Mattiuzzi where he worked on surface modification using calix[4]arene derivatives. Between 2015 and 2019, he performed research within the Alliance for Molecular PhotoElectrode Design for Solar Fuels directed by Prof. G. J. Meyer at UNC-Chapel Hill. In May 2019, he started a Chargé de Recherches position (F.R.S.-FNRS) at ULB and, in October 2022, he was promoted to Chercheur Qualifié F.R.S.-FNRS at UCLouvain where he pursues his research endeavors on mechanistic photoredox catalysis and energy related challenges.

EDITORIAL

President's Letter

Dear Members of the European Photochemistry Association (EPA),

I am deeply honored to have been elected as President of EPA and I wish to express my gratitude. As we look ahead, I am excited to introduce the members of the EPA Executive Committee who will be pivotal in shaping and driving our initiatives. Their expertise and dedication will ensure that we continue to serve our community effectively and with purpose:

- Norbert Hoffmann (University of Strasbourg, France): Past President and responsible for PPS matters
- Alexandre Fürstenberg (University of Geneva, Switzerland): Treasurer
- Werner Nau (Constructor University, Bremen, Germany): Awards Management
- Dominik Heger (Masaryk University, Brno, Czech Republic): Webmaster
- Ludovic Troian-Gautier (UCLouvain, Belgium): Newsletter Editor and Social Media Manager
- Susan J. Quinn (University College Dublin, Ireland): Conference Sponsorship

Our shared commitment to enhancing the visibility of the EPA is one of our top priorities. To that end, we are actively working on updating the EPA webpage to better reflect our activities and achievements while providing a more engaging platform for our members and the wider photochemistry community. The website is still under construction, but we believe we will solve the issue soon.

I am confident that, with your support and the collaborative efforts of the Executive Committee, we will continue to advance the field of photochemistry and foster connections across borders.

Thank you once again for your trust and support. I look forward to an exciting and productive term ahead.

With warm regards,

Paola Ceroni
Department of Chemistry Ciamician
University of Bologna - Italy

NEWS FROM SOCIAL MEDIA

The EPA has been using X (former twitter) and Facebook to share news related to the EPA's activities, conferences, publications, …

With a novel website coming out soon, we will continue to increase our visibility online. Our Facebook account will no longer be active but our presence on X will be maintained. In addition, our presence online will be boosted through the creation of a LinkedIn account as well as a Bluesky Social (bsky) account. The accounts have been created and they will become increasingly active over the coming months.

Thus, you can find us on your desired platform:

X: @EuropeanPhotoc1
Linkedin: EPA European Photochemistry Association
Bsky: @EPA_Photochemistry.bsky.social

In addition, two dedicated e-mail addresses have been created:

newsletter@photochemistry.eu : This e-mail address is to be used for matters pertaining to the EPA newsletter. Once a year, an e-mail is sent out to all the EPA members to ask for contributions to the EPA Newletter (usually published in January or February). Contributions can be sent throughout the year and will be saved for the yearly issue.

social@photochemistry.eu : This e-mail address is to be used for matters pertaining to the social activities and news pertaining to the EPA and its members. If there are news that you would like to share (Job offer, publications, creation of consortium, outreach activites, …), please send us an e-mail with the accompanying information, pictures, etc and the desired platform of which you would like us to share the news, and we will happily do so.

AWARDS – EPA YOUNG INVESTIGATOR

The EPA Young Investigator Award recognizes outstanding contributions to the advancement of the photochemical and photophysical sciences made by EPA members during the past ten years.

The Prize consists of a prize certificate, an invitation for a perspective article in the journal *Photochemical and Photobiological Sciences*, and an invitation to the award ceremony at a European or international photochemistry conference in 2025 or 2026, with plenary lecture and coverage of the registration fees.

Candidates must be under 40 years and an EPA member, both at the time of nomination.

Nominations for this prize are now open and all nominations should be sent directly to paola.ceroni@unibo.it. The nomination package (electronic version only) should include:

- Statement of research accomplishments
- Curriculum Vitae
- List of publications
- List of oral communications in national and international conferences
- List of research funding
- Two letters of recommendation to be sent directly to the EPA President.

The closing date for the receipt of nominations: 31st June 2025

AWARDS – AMBASSADOR

The European Ambassador of Photochemistry Award recognizes outstanding contributions to the photochemistry community beyond research, including, but not limited to, service to the photochemistry and photophysical community, the diffusion of the relevance of photochemical and photophysical sciences to science students at all levels, and societal or political engagements on behalf of the community.

The Prize consists of a prize certificate, an invitation to contribute a scientific or journalistic piece to the *EPA Newsletter*, and an invitation to the award ceremony at a European or international photochemistry conference in 2025 or 2026, with coverage of the registration fees.

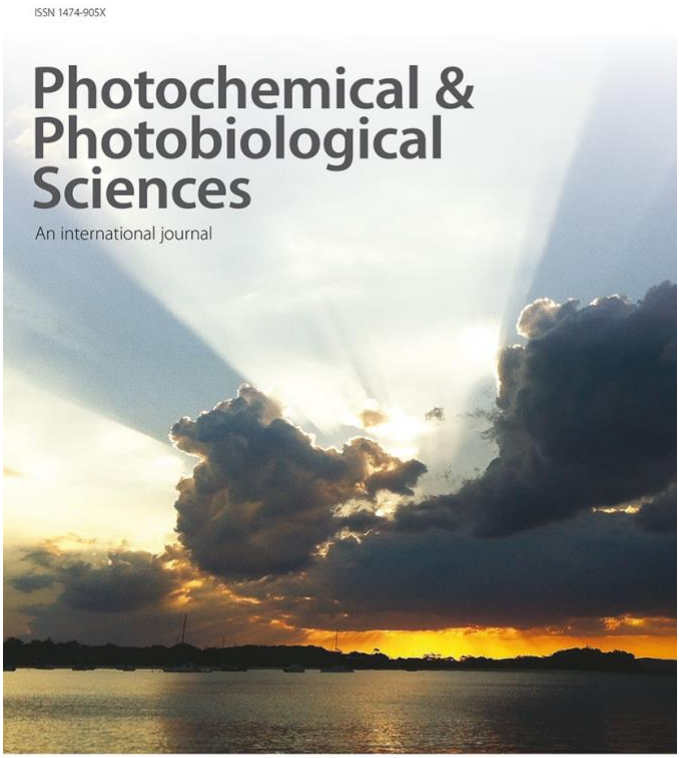
Candidates should be members of the EPA when they are nominated for the award.

Nominations for this prize are now open and all nominations should be sent directly to paola.ceroni@unibo.it. The nomination package (electronic version only) should include:

- Statement describing the merit of the contribution to be recognized as an outstanding service to our community
- Curriculum Vitae
- Supporting letters may be submitted directly to the EPA President

The closing date for the receipt of nominations: 31st June 2025

PHOTOCHEMICAL & PHOTOBIOLOGICAL SCIENCES



5-year Journal Impact factor: 3.2 (2023)
Publishing frequency: 12 issues per year
Editors-in-chief: Dario Bassani and Kristjan Plaetzer

PUBLICATIONS

The long history of the yellow santonina; a solved problem or an open question?

Maurizio D'Auria
University of Basilicata, Viale dell'Ateneo Lucano 10, 85100 Potenza, Italy

Santonin is a sesquiterpene lactone whose relatively complex biosynthesis is based on germacrene A.[1] The structure of santonin, a compound known for a long time for its anthelmintic activity, is shown in Figure 1; it has been isolated from plants of *Artemisia maritima* and *Artemisia cina* belonging to the *Compositae* family.

