International Day of Light

16 May

International Photodynamic Association (IPA) Newsletter: Shining the Light

PHOTO: UNESCO CELEBRATED THE FIRST INTERNATIONAL DAY OF LIGHT

IN THIS ISSUE

Recent transitions and new labs

edited by [Pilar Acedo Núñez and Huang Chiao (Joe) Huang]

President's note

Dear IPA members and friends,

I hope you are having a great summer. I am delighted to introduce the second issue of the IPA newsletter, and to recognize major recent developments, transitions, and new positions as to keep the IPA community updated about colleagues and events in the field.

Prof. Patrycja Nowak-Sliwinska moved from the Medical Photonics Group of Prof. Hubert van den Bergh at the Swiss Institute of Technology (Lausanne, Switzerland) to start her own research group at the School of Pharmaceutical Sciences at the University of Geneva (Switzerland). The Molecular Pharmacology Group (https://epgl.unige.ch/mol-pharmacology/) that she heads focuses on the development of combination therapies for the treatment of complex diseases, namely cancer. For this she was awarded with the prestigious Starting Grant of the European Research Council (ERC). The ERC grant used for the design of an optimal personalized combination therapy for the treatment of colorectal carcinoma. Moreover, in collaboration with the VU University Medical Center in Amsterdam she obtained a major grant from the Dutch Cancer Society for the implementation of new combination strategies against renal cell cancer. The multidrug combination with photodynamic therapy for cancer treatment is one of the mainstays of Prof. Nowak-Sliwinska's laboratory.

This year, three fellows from my lab are transitioning to independence in science careers: Dr. Huang Chiao (Joe) Huang is the Assistant Professor of Bioengineering at the University of Maryland (UMD) College Park (https://umdhuanglab.weebly.com); Dr. Imran Rizvi will become the Assistant Professor of Biomedical Engineering at the University of North Carolina (UND) Chapel Hill. Dr. Rizvi will also hold a joint appointment in the Department of Biomedical Engineering in the College of Engineering at North Carolina State University as well as the Lineberger Comprehensive Cancer Center at UNC; and Dr. Srivalleesha Mallidi will become the Assistant Professor of Biomedical Engineering at the Tufts University.

Good luck to everyone,

Tayyaba Hasan, Ph.D.

President, IPA Board of Directors | Chair, IPA Congress 2019

Main Achievements of OncoThAI, Lille, France

by [Serge Mordon, Ph.D.]

OncoThAI "Image Assisted Laser Therapies for Oncology", created in 2005 is a joint research unit associating Inserm, University of Lille and Lille University Hospital. Renewed under the label UMR INSERM U1189, the laboratory is located on the campus of the Lille University Hospital (France) and benefits from a clinical and technological environment favorable to achieve translational research.

OncoThAI develops minimally invasive therapies using laser light. These therapies rely on multimodality imaging from preoperative simulation or planning, intraoperative guidance, or postoperative monitoring and therapeutic evaluation.

OncoThAI brings together many researchers from different specialties. Physicists, mathematicians, computer scientists and control engineers work closely with medical teams involved in developing new therapeutic solutions. Through this multidisciplinary configuration, OncoThAI sponsors several clinical trials to evaluate different medical technologies developed in the laboratory.

OncoThAI aims to control the entire process to conduct applied and applicable research. OncoThAI's skills extend from development of proof of concept to clinical applications and therefore involve know-how in original design of medical devices, software development or setting up and sponsoring pre-clinical and clinical studies.

To achieve its objective of quickly transposing research from bench to bedside, OncoThAI has implemented software and hardware technology platforms, spin-off of its research on:

- Mathematical modeling of light-tissue interaction
- Medical imaging
- Simulation, planning and treatment monitoring.

These platforms are essential to the performance of preclinical or clinical trials and are the basis of technology transfer.

Today, OncoThAI is involved in several clinical trials resulting from its research in Gynecology, Neurosurgery, Dermatology, Urology or Thoracic Surgery and is a key player in several national and international research projects

Figure: Treatment of a patient at Lille University Hospital: pleural cavity filled with diffusing solution and illumination of the cavity.

MAIN RESEARCH PROGRAMS CONCERN

- Localized cancers such as prostate, brain (glioblastoma), breast, using interstitial (focal) laser therapies-

- Diffused cancers of the peritoneal cavity (carcimatosis), of the pleural cavity (mesothelioma) using intracavitary laser therapies.

http://www.oncothai.fr/about-the-research-unit/presentation

In 2018, 3 clinical protocols, initiated by OncoThAI were completed

1. MesoPDT: Photodynamic therapy for malignant pleural mesothelioma

With the support of the Regional Board of Nord Pas de Calais and patients associations, a local phase II clinical trial was initiated at the University Hospital of Lille to validate the benefit of PDT for MPM: **"Intrapleural Photodynamic Therapy in a Multimodal Treatment for Patients With Malignant Pleural Mesothelioma (MesoPDT)":** ClinicalTrials.gov Identifier: NCT02662504

On the experimental side, an illumination profile of a light device has been defined and combined with an electromagnetic spatial tracking system, with 3D imaging (chest CT scan) visualization of the light dose delivered in real time. This new dosimetry approach has been validated on an intraoperative hemithorax phantom, conceived and 3D printed within the laboratory.

