



16th World Congress of the International Photodynamic Association in Coimbra

The 16th World Congress of the International Photodynamic Association (IPA), was hosted in sunny Coimbra (Portugal) from the 8th to the 13th of June.

The exciting schedule assembled by the Scientific Committee and Organising Committee, chaired by Prof. Luis Arnaut, kept the delegates in the lecture theatres, despite the captivating beauty of the surrounding Portuguese city, including the UNESCO Heritage historic centre of the University of Coimbra just a stone throw away from the conference venue.

The plenary lectures were delivered by Prof. T. Hasan, Prof. K. Smith, Prof B. C. Wilson, Dr. D. Kessel, Prof B. W. Pogue, Prof R. M. Szeimies and Prof. J. DeWitt. The plenary sessions also comprised 13 invited lectures spanning a number of fields of PDT, ranging from the design and targeting of photosensitisers to improve PDT efficiency, to the molecular bases of PDT, to the role of immune system in PDT of tumours, to new applications of antimicrobial PDT.

A large number of additional contributions were organised in 15 symposia running in 3

parallel sessions, mirroring the variety of topics covered in the invited lectures. Eight symposia focused on different clinical application of PDT, highlighting the advancement of this therapeutic approach and its potential.

Two poster sessions were held in the porch of the Department of Chemistry, offering a view on exciting advancements in photodynamic science together with an unrivalled view of the river Mondego and the city.

The rendez-vous for the 17th IPA World Congress is in Boston (USA) in 2019.

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Meet Luzitin S.A.

Photosensitisers from Portugal to the world

Can you introduce us to your company?

Luzitin S.A. is a pharmaceutical company focused on the research and development of innovative photosensitizing compounds for PDT and photodynamic diagnosis of cancer and other diseases.

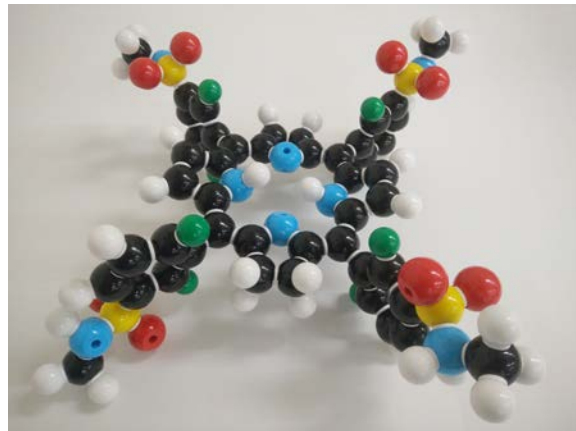
It was founded in 2010 from a partnership between the University of Coimbra and the pharmaceutical company Bluepharma (Portugal), with the aim of developing a family of new chemical entities for PDT of cancer. In 2011 Luzitin's patent on novel compounds to improve the efficiency of anticancer PDT has been awarded the national INVENTA prize, as the most relevant Portuguese patent of the decade 2001-2010. Since then Luzitin had pushed towards the development of unique photosensitizers, and filed two new patents applications in 2016. Luzitin developed Redaporfin™, a new high-potential photosensitizer, which promises to bring PDT of solid tumours to routine daily practice. Redaporfin™ is a patented, 3rd generation photosensitizer of the bacteriochlorin family, specifically designed to overcome the pitfalls of the marketed photosensitizers of systemic administration for cancer.

The main cores of the scientific expertise of Luzitin rely in the chemical synthesis of innovative photosensitizers to overcome the limitations of the currently approved photosensitizers. The management of Luzitin counts on professionals with diverse scientific expertise in the areas of the development of new medicines from the bench to worldwide marketing, and an extensive business management expertise in the pharmaceutical industry.

Which unmet needs does Luzitin address?

The recent remarkable innovations in photonics paved the way to deliver precise light doses virtually anywhere in the human body using minimally invasive methods. Today, lasers, optical fibers, endoscopes, catheters and related medical devices are very reliable, user-friendly and affordable. The combination of unique photosensitisers with the ability to deliver precise light doses to specific tissues with minimal discomfort to the patients offers new therapeutic opportunities.