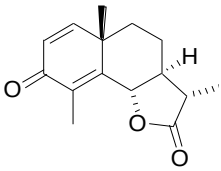


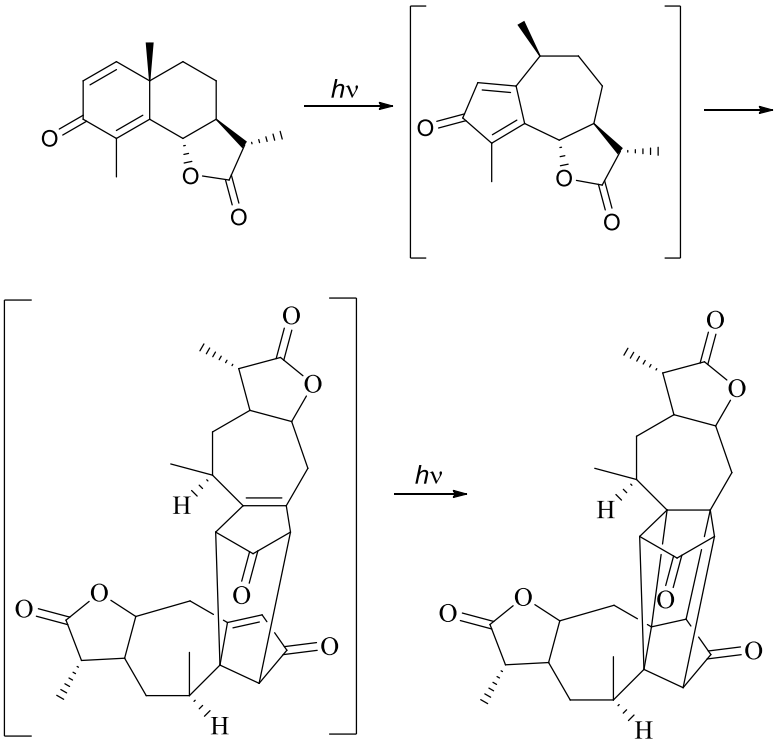
Figure 1. The santonin.

The study of the photochemical behavior of santonin has a particular merit: it is the first photochemical reaction of an organic compound studied in history. In 1830 a pharmacist named Kahler had obtained santonine from *Artemisia cina* and notes: "Im Sonnenlichte nehmen sie eine gelbe Farbe an".[2] In 1843 Trommsdorff reports that the crystals of the santonin, by irradiation with sunlight, turned yellow. In addition, the reaction produces fractures on the crystals with the ejection of material.[3]
Heldt wrote in 1847 a comprehensive work on santonin and also described the photochemical behavior of the crystals, noting a regularity in the course of fractures on irradiated crystals.[4]

What is yellow santonin? This phenomenon was studied by Montemartini, a collaborator of Cannizzaro.[5] Montemartini does not agree with the observations made by Heldt: "For my part, having observed, with a

magnification of 80 diameters, small colorless crystals and others yellowed (...) I could not find any differences; in both cases there were cleavage striae normal to the longitudinal axis. Even examining the same crystal before and after the yellowing I did not notice any changes whatsoever; not even the cleavage striae had increased". He found that: "The melting point is continually lowering; the softening that precedes the casting I believe is mainly due to the fact that at first the santonin yellows (...); the rotational power of the santonin decreases due to yellowing (...); The yellowed santonin solution did not give (...) absorption bands, but limited the extension of the spectrum, it was visible only from red to green, after green nothing was observed. (...) Yellowed santonin is more soluble. (...) It is (...) indisputable that the centesimal composition of the yellow product is identical to that of santonin. (...) Yellowing santonin retains (...) the same molecular size. (...)) Unchanged santonin (...) is very stable in the presence of permanganate (...). On the other hand, by repeating the same experiment with yellowed santonin, the potassium permanganate is immediately destroyed, and the solution remains discolored after a few seconds. And not only is the speed of the reaction different, there are, in addition to this, also different products derived from it, since limiting the oxidation of yellow santonin does not include oxalic acid among these products, which is the predominant product, one can say the main one offered by unaltered santonin. (...) It appears that chromosantonin can only differ from santonin in the position of the bonds that bind together the carbon atoms of the hydronaphthalic group that constitutes its nucleus".

This work does not provide certain indications on the structure of the yellow product but gives useful indications. The problem, addressed by Montemartini in 1902, was taken up again only many years later. In 1968 Matsuura et al. identified the solid phase reaction as a dimer (Scheme 1).[6] The crystal structure of the dimer was identified by X-ray analysis only in 1988.[7] The formation of dimers does not solve the problem, since these compounds cannot be colored. However, dimers could only form if the formation of an intermediate of cyclopentadienonian nature, highly unstable, is assumed. Garcia-Garibay was able to show that the yellow color is due to this unstable intermediate that remains trapped in the crystal.[8] If the product of the solid-phase reaction is dissolved, cyclopentadienone reacts immediately by transforming itself into the compound in Figure 2, which is not colored. The same behavior is also observed in suspensions of santonin nanocrystals.[9]



Scheme 1. Photochemical behavior of santonin in solid phase.

The different trend in the crystalline phase compared to the one in solution can be explained by considering that in solution the sigmatropic shift reported in scheme 3b can occur and that it requires a substantial variation of the structure of the molecule, while, in the crystalline phase, the same precursor can lead to the cleavage of a different bond, with the formation of the cyclopentadienonic precursor (Scheme 2).

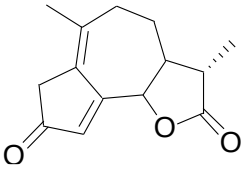
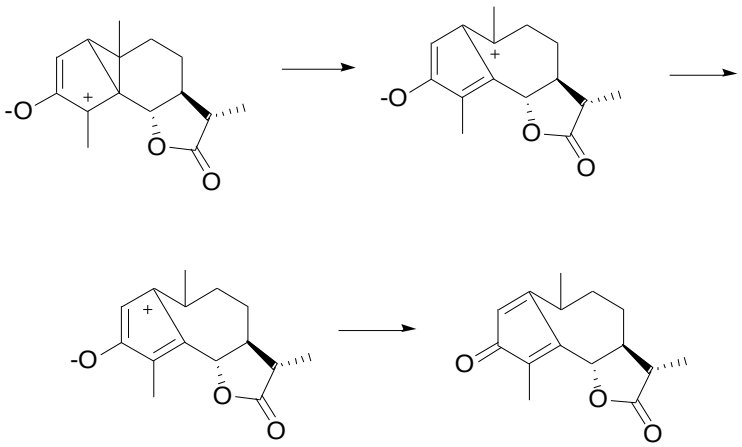


Figure 2. Structure in which the cyclopentadienonic intermediate changes when irradiated santonin crystals are dissolved.



Scheme 2. The formation of the intermediate cyclopentadienone in the reactions performed in the crystal.

The discovery that santonin turned yellow by exposure to light was a chance observation made in 1830. We had to wait until 2015 to explain this phenomenon. However, all the aspects of this phenomenon have been explained. I think that the answer is no. The following notes search to explain my scepticisms.

Our doubts started observing an article of Francesconi published in 1904.[10] In this monumental article he wrote that yellow santonin disappeared when yellow crystals were dissolved in a solvent. The author referred this

information to the work of Montemartini. For this reason, we re-examined the paper of Montemartini.

Montemartini[5] reported that santonin had a melting point at 170 °C, while, after 15 days solar irradiation he observed softening at 135 °C and total melting at 155 °C. Then, the chemical modifications that occurred in the compound are relevant, in agreement with the results reported in Scheme 1. However, he reported that, when yellow santonin is dissolved in any solvent, the following crystallization performed in the dark allowed to obtain santonin. This result is not in agreement with the results reported in Scheme 1. It is not possible to have santonin from the dimers of transposed santonin, if the above reported reaction occurs with reasonable yields, considering the significative alteration of the melting point. This result can be explained only by considering the transposition, dimerization reactions as superficial reactions. However, in this case, we cannot wait for a significative change in the melting point. Furthermore, Montemartini noted that, solubilization and crystallization of the same quantity of pure santonin and yellow santonin allowed the formation of the same quantity of crystalline santonin. This result is not compatible with the results reported in Scheme 1.

References.

1. a) Barton, D. H. R.; Mo, G. P.; Whittle, J. A. *J. Chem. Soc.* **1968**, 1813-1818; b) de Kraker, J. W.; Franssen, M. C.; Dalm, M. C.; de Groot, A.; Bouwmeester, H. J. *Plant. Phys.* **2001**, *125*, 1930-1940.
2. Kahler, *Ark. Pharm.* **1830**, *34*, 318-319.
3. Trommsdorff, H. *Ann. Pharm.* **1843**, *11*, 190-208.
4. Heldt, W. *Liebigs Ann. Chem.* **1847**, *63*, 10-83.
5. Montemartini, C. *Gazz. Chim. Ital.* **1902**, *32*(I), 325-366.
6. Matsuura, T.; Sata, Y.; Ogura, K.; Mori, M. *Tetrahedron Lett.* **1968**, 4627-4630.
7. Reisch, J.; Henkel, G.; Topaloglu, Y.; Simon, G. *Pharmazie* **1988**, 43, 15-17.
8. Natarajan, A.; Tsai, C. K.; Khan, S. I.; McCarren, P.; Houk, K. N.; Garcia-Garibay, M. A. *J. Am. Chem. Soc.* **2007**, *129*, 9846-9848.
9. Commins, P.; Natarajan, A.; Tsai, C. -K.; Khan, S. I.; Nath, N. K.; Naumov, P.; Garcia-Garibay M. A. *Cryst. Growth Des.* **2015**, *15*, 1983-1990.
10. Francesconi L. *Memorie R. Accademia dei Lincei*, **1904**, 79-260.