2. DematoPDT: Photodynamic Therapies in Dermatology

DermatoPDT program aims to develop new illumination devices and protocols to reduce the main limitation of PDT for Actinic Keratosis: Pain !!

The DermatoPDT research program is mainly focused on the development of new devices, integrating new illumination modalities.

Within the framework of project ANR-12-EMMA-0018, the OncoThAI unit contributed to the development of a new illumination device: Flexitheralight. A clinical protocol was initiated to evaluate this device: **"Evaluating the Device FLEXITHERALIGHT Compared to the Conventional Photodynamic Therapy (Flexithera)":** ClinicalTrials.gov Identifier: NCT03076918

3. NeuroPDT: Photodynamic therapies of high-grade glioma

The NeuroPDT research program developed by OncoThAI aims at developing an effective, reproducible and selective pattern for photodynamic therapy using 5-ALA. Nowadays, the on-going preclinical studies are confirming the efficiency of 5-ALA laser therapy while revealing the harmlessness of its delivery. As a clinically approved molecule 5-ALA for fluorescence guided resection, this therapy could be rapidly transferred to the clinical practice.

Today, a single-center clinical trial is underway at the Lille University Hospital to demonstrate the feasibility and the safety of intraoperative PDT. This study, INDYGO (Intraoperative photodynamic therapy of glioblastoma) aims to deliver PDT during surgery for glioblastoma with a device developed in the laboratory.

INDYGO was initiated in May 2017. In May 2018, 9 patients have been already treated. **"INtraoperative photoDYnamic Therapy of GliOblastoma (INDYGO):** ClinicalTrials.gov Identifier: NCT03048240

CÉLINE FROCHOT'S GROUP

Synthesis of multifunctional nanoparticles and novel photosensitizers for PDT

The research of Cèline Frochot's group focuses on the study of the photophysical properties of new or more selective photoactivatable compounds targeting cell surface receptors overexpressed in cancer cells. They are also interested in the characterization of the reactive oxygen species generated after photochemical reactions (mainly singlet oxygen). Her team uses the intrinsic fluorescence of photosensitizers or the extrinsic fluorescence of different probes as a tool for understanding and monitoring in real-time chemical and biological mechanisms and to analyze conformational changes of diverse molecules.

The main goal of her multidisciplinary team is to develop novel multifunctional nanoparticles for photodynamic therapy applications to improve the efficacy and selectivity of light-based therapies.

ONGOING PROJECTS

- PDTfolic: Folic acid coupled photosensitizers for anti-cancer PDT.
- PHOTOBEL: Targeting of LRP-1 by PDT to treat glioblastoma.
- PHOTOBRAIN: Multifunctional nanoparticles for PDT followed by MRI for treating glioblastoma.
- PDTX: X-Ray activated PDT.

FOR MORE INFORMATION

Photo: Cèline Frochot's photo was taken by Laurent Pialy.

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http://lrgp-nancy.cnrs.fr/spip.php?article64

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Meet a Scientist: Cèline Frochot, Ph.D.

edited by [Pilar Acedo Núñez and Huang Chiao (Joe) Huang]

Dear subscribers,

We are glad to present an interview with **Dr. Cèline Frochot**, a senior scientist and project group leader at the University of Lorraine (Nancy, France) expert in developing novel multifunctional nanoparticles for targeted PDT.

Q: Why did you become a scientist?

When I was young, I was more attracted to numbers and to chemistry rather than to literature. I remember when my parents used to go to the choir every Tuesday evening, my brother and I invented cooking recipes that we put into direct application, and we made my two sisters taste them... I did the "classes préparatoires" and entered the National School of chemical engineering which is called in France a "Grande Ecole". In the last year of this program, we had an internship to fulfill. I did my internship in the area of peptides, in a research laboratory. This internship was the beginning; it triggered more my curiosity to science and made me realize that I wanted to go on in the research field. And that's what I did.

Q: How did you get involved in photobiology and photodynamic therapy?