The results obtained to date with Redaporfin™ in a phase I/IIa clinical trial demonstrate that the therapeutic



procedure is minimally invasive, effective and safe. Redaporfin™ can also be used for other anticancer therapies and it has the potential to be used against precancerous injuries.

Currently, Redaporfin™ is being developed for the treatment of cholangiocarcinoma (a sub-type of biliary tract cancer). In 2015, the European Medicines Agency's issued a positive opinion on the designation of Redaporfin™ as an orphan medicinal product for the orphan indication "treatment of biliary tract cancer" and in 2017 the U.S. Food and Drug Administration granted the orphan drug designation for the treatment of cholangiocarcinoma.

What is the R&D approach of Luzitin? Its expectations in the next years?

Luzitin's aim for 2020 is to be a company: a) with a medicine for cancer treatment licensed for marketing worldwide; b) internationally recognized as a reference in PDT; c) renowned for its scientific excellence, ability to innovate and create value and with a highly qualified, competent and motivated team; d) a company that recognizes talent and rewards excellence.

Interview by Fabienne Dumoulin

[Contact us](#) if you have a story to tell in the Industrial Corner of EoE.

We are keen to showcase the impact of photobiology outside academia.



Arnold Rikli Prize

The Joint International Symposium "Vitamin D in Prevention and Therapy / Biologic Effects of Light" was held on June 21-23, 2017 in Homburg/Saar, Germany. This truly excellent and memorable meeting was organized by Dr Jörg Reichrath (on the left in the photo) and colleagues and brought together leading international scientists in these fields in a relaxing and scientifically productive environment. This was also the occasion chosen to award the prestigious [Arnold Rikli-Prize](#), a recognition of outstanding science related to the use of optical radiation for human health.

Dr Reichrath started the award ceremony describing the origin of the prize: "Arnold Rikli (1823-1906) was a Swiss physician and natural healer living in Bled, today a small village in Slovenia close to the Austrian border. He proposed various therapies, mostly based on exposing the body to sun and air and strongly recommended that his patients and the general population should benefit from "Mother Nature" including the sun.

The Arnold Rikli-Prize was established by Friedrich Wolff in 1989 when it was first awarded to Michael Holick for his outstanding work in photobiology. The brother of Friedrich Wolff, Jörg Wolff (on the right in the photo), has continued this tradition since 2006 and since that time, many outstanding scientists

(including individuals that are in the audience including Steffen Emmert and Rolfdieter Krause) have received the ARP from the Jörg Wolff foundation."

Dr Reichrath then announced that the 2016 prize was to be awarded to Leonhard Zastrow (in the middle in the photo) for his outstanding work in photobiology, most importantly for demonstrating a "Free Radical Threshold Value" as a new "universal body constant" and in defining the evolutionary development of a Free Radical Ground State.

Professor Zastrow did major parts of his work at the Charite in Berlin. His work has influenced, and is still influencing the development of sunscreens. He is the author of numerous publications and anybody working in the field of free radicals, near infrared radiation and sunscreens will find his name in the relevant literature. He presented an engaging talk about this work at the meeting.

The Arnold Rikli-Prize committee under the chairmanship of Peter Bocionek has expressed a wish to expand the international range of candidates for the prize and appropriate promotion. Prof. Rex Tyrrell was asked to join the committee to represent ESP and participated in the evaluations for the 2016 prize. It is planned to present the 2018 prize at the joint ESP/International Congress of Photobiology to be held in Barcelona in 2019 and ESP has undertaken to help in active promotion of the award.

Rex Tyrrell

Francesco Dall'Acqua



Francesco Dall'Acqua was born on the 1st of December 1936 at San Gregorio nelle Alpi (Belluno) in Italy. In 1960 he graduated in Pharmacy at the University of Padova.