PEPR LUMA: Advancing French Research in Light-Matter Interactions

Laureen Moreaud,[1,*] Sarah Garçon,[2] Céline Fiorini-Debuisschert[2] and Rémi Métivier[1,*]

[1]Laboratoire de Photophysique et de Photochimie Supramoléculaires et Macromoléculaires (PPSM), CNRS (UMR8531), ENS Paris-Saclay, 91190 Gif-sur-Yvette, France. Emails: laureen.moreaud@ens-paris-saclay.fr, remi.metivier@ens-paris-saclay.fr

[2]Institut Rayonnement-Matière de Saclay (IRAMIS), Commissariat à l'Energie Atomique (CEA), 91190 Gif-sur-Yvette, France.

Under the "France 2030" investment plan[1], the French government has supported several emerging national research initiatives since 2022 through Priority Research and Equipments Programmes[2] (PEPR, French abbreviation). Launched in 2023 for seven years, the PEPR LUMA 'Harnessing Light-Matter Interactions' (Fig.1),[3] fosters high-level interdisciplinary research in this strategic field. With a national scope, it seeks to coordinate French research efforts on high-impact scientific and socio-economic topics, reinforce national research infrastructures to an international standard, and enhance the visibility of this strategic domain in France.

Figure 1. Banner of the PEPR LUMA website

The PEPR LUMA aims to study, understand, develop, and exploit light as a unique tool to explore and control physicochemical and biological systems at the interfaces between chemistry, physics, engineering, life sciences, health, and environmental sciences. In order to create the conditions for synergy and cross-fertilization to drive new science, the program focuses on three truly interdisciplinary scientific challenges that bring together the above-mentioned disciplines and communities:

- **Smart Photoscience.** This challenge focuses on controlling molecular photoreactivity through 'ultrafast' or 'ultrasmall' instrumentation, enabling the study of complex chemical, physical, and biological dynamics for advanced photoactivation processes. It will provide a promising and attractive playground for scientists and engineers in these disciplines, from both the fundamental and the applicative areas.
- **Photons for Green.** This second interdisciplinary scientific challenge focuses on high-performance green devices for energy and industry. By leveraging the conversion of light energy into chemical energy, LUMA aims to drive new technologies for efficient, clean, and sustainable production.
- **Light for Protection.** The third interdisciplinary scientific challenge focuses on the use of light for health, environment, and natural or cultural heritage. Through the development of advanced light sources and multifunctional photoactive materials, the related research will focus on photoaging effects, photo-cleaning materials, diagnostic tools and photo-medicine.

To kick off this ambitious initiative, PEPR LUMA held its inaugural event on June 6-7, 2024, in Bordeaux (France).[4] The event featured opening remarks by Antoine Petit (CEO, CNRS), François Jacq (CEO, CEA), Dean Lewis (President, University of Bordeaux), and Frédéric Ravel (Scientific Director for Energy and Chemistry, French Ministry of Research). On this occasion, exceptional scientific presentations were given by Maguy Jaber, Professor at Sorbonne University, and Pierre Agostini, Nobel Laureate in Physics in 2023 (replay in French available on the PEPR LUMA YouTube channel).[5] This event reinforced LUMA's core principles, sparked discussions on national research infrastructures and interdisciplinarity, and

introduced upcoming calls for proposals. The two-day event featured engaging lectures, round tables, and poster sessions, fostering collaborations in a dynamic scientific environment. No less than 150 people attended the event on-site, with additional participants online (more than 120).

Figure 2. Pictures of the PEPR LUMA inaugural event, which took place in Bordeaux (France) on June 6-7, 2024.

The research objectives of the PEPR LUMA organize along four thematic axes (Fig. 3):

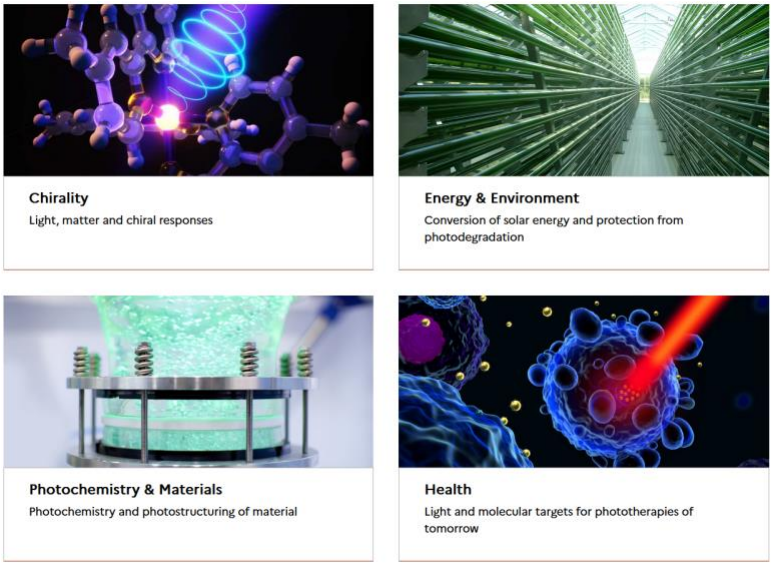


Figure 3. Representation of the four thematic research axes of the PEPR LUMA.

- **Chirality.** It aims to stimulate research on advanced chiroptical spectroscopies to detect subtle changes in biological tissues, chiroptical effects enhanced by chiral nanostructures, spin selectivity induced by chirality, and the generation of exotic chiral light. Through multidisciplinary approaches, researchers will design innovative chiral structures and environmentally friendly materials by controlling the local orientation of light. This axis aims to control the local orientation of light in space and time, which is necessary for the emergence of new ultrafast spectroscopic approaches that will ultimately be used to create unexplored states of matter.
- **Photochemistry & Materials.** Advances in laser sources offer a wide range of wavelengths and temporal dynamics, revolutionizing chemical synthesis and materials production. It is essential to harness and control

the advanced chemical and structural transformations mediated by light, to develop high-level expertise in photochemistry, optics, and materials science. This axis intends to push back the limits of the efficiency of photoreactivity, the spatial resolution of photoproduced structures, and the bottom-up control of optical and mechanical properties of materials, for example, based on nanometer scale photostructuring.

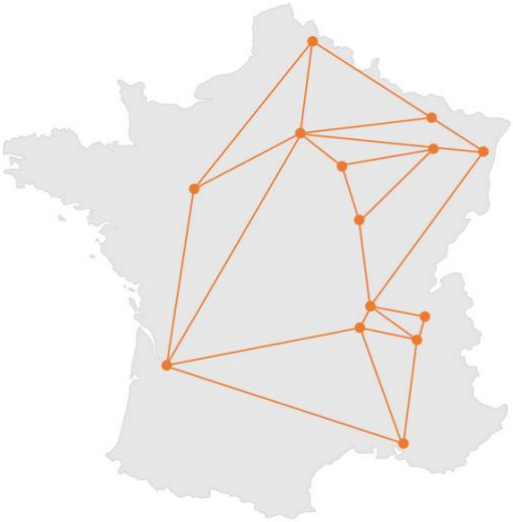
- **Energy & Environment.** Natural photosynthetic systems efficiently convert light energy into chemical energy thanks to a high degree of control over the four key processes involved in photochemistry: it includes initial photon harvesting, light-induced charge separation, efficient capture of relevant abundant substrates, including atmospheric CO_2, and the use of photogenerated charges to drive multi-electronic transformations of these substrates, sometimes in a cascade of catalytic steps. LUMA aims to replicate this organization in artificial photosynthetic hybrid systems, integrating biological, synthetic, and inorganic materials.
- **Health.** Light can detect and heal, but phototherapies presently remain niche treatments. Innovative tools and protocols with optimal spatial and temporal control are needed to improve their efficiency and reduce side effects. The key idea in this area is to effectively combine the design of photo-medicines and the control of ultrafast light beams to achieve real therapeutic breakthroughs. This research axis will require the synthesis of functionalized objects with specific light-induced properties (such as photodynamic therapy effects), the use of suitable light/radiation sources capable of triggering the expected photoinduced processes, and the optimization of effective treatments at the clinical level.

To address these major scientific, technological, and societal challenges, while stimulating the emergence of new scientific knowledge through sharing and exchange within the LUMA community, several large-scale targeted or open actions are being implemented:

- Targeted experiments around instrumental platforms to enable the creation of a national network of top-level platforms (LUMA Infrastructures Hub).
- Targeted thematic research projects, called "Moonshot Projects", with high scientific impact, selected through a call for expressions of interest and covering the four thematic areas of LUMA.
- Calls for projects to complement and further develop thematic research activities, modeling-simulation activities, or joint research activities related to novel instrumentation.
- Scientific animation, communication, and international actions and meetings, to promote discussions, cross-fertilization of methods and practices, specific training of students and scientists, scientific outreach, as well as the initiation of international relations and the promotion of new European networks.

The LUMA Infrastructures Hub consists of platforms distributed throughout France (Fig. 4), accessible to all scientists working on light-matter interactions, to support and promote their research activities. First, LUMA funding has been used to purchase additional equipment to expand the capacity of the platforms. Second, the PEPR LUMA supports collaborative projects of users of the instrumental platforms by covering all costs of user access, following an ongoing assessment of proposals submitted through a dedicated online portal (involving a rigorous evaluation of proposals by external reviewers) to achieve their research goals. International teams can also use the LUMA Infrastructures Hub on a fee-paying basis. However, the associated costs cannot be covered by LUMA. Officially active since February 2024, the Infrastructures Hub includes two networks with 26 platforms (Fig. 4):

- the ULTRAFAST infrastructure, led by Pascal D'Oliveira in Paris-Saclay, brings together 12 laser platforms for ultrafast photoscience and nano-machining;[6]
- the OPERANDO/PROTOTYPING infrastructure, led by Jean-Pierre Simorre in Grenoble, comprises 14 operando and prototyping platforms.[7]



INFRASTRUCTURE
ULTRAFAST

CELIA • Bordeaux
I2BC • Gif-Sur-Yvette
ILM • Lyon
IPCMS • Strasbourg
LIDYL • Saclay
LP3 • Marseille
LabHC • Saint-Etienne
ICB • Dijon
IMMM • Le Mans
L2N • Troyes
LASIRE • Villeneuve d'Ascq
LOB • Palaiseau

INFRASTRUCTURE
OPERANDO/PROTOTYPAGE

IRCELYON • Lyon
SOLEIL • Saint-Aubin
INES • Le-Bourget-du-Lac
LCBM • Grenoble
LAMS • Paris
LASIRE • Villeneuve d'Ascq
SyMMES • Grenoble
ICP • Orsay
IBS • Grenoble
CRAN • Vandoeuvre-lès-Nancy
CRM2 • Vandoeuvre-lès-Nancy
BIP • Marseille
ISM • Talence
LCP-A2MC • Metz

Figure 4. The Infrastructures Hub of the PEPR LUMA is a network of research facilities distributed in France and related to light-matter interactions, with free access to French academic users through a proposal portal.

The four 'Moonshot Projects' involve 7 to 17 research teams from institutions such as the CNRS and CEA, each addressing a core LUMA research axis. They have been selected through a specific process: a brainstorming workshop in September 2023, a call for expressions of interest in November 2023, and an evaluation operated by the ANR (French National Agency) involving a panel of international experts until February 2024. The research activities have started in September 2024 for 4.5 years:

- **TORNADO Project** (led by Valérie Blanchet, Bordeaux & David Hagenmüller, Strasbourg): "Multiscale, multidimensional approach to chiral light-matter interactions for enhanced chiroptical responses".[8]
- **SUNRISE Project** (led by Dario Bassani, Bordeaux & Nathalie Destouches, Saint-Etienne): "Surpassing normal resolution and intrinsic shortcomings of excited states".[9]
- **SYNFLUX-LUMICALS Project** (led by Philipp Gotico, Paris-Saclay & Murielle Chavarot-Kerlidou, Grenoble): "Synchronization of the photon, charge, and molecule flows molecules for optimized conversion of sunlight into fuels and chemicals".[10]
- **PDT-PDAC Project** (led by Céline Frochot, Nancy & Vincent Sol, Limoges): "Photodynamic therapy to meet the challenge of treating pancreatic cancer".[11]

A multi-level governance structure ensures efficient decision-making, management, and oversight. The PEPR LUMA governance includes two Program Directors from the CNRS (represented by Rémi Métivier, CNRS Research Director) and the CEA (represented by Céline Fiorini Debuisschert, CEA Research Director), supported by two Program Managers from the CNRS (Laureen Moreaud) and the CEA (Sarah Garçon). They form the Management Committee, which is complemented by the Steering Committee (composed of representatives from the CNRS, the CEA, and six partner universities), the Executive Committee (composed of the coordinators of the Infrastructures Hub and the Moonshot Projects), and the Scientific Advisory Board (composed of internationally recognized scientists external to the program).

In conclusion, the PEPR LUMA brings together a novel and solid network of research consortia and infrastructures in France related to light-matter interactions, structuring the national scientific landscape. LUMA offers exciting opportunities for collaboration with European research programs and paves the way for major international projects in photochemistry, photophysics and photobiology. All initiatives are welcome, do not hesitate to contact us!

References.

1. Understanding France 2030, French government website:
https://www.info.gouv.fr/grand-dossier/france-2030-en/understanding-france-2030
2. Presentation of National research programmes, CNRS website:
https://www.cnrs.fr/en/our-challenges/national-research-programmes#:~:text=The%20aim%20of%20Priority%20Research,as%20National%20or%20European%20priorities.
3. (a) Presentation of the PEPR LUMA, CNRS website:
https://www.cnrs.fr/en/pepr/pepr-exploratoire-luma-lumiere
(b) PEPR LUMA official website:
https://www.pepr-luma.fr/en/homepage/
4. (a) English press article on the inaugural days, CEA website:
https://cea.fr/drf/irig/english/Pages/News/Highlights/2024/26_PEPR-LUMA.aspx
(b) French press articles on the inaugural days, PEPR LUMA website:
https://www.pepr-luma.fr/2024/06/16/lusine-nouvelle/
(c) Playlist with videos of the inaugural days, PEPR LUMA Youtube page:
https://www.youtube.com/playlist?list=PLwpkW_1LkwhLH6vCZmdSDJd1Pw-X2t0Ep
(d) Photos gallery of the inaugural days, PEPR LUMA website:
https://www.pepr-luma.fr/2024/03/29/inauguration-du-pepr-luma/
5. PEPR LUMA YouTube channel :
https://www.youtube.com/@LUMA-mr6zz
6. Ultrafast Infrastructures:
https://www.pepr-luma.fr/en/projet/ultrafast-en/
7. Operando/Prototyping Infrastructures:
https://www.pepr-luma.fr/en/projet/operando-prototypage-2/
8. TORNADO Project:
https://www.pepr-luma.fr/en/projet/tornado-2/

9. SUNRISE Project:
https://www.pepr-luma.fr/en/projet/sunrise-3/
10. SYNFLUX-LUMICALS Project:
https://www.pepr-luma.fr/en/projet/synflux-lumicals-en/
11. PDT-PDAC Project:
https://www.pepr-luma.fr/en/projet/pdt-pdac-3/

ABSTRACTS OF THESIS ON PHOTOCHEMISTRY

Photon Upconversion Redox Catalysis

Thesis of Jorge Castellanos Soriano successfully defended on 24th February 2024
Departamento de Química, Universitat Politècnica de València (UPV), Camino de Vera s/n, 46022, Valencia, Spain.

Supervisors: Prof. Raúl Pérez Ruiz and Prof. M. Consuelo Jimènez Molero

Photon upconversion based on triplet-triplet annihilation (TTA-UC) is considered one of the most attractive technologies for switching wavelengths from lower to higher energy.[1] The photochemical events associated with this synchronized biphotonic process includes intersystem crossing (ISC), triplet-triplet energy transfer (TTEnT), triplet-triplet annihilation (TTA) and upconverted fluorescence. This two-photon process, which requires the involvement of a bimolecular system, has been widely used in numerous fields such as bioimaging, solar cells, displays, drug delivery, and so on.[2] Even though the use of low-energy visible light ensures high functional-group tolerance in chemical transformations, new strategies for organic synthetic protocols mediated by TTA-UC have been only recently developed.[3]

This thesis aims to develop a sustainable chemical reaction methodology to expand the current scope of C-C coupling reactions using visible light as energy source and organic (metal-free) dyes. The planned activities are at the interfaces of photophysical, organic synthesis, and technological studies. Of particular interest is the combination of several factors that makes this methodology attractive and highly applicable to organic chemistry: i) photolysis under low-energy intensity, which avoids unselective bond cleavages as well as undesired degradation of the corresponding reagents/products; ii) the use of metal-free and non-toxic organic dyes as photocatalysts; iii) involvement of common reactants for this type of

coupling transformations such as aryl halides. The very original part of this thesis is the generation of high-energy blue-Vis or near UV light by TTA-UC technology, initiating the redox photocatalytic process.

I. Arylation of heteroarenes

In this chapter, we have demonstrated that arylation of furans or thiophenes by a C–C coupling reaction can be successfully achieved using a TTA-UC bimolecular system as photocatalyst.[4] The reaction displays a broad scope toward aryl halides and furans or thiophenes with an acceptable range of functional group tolerance (Figure 1).

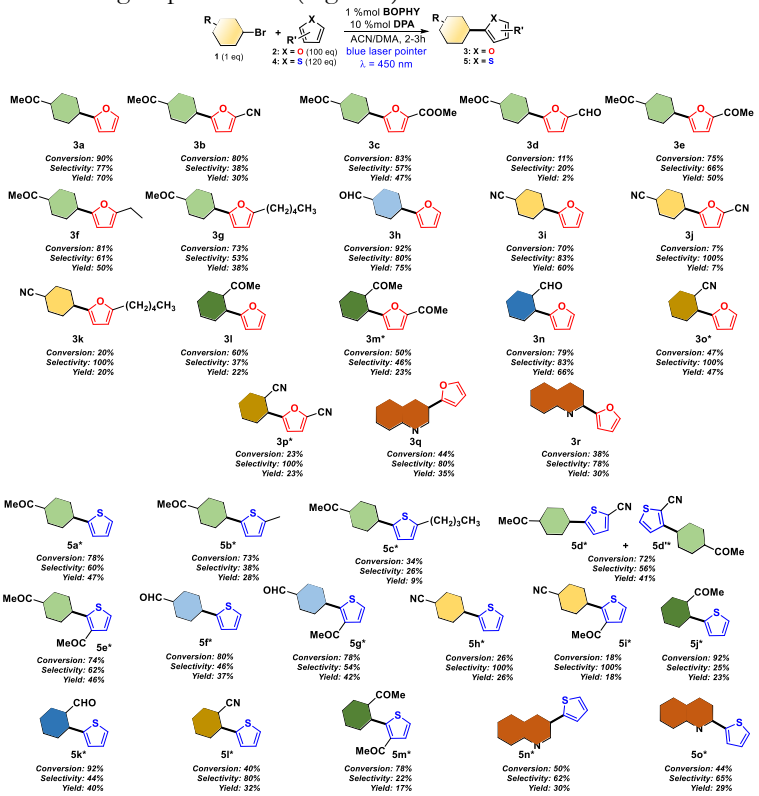


Figure 1. Substrate scope for the arylation of furans and thiophenes using TTA-UC as photocatalyst system. Mass balance was 100% in all cases. Activation of aryl halides by TTA-UC leads to generation of aryl radical intermediates; trapping of the latter by the corresponding heteroarenes, which act as nucleophiles, affords the final coupling products. Advantages of this photoredox catalytic method include the use of very mild conditions (visible light, standard conditions), employment of commercially available reactants and low loading metal-free photocatalysts, absence of any sacrificial agent (additive) in the medium and short irradiation times. Mechanistic evidence has been demonstrated by laser flash photolysis, where the high energetic delayed fluorescence of DPA is directly implied on the activation of aryl halides. In addition, the biphotonic nature of this photoredox arylation of furans and thiophenes has been manifested by power dependence of the energy source. Finally, the scaling-up conditions have been gratifyingly afforded by a continuous-flow device.

II. Formation of Triarylethylenes (TAEs)

Visible-light-driven construction of substituted triarylethylenes (TAEs) has been previously studied.[5] However, prior synthesis of the starting materials was required, or formation of undesired dehalogenated products was observed, making necessary the search of novel and effective methodologies. In this context, aryl bromides, which are bench-stable, inexpensive, and widely available, have not been successfully employed as suitable reagents in this type of reaction. One of the challenges could be associated with the difficult to generate highly reactive aryl radicals from aryl bromides with visible light, since much higher negative reduction potential is required. As stated above, TTA-UC technology was applied to successfully activate aryl bromides; not only dehalogenation processes were observed but also C-C coupling reactions to functionalize heteroarenes was achieved. The latter protocol involved organic (metal-free) dyes (4,4'-diiodo-bis(difluoroboron)1,2-bis((1H-pyrrol-2-yl)methylene)hydrazine (BOPHY) and 9,10-diphenylanthracene, (DPA) as photocatalysts together with the employment of very mild conditions (visible light, room temperature, ambient pressure, no sacrificial agents). Therefore, in this chapter, we have explored the feasibility of the photocatalyzed Mizoroki-Heck reaction for the fabrication of TAEs using aryl bromides as aryl radical precursors by TTA-UC technology.

Gratifyingly, TAEs were successfully obtained from moderate to high yields after 5 hours (Figure 2), confirming that the adaptation of this photoredox catalytic system to the desired Mizoroki-Heck coupling is immediate and symbiotic. To highlight that similar conditions could be applied to aryl chlorides as starting material, forming the desired product.

Thus, the results of experimental transient absorption spectroscopy and quenching experiments supported the same catalytic cycle as example in the previous chapter for BOPHY/DPA photocatalytic system.

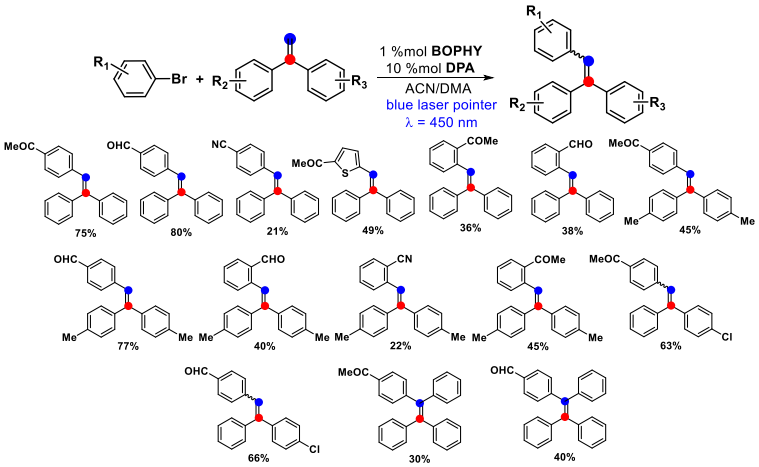


Figure 2. Scope for the coupling of aryl bromides with polysubstituted ethylenes by means of TTA-UC photoredox catalysis. Reaction conditions: aryl bromide (10^{-2} M), polysubstituted alkenes (0.1 M), BOPHY (10^{-4} M) and DPA (10^{-3} M), 3 ml of ACN/DMA 5/1 v/v using a blue laser pointer (445 nm ± 10) under nitrogen atmosphere during 5 h.

III. New TTA-UC photocatalytic systems

The design and development of new triplet–triplet annihilation upconversion (TTA-UC) systems combining triplet sensitizers with acceptor compounds have attracted considerable interest. In this vein, sensitizers made from purely organic dyes rather than transition-metal complexes appear to be more convenient from an environmental point of view.

BODIPYs are a very well-known class of dyes with applications in a widespread range of scientific areas. Owing to the versatility of BODIPYs, we present in this chapter a new asymmetric BODIPY with excellent photophysical properties to be used as an appropriate sensitizer in a bimolecular TTA-UC system (Figure 3).[6]

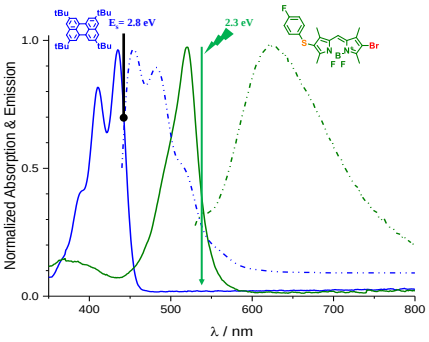


Figure 3. Normalized absorption (solid line) and emission (dashed dotted line) spectra of asymmetric BODIPY dye (green) and TBPe (blue) in 8 mM aerated acetonitrile/dimethylacetamide (4/1 v/v) solution.

Detailed spectroscopic measurements demonstrated the ability of this new design to sensitize TTA-UC by combination with a suitable acceptor such as 2,5,8,11- tetra-tert-butylperylene (TBPe), allowing a successful conversion of green to blue light. The singletexcited TBPe so obtained is capable of activating aryl chlorides reductively which initiated the functionalization of N-methylpyrrole (Meerwein-type arylation) and formation of both substituted triarylethylenes (Mizoroki–Heck reaction) and heteroarene phosphonates (photo-Arbuzov reaction). Product yields reveal that our TTA-UC system behaved as a highly efficient photocatalytic entity (Figure 4).

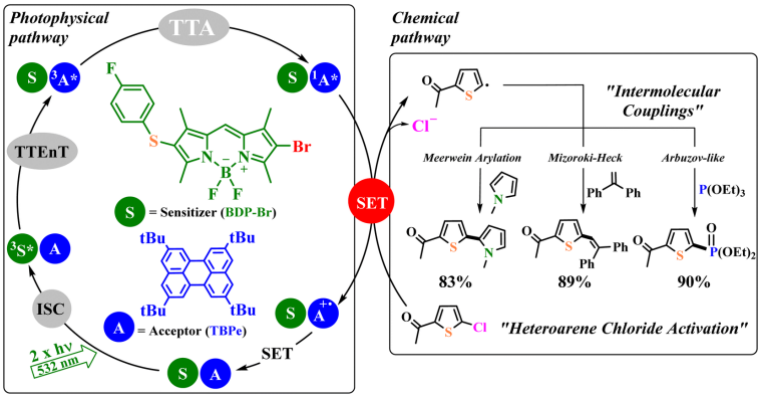


Figure 4. Mechanism of TTA-UC enabled by the BDP-Br(S)/TBPe(A) pair and its adaptation to photoredox catalysis through a SET-initiated reductive activation of an aryl chloride. Involvement of sequential processes ISC, TTEnT, TTA and SET as key steps. ISC = intersystem crossing; TTEnT = triplet–triplet energy transfer; TTA = triplet–triplet annihilation; SET = single-electron transfer. Reproduced with permission from ref 6. Copyright 2023 The Royal Society of Chemistry.

Given the low price and durability of green light sources such as frequency-doubled Nd:YAG lasers (which are also the key components of most commercial laser pointers) and green diode-based lamps compared to blue lasers and diodes, our approach should be within reach for most photochemical laboratories to activate substrates in a selective fashion under metal-free conditions.

References.

1. Bharmoria, P.; Bildirir, H.; Moth-Poulsen, K. *Chem. Soc. Rev.* **49**, 6529–6554 (2020).

2. a) Sun, Q.-C.; Ding, Y. C.; Sagar, D. M.; Nagpal, P. *Prog. Surf. Sci.* **92**, 281–316 (2017). b) Frazer, L.; Gallaher, J. K.; Schmidt, T. W. *ACS Energy Lett.*, 2, 1346–1354 (2017).

3. a) Pérez-Ruiz, R. *Top. Curr. Chem.* **380**, 1–12 (2022). b) Castellanos Soriano, J.; Herrera-Luna, J. C.; Díaz Díaz, D.; Jiménez, M. C.; Pérez-Ruiz, R. *Org. Chem. Front.* **7**, 1709−1716 (2020).

4. Castellanos-Soriano, J; Álvarez-Gutiérrez, D.; Jiménez, M. C.; Pérez-Ruiz, R. *Photochem. Photobiol. Sci.* **21**, 1175–1184, (2022).
5. Zuo, Z.; MacMillan, D. W. C. *J. Am. Chem. Soc.* **136**, 5257–5260 (2014).
6. Garnes-Portolés, F.; Greco, R.; Oliver-Meseguer, J.; Castellanos-Soriano, J.; Jiménez, M. C.; López-Haro, M.; Hernández-Garrido, J. C.; Boronat, M.; Pérez-Ruiz, R.; Leyva-Pérez, A. *Nat. Catal.* **4**, 293–303 (2021).
6. Castellanos-Soriano, J.; Zahringer, T. J. B.; Herrera-Luna, J. C.; Jimenez, M. C.; Kerzig, C.; Perez-Ruiz, R. *Phys. Chem. Chem. Phys.* **25**, 12041–12049 (2023).

CONFERENCE REPORT

From light to Molecules

Paola Ceroni
Department of Chemistry Ciamician, University of Bologna, 40126 Bologna, Italy

On October 14-15, the conference entitled "From Sunlight to Molecules" was held at the Institute for Organic Synthesis and Photoreactivity (ISOF, CNR) in Bologna. This event marked the final conference of the European project "Combined sun-driven oxidation and CO_2 reduction for renewable energy storage" (CONDOR, https://condor-h2020.eu/), coordinated by Prof. Paola Ceroni (University of Bologna). The event focused on artificial

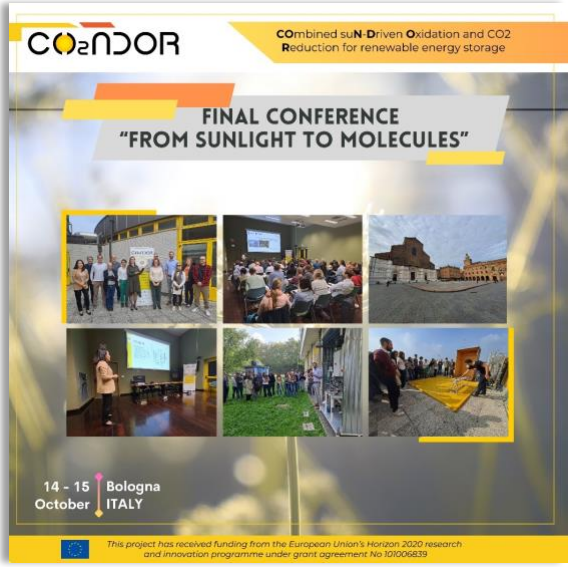


Figure 1. CONDOR final conference at ISOF-CNR Bologna, Italy

photosynthesis and solar fuels, highlighting cutting-edge research in the field and challenges for future development.
The conference was a major success, with attendance exceeding expectations and a packed auditorium with 100 attendees including representatives from CONDOR partner organizations, research institutions and industrial companies.

The opening talk was delivered by Dr. Nicola Armaroli, Research Director at CNR-ISOF. In his presentation, "From Sunlight to Molecules: The Big Picture," Armaroli emphasized the EU's responsibility in reducing greenhouse gases, the need for decarbonization. He also outlined the challenges and opportunities in developing solar technologies for chemicals production.

An overview of the CONDOR project was presented by the project coordinator Prof. Paola Ceroni (University of Bologna) and Project Manager Anastasia Grozdanova (AMIRES).

Over the two days, several notable speakers shared their research outcomes in artificial photosynthesis. Topics included innovations in hybrid photoelectrodes (Prof. Marc Robert, Université Paris Cité, France), molecular catalysts for water oxidation (Prof. Antoni Llobet, Institute of Chemical Research of Catalonia, Spain), and in-situ and in-operando analysis of photoelectrodic materials (Prof. Luca Pasquini, University of Bologna). The presentations also explored factors affecting electron transfer rates (Prof. Gerald Meyer, University of North Carolina at Chapel Hill, USA) and advances in synthesizing nanostructured photoelectrode materials (Prof. Stefano Caramori, University of Ferrara). On the second day, the electrocatalytic conversion of CO_2 into fuels by carbon-based nanostructured materials was discussed (Prof. Francesco Paolucci, University of Bologna), along with ultrafast dynamics in photoanodes (Dr. Barbara Ventura, ISOF-CNR, Bologna). The conference concluded with two presentations from CONDOR's industrial partners, addressing the design and production of photoelectrochemical cells (Laurent Baraton, Senior Research Engineer & Project Manager at ENGIE, France) and the integration of intermittent solar light into a continuous fuel production process (Dr. Hans ten Dam, Director of R&D at HYGEAR, Netherlands).

At the event's conclusion, all participants were invited to a guided tour of the ISOF Institute, where they could explore the CONDOR project prototype. HyGear and ENGIE offered detailed explanations of their contributions, enriching participants' understanding of the prototype's components.

Central European Conference on Photochemistry (CECP 2024)

Prof. Stephan Landgraf
Institut für Physikalische un Theoretische Chemie, 8010 Graz, Austria

From Sunday, February 18 to Thursday, February 22, 2024, 107 photochemists from 16 different countries came together to share their results and experiences at the Congress Centre of Bad Hofgastein/Austria. It was a wonderful atmosphere and all participants enjoyed the meeting. The scientific organization has been done by the international scientific committee: Loredana Latterini, Perugia, I, Dominik Heger, Brno, CZ, Stefanie Tschierlei, Braunschweig, D, Aurélie Perrier, Paris, F, Günter Grampp, Graz, A, Peter Stacko, Zurich, CH, and as a guiding member: Stephan Landgraf, Graz/A for EPA Austria (ZVR: 050416508). The conference started on Sunday with the EPA get-together including a buffet and an opening lecture.

Figure 1. Long talks have been given by Bo Albinsson, Göteborg, Sweden, Dario Bassani, Bordeaux, France, Fred Brouwer, Amsterdam, Netherlands, Alexandre Fürstenberg, Geneva, Switzerland, Matteo Mauro, Strasbourg, France, Sven Rau, Ulm, Germany, Ludovic Troian-Gautier, Louvain-la-Neuve, Belgium.

From Monday to Wednesday there were two sessions per day with short and long talks, and a poster session every evening (in sum 58 poster presentations). In order to facilitate the preparation of the meeting, no plenary lectures have been included. To keep a high scientific level at the meeting the scientific committee selected 7 long talks (out of 18 applications) and 28 short talks (out of 38 applications). One additional talk on the activities of EPA has been presented on Wednesday morning. All poster applications were accepted after checking by the local committee.

The local organizing committee has been formed by: Stephan Landgraf (local organizer from EPA Austria) and Sabine Richert. Additional help from Heidi Schmitt (also for the conference photos), Philipp Thielert, and Maximilian Mayländer is also gratefully acknowledged. A variety of different accommodations is available in Bad Hofgastein from private rooms up to hotels with high comfort. A contingent of 36 rooms (single to triple) had been available for early booking until December 15, 2023. This year most accommodations were not booked out. Contact person for accommodation: Bernhard Wimmer, tourist office. The official website of the meeting: www.cecp.at

The key idea of the CECP meeting is to bring together young and experienced photochemists from all fields of photochemistry. Therefore, everything was done to remove all hindrances to join the meeting. Additionally, the evening should be undisturbed by the dinner. So, four evening buffets were organized for all participants. The costs were included in the conference fee. Young researchers up to 4 years after PhD, all attendees from Eastern European countries, and retired researchers could join for a reduced fee, too. A special price for EPA members has also been offered (-30 € for full members and -15 € for students). Fortunately, there were no limitation or restrictions due to COVID-19. The location of the Conference Centre of Bad Hofgastein allows perfect access to physical activities during the afternoon break. Downhill and cross-country skiing, as well as the thermal bath and spa, offer a variety of possibilities to enjoy the region or simply relax.

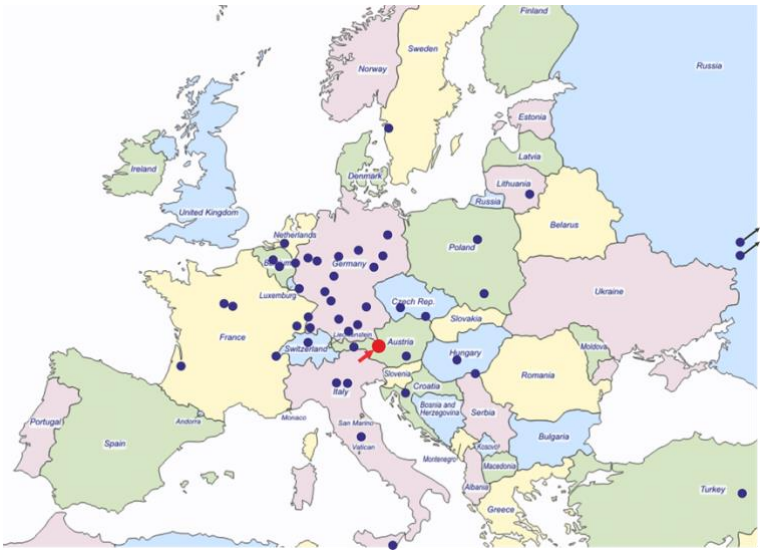


Figure 2. Participants of CECP 2024 located on a Europe map.

This time 113 persons registered for the conference. Since 2006 there have been some fluctuations in the distribution of participants with a mean value of slightly above 100. In 2024 most of the participants came from Germany, but there was also significant attendance from France, Italy, Poland, Austria, Switzerland, and Croatia (with 5 participants and more).

CECP 2024 Awards for Young Scientists

There are two prices for young scientists to encourage them to present their best results at the CECP meeting. All oral and poster presentations have been evaluated by the international scientific committee. Both prices have been awarded at the end of the meeting at the closing ceremony.

- CECP 2024 Award for best oral presentation:

ST13, Johannes Wega, Geneva, Switzerland
"Bimolecular Photoinduced Symmetry-Breaking Charge Separation of Perylene in Solution"

- CECP 2024 Award for best poster presentation:

P8, Philipp Thielert, Freiburg, GErmany
"Photophysics and spin chemistry of core-functionalised naphthalene diimides"

Last but not least we celebrated the "10th Central European Conference on Photochemistry" with our "Bauernbuffet" on Wednesday evening.

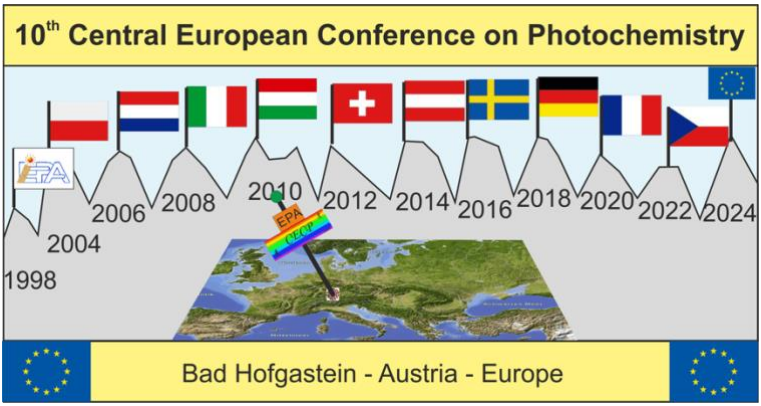


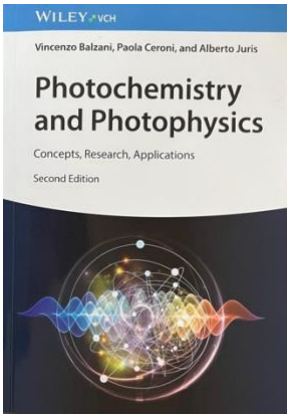
Table 1. Former CECP awards:

Year	Award for best oral presentation	Award for best poster presentation
2006	David Bailey, Bremen/D	Katja Draxler, Konstanz/D
2008	Dominik Wöll, Konstanz/D	David Carteau, Bordeaux/F
2010	Simone Draxler, Munich/D	Sabine Richert, Graz/A
2012	David Bléger, Berlin/D	Franziska Graupner, Munich/D
2014	Fillipo Monti, Bologna/I	Jesper Nilson, Göteborg/S
2016	Anne Fuhrmann, Berlin, D	Maria Pszona, Warsaw, PL
2018	Julien Christmann, Mulhouse, F	Goawa Naren, Göteborg, S
2020	Matiss Reinfelds, Graz, A	Marina Russo, Brno, CZ
2022	Maximilian Mayländer, Freiburg, D	Alexander Grandjean, Saarbrücken, D

CRITICAL BOOK ASSESSEMENT

Loredana Latterini
Department of Chemistry, Biology and Biotechnology University of Perugia, 06123 Italy

Title: Photochemistry and Photophysics. Concepts, Research, Applications
Authors: V. Balzani, P. Ceroni, A. Juris
Publisher: Wiley VCH
Ed: 2nd Edition



"Photochemistry and Photophysics" by V. Balzani, P. Ceroni and M. Juris is an excellent textbook, which has the capacities to guide the reader from definitions and basic concepts to the comprehension of fundamental processes and their application in breakthrough research topics till their exploitation in advanced technological devices, all based on the interactions between light and materials.

The second edition of the book maintains the same structure as the first one, but it is completely revised and updated to account the forefront developments of the photochemistry and photophysical applications.
The first 5 chapters are dedicated to definitions and mainly to the description of the electronic properties of molecular and supramolecular systems. This

section, essential for understanding the interaction of light with materials, is fluid and easy to grasp thanks to well selected examples and the use of diagrams. It gives a solid overview of the chemical and physical properties of the excited states and an accurate description of the absorption and deactivation paths in molecular and supramolecular systems.
The second part opens presenting the fundamental processes of energy and electron transfer involving excited states and gives the theoretical grounds to achieve mechanistic information on the bimolecular interactions. Next, the photophysical and photochemical behaviour of organic molecules and metal complexes is described using several examples, schemes, and a variety of absorption and emission spectra, with the aim to relate the molecular structure and photophysical/photochemical properties
This section concludes with a thorough summary of experimental methods and a comprehensive description of instruments, along with helpful hints and strategies for accurately analysing the experimental data, which are vital for proper quantification of measurable parameters.
The detailed chapter on experimental methods precedes a substantial and prospective part of the book. These last chapters cover the most advanced uses of photoinduced processes in a variety of domains such as homogeneous and heterogeneous photocatalysis, light-powered molecular machines, natural and artificial photosynthesis, photo-induced processes in biological systems (such as vision, photochemical damage of bio-molecules, photodynamic therapy, light-based detection methods of bio-analytes and bioluminescence); readers will learn how fundamental photochemical and photophysical processes can be exploited for novel, and astonishing applications.

The chapter that discusses the technological implementations of photochemical and photophysical processes is greatly appreciated; it discusses, with remarkable clarity without sacrificing accuracy and rigor, the use of photoinduced processes in photochromic materials, luminescent thermometers, explosives detection, photovoltaic or optoelectronic devices.

Overall, the book is composed in a straightforward and fluid style, featuring many graphical representations to facilitate understanding of the core concepts. Every chapter merges scientific precision with clarity and straightforwardness in its presentation, supported by well-chosen examples and illustrations (such as absorption and emission spectra, different types of

diagrams, and energy level schemes). Highlighted boxes provide more in-depth analysis of specific topics, allowing the book to be used at different levels of knowledge.
This book sets the standard for achieving comprehensive understanding and expertise in photo-induced processes and technologies. Concise explanations and a solid support and reference to the fundamental processes are clearly presented in an attractive style to provide readers with solid foundations in topics and skills to exploit light in relevant applications and timely address the global challenges.
This is made possible by the fact that the textbook has been written by world-renowned experts in the field of photochemical and photophysical properties of materials, who have acquired a well-established experience through direct commitment in experimental work and excellent dissemination skills throughout their professional careers.

I recommend the book by Balzani, Ceroni and Juris as a textbook for both basic and advanced photochemistry courses; students will be guided to understand the topic and design new experiments. I have no doubt that the book will also be appreciated by more experienced researchers working in the field of light-matter interactions, both in academia and in industrial research centers, since the text is a valuable source of inspiration.

CONFERENCE ANNOUNCEMENT

10th Edition of the "Ciamician Photochemistry School: From Fundamentals to Applications"

The 10th edition of the "Ciamician Photochemistry School: From Fundamentals to Applications", will take place from 9-12 June 2025 at the Department of Chemistry, Navile Campus, University of Bologna, Italy.

The conference is organized with the support of the Italian Photochemical Group (GIF) and the Interdivisional Photochemical Group (GIdF - SCI).
The School is an introductory course designed for graduate and PhD students, as well as researchers from academia and industries.

The registration fee is 250 euros and the deadline is: 30th April 2025.
The maximum number of participants is 90 and registration will be based on first come first serve basis.

For the program, registration and more information, please visit the webpage of the event:
https://eventi.unibo.it/ciamician-photochemistry-school"

School coordinator: Paola Ceroni, Andrea Fermi
Scientific and organizing committee: Giacomo Bergamini, Massimo Baroncini, Paola Ceroni, Andrea Fermi, Damiano Genovese, Arianna Menichetti, Marco Montalti, Luca Prodi, Enrico Rampazzo, Serena Silvi, Marco Villa, Nelsi Zaccheroni
Web site: Alberto Bianco, Andrea Fermi

GRUPPO ITALIANO DI FOTOCHIMICA

Società Chimica Italiana
Gruppo Interdivisionale di Fotochimica

32nd International Conference on Photochemistry (ICP 2025)

The 32nd International Conference on Photochemistry will take place in Aachen (Germany) from 13-18 July 2025.
Conference Chairs: Prof Dirk M. Guldi and Prof. Dominik Wöll

Register unter www.icp2025.de and get 20 € conference fee reduction as EPA member until April 30!
Discount Code exclusively for EPA members: EPAuxicp25

Message from Conference Chairs:

We are honoured to have been entrusted with the organisation of the 32nd edition of the International Conference on Photochemistry (ICP) in Aachen. ICP is the oldest and most established international event on photochemistry and photophysics. Over the past 60 years, this biannual conference was held all over the world (2015: Jeju Island, Korea; 2017: Strasbourg, France; 2019: Boulder, USA; 2021: Genf, Switzerland (online); 2023: Sapporo, Japan).
This conference gathers typically about 500−600 scientists from all continents working in the various areas of photo- molecular sciences, comprising solar energy conversion, photocatalysis, single molecule imaging, and ultrafast spectroscopy. It also offers a platform for the exchange of ideas between scientists and industry representatives in a vibrant and relaxed environment..
In addition to the scientific program, the participants will have plenty of possibilities for discussions and networking at the poster sessions, during the coffee and lunch breaks, during the Gala Dinner or various excursions.

ICP 2025 in Aachen offers a wide range of parallel sessions of talks and two poster sessions covering the latest discoveries and outstanding results in Photochemistry. The programme is completed with nine plenary talks by distinguished speakers.
A welcome reception will be organised in the Aula of RWTH Aachen University, one of the German excellency universities, on Sunday evening.

For this evening, we could win Daniel George Nocera as presenter of the opening plenary lecture, which we intend to announce to the public.
The scientific program will start on Monday and will comprise 8 plenary lectures of world wide experts in various current topics of photochemistry, 24 keynote lectures, approx. 130 short oral presentations and about 300 posters. The provisional time table is shown below.
The scientific talk schedules will start and end with a plenary lecture. Additionally, we will give four young independent researchers selected by the international committee the change to present their outstanding results in altogether four "rising star plenary lectures". The keynote and distributed talks will be run in four parallel session. The morning and afternoon sessions will be split by coffee breaks, during which the attendants will have the possibility for discussion and for visting the exhibition area. Two poster sessions with snacks and drinks are planned for Monday and Tuesday.
The exhibition area will be available also during the poster sessions.
The traditional conference Gala Dinner will take place in the spectacular Coronation Hall (Krönungssaal) of the town hall of Aachen, in which several Emperors of the Holy Roman Empire of German Nation were encrowned.
Different social activities and excursions are planned for Friday.

Confirmed Plenary Speakers:

- Daniel Nocera, Harvard University
- Johan Hofkens, KU Leuven, Belgium
- Takahiko Kojima, University of Tsukuba, Japan
- María Gabriela Lagorio, Universidad de Buenos Aires, Argentina
- Christy F. Landes, University of Illinois Urbana-Champaign, USA
- Fabrizia Negri, University of Bologna, Italy
- Corey Stephenson, The University of British Columbia, Canada
- Elizabeth von Hauff, TU Dresden, Germany
- Michael R. Wasielewski, Northwestern University, USA