During my thesis, I worked on the synthesis of analogues of a peptide derived from milk casein under the direction of Régis Vanderesse, so I had nothing to do with photobiology. After my Ph.D., I did a year of research and development under the direction of Marie-Laure Viriot, and for the first time I heard about fluorescence. I was passionate about it and even more curious. Fluorescent probes were used to determine the conformation of copolymers in a solution. I spent then 2 years in the Netherlands at the University of Amsterdam (UvA) under the direction of Fred Bouwer. We synthesized rotaxanes sensitive to light. We have also studied the photophysical properties of these rotaxanes or "molecular machines" (JP Sauvage won the Nobel Prize for these wonderful molecules in 2016). It was a very exciting project. I was thinking at the same time of a research topic that I could develop if I would be recruited by CNRS (French National Centre of scientific research). With the help of François Guillemin, who was the pioneer of the development of PDT in Nancy, and his team, I proposed a project about PDT: the vectorization of photosensitizers to improve the selectivity of PDT. In 2000, I succeeded in the CNRS entrance exam and I came back to Nancy.

Q: You have published more than 100 scientific articles – do you have a favorite?

I have several favorite publications. The first one has been published in 2005 and deals with the use of folic acid to target folic acid receptor and improve PDT selectivity. We were the first ones to develop such a compound and nowadays more research efforts have been dedicated to design new folic acid targeted nanoparticles or photosensitizers. The second publication describes the use of polysiloxane nanoparticles coupled to peptides to target the infiltrating part of glioblastoma. This work was our first one with nanoparticles

(AGuIX®) and with the team of Olivier Tillement from Lyon.

Q: What is your philosophy for establishing and running a thriving research lab?

I believe that for a research lab to prosper and succeed, we must give room to everyone that holds inside the passion and the competences to contribute to the scientific research. In fact, each person is a piece of the puzzle that constitutes the team, and this puzzle is completed only when everyone is important, without making himself indispensable. Every Monday morning, we have a meeting, where everyone makes a balance sheet and announces his/her weekly work plan. Doctoral students participate, together with technicians, researchers, other students... This cohesion and interaction is very important to me and it lies at the core of our success and progress. With the biologists in Nancy, in particular Muriel Barberi-Heyob and her team, we have created the "PDTeam", a team that does not exist on paper, however, it is an inter-laboratory group that really exists for us. Interdisciplinarity is key for a subject such as PDT.

Q: Can you tell us about something from your work that is exciting to you right now?

We patented a photosensitizer targeting ovarian cancer metastases. The valuation services guarantees to finance the development of this compound if the *in vivo* results are conclusive. This work is performed together with Henri Azaïs, a gynecological surgeon, Serge Mordon in Lille and Nadira Delhem, a specialist in immunology. The goal is to achieve clinical trials. Even if we know that the regulatory approval will be very difficult, we also think it is a question of energy and courage. Our photosensitizer is selective, exhibits no dark cytotoxicity and presents a good immunological effect. Also the light delivery system used has already been developed in Lille. We go on being optimistic! The other project I feel enthusiastic about deals with the development of nanoparticles that could be excited by X-rays instead of light. This topic presents an exciting approach with many challenging questions: What type of materials or energy? What are the mechanisms of action? Many questions are still with no answer. Moreover, and far from the laboratory bench, I work with a French team specialized in communication strategies and we develop a game map to promote PDT. It is both fun and strategic.

Q: What, in your view, are the key challenges for translation of PDT into clinical practice?

First of all, I find that at the moment, in France, PDT has progressed a lot in clinical applications. Clinical trials are underway in Lille to treat both mesothelioma and glioblastoma, under the direction of Nicolas Reyns and Maximilien Vermandel, respectively. PDT is even in the first-line treatment for glioblastoma. Thanks to these tests, we will be able to communicate better with the general public and with other academic partners. I think that a better communication, explaining and showing that PDT is really effective for the treatment of certain pathologies, without replacing conventional therapies would be a good start. A lot of research work has been done but there is only a little new progress at the clinical level. It is necessary to stimulate and support collaborations between researchers and clinicians for getting more effective results. It is also necessary to take into account that the compound is essential but if the dosimetry is not suitable, the treatment will not work.

Q: What do you think about the women's leadership gap?

I was fortunate, I never asked myself whether I would succeed or not because I was a woman. I think I always loved being in the heart of the action rather than undergoing it. I was a class delegate from the age of 11 until 23 years old. I think it's more the enthusiasm, creativity and the confidence that lead to being a leader. The only constraint when you are a woman is the fact that you have to stop working when you give birth, at least for some weeks. Yet, even this constraint can also bring you certain strength. In return, this teaches you to delegate as the team must continue working also without you. I was also fortunate enough to have a wonderful leader, Marie-Laure Viriot, who inspired me and proved that it was possible to be a woman leading a team in Science.

Q: Work-life balance, is it even possible? Any recommendations?

I am blessed to have 3 children. They are still young (9, 7 and 4 years old) and I need to be there for them. Every day I leave the laboratory, not too late, to pick them up, and I try to avoid working during weekends and vacations