He began his research career with the study of the behaviour of furocoumarins (psoralens) under UVA light. The studies he performed under the direction of the Profs Musajo and Rodighiero proved that psoralens induce selective DNA damage both in vitro and in vivo. These studies led to the discovery that linear psoralens are able to cross-link DNA double helix, stressing the importance of this type of photodamage for their antiproliferative activity. These studies prompted a group of dermatologists at Harvard University to use psoralens for the treatment of hyperproliferative skin diseases. Unfortunately, the clinical studies highlighted side effects such as genotoxicity and risk of skin cancer: stimulated by this evidence, Prof. Dall'Acqua focused on the design and the study of new molecules, similar to psoralens, in which the side effects could be removed or reduced. The goal was reached through the preparation of a group of methyl angelicins, of which a few reached clinical trials. For his work, Prof Dall'Acqua was awarded the Louis Lacassagne Prize of the French Ligue Nationale contre le Cancer. During his career, Prof Dall'Acqua published more than 150 articles. He has been the President of the Association Internationale de Photobiologie (a member of the IUPAC) and national representative of ESP and President of the Italian Society of Photobiology.

(Società Italiana di Fotobiologia)

Remembering Lars Svaasand

Prof. Lars Othar Svaasand died 23 February 2017, 79 years old. Electrical engineer by background, Lars Svaasand became full professor at the Norwegian University of Science and Technology in 1984. He approached the field of photobiology in 1981, working on the fluorescence diagnostics of early lung cancer at UCSB in Santa Barbara, California. His collaboration with research institutes in California spanned several decades. The work at the Beckman Laser Institute in Irvine became especially important to him: here Lars Svaasand developed models to predict light and heat distribution in tumour tissue. His research group in Trondheim focused on brain tumours, improving experimental PDT by describing the doses of light and temperature rise at different tumour depths. Prof Svaasand carried out high-impact research on the laser therapy of port-wine stains. A major problem associated with this treatment is tissue overheating and scar formation: his idea of cooling the skin with liquid cryogen spurts was an important scientific breakthrough, later to become a commercial success. Lars Svaasand developed algorithms for reflection spectroscopy and contributed to the diagnosis and treatment for several conditions by optimising the precision of reflected light characterisation. Lars Svaasand was a curiosity driven researcher who contributed to the early development of photodynamic theory. Few other Norwegian scientists left such an extensive research legacy. Lars Svaasand co-authored several hundred papers and has been cited ca. 5000 times to date.



(Norwegian Society of Photobiology and Photomedicine)

Giulio Jori Fellowship

Justyna Maria Łabuz, from the Malopolska Centre of Biotechnology of the Jagiellonian University in Krakow (Poland) is the first recipient of the Giulio Jori Fellowship. The fellowship will allow Justyna to spend three months in the laboratories of Prof John Christie at the University of Glasgow (UK), where she will study the control of chloroplast movements in mature leaves by phototropin 2. We wish Justyna all the best for her scientific future and hope that the fellowship will allow her to cast the foundations of a fruitful collaboration.



It will soon be time....

Preparation for the 17th ESP Congress in Pisa are well on their way. All the abstracts for contributions are in and the schedule is being finalized. This year the ESP awarded 55 fellowships for junior photobiologists to attend the Congress. One of these scholarships was awarded to Diana Yukhazova from Lobachevsky State University of Nizhny Novgorod (Russia) as a prize for the best poster during last year's ESP School in Brixen. One scholarship was awarded to Dr Joseph Nana Annan from Ghana. Joseph attended the ESP School in 2012 to set up a course on Photobiology in Winneba (Ghana). We are looking forward to meet him and all the other scholarship awardees.

Dates for your diary

- The [17th Congress of the European Society for Photobiology](#) will be held in Pisa (Italy) on the 4th-8th of September 2017.
- The [3rd ESP Photobiology School](#) is scheduled for June 2018 in Bressanone (Italy). Dates to be confirmed.
- The [International Conference on Porphyrins and Phthalocyanines](#) will be hosted in Munich (Germany), on the 1st-6th July 2018.
- The [Photodynamic Therapy and Photodiagnosis Update 2018](#) will take place in Kochel am See (Germany), on the 19th-22th of September 2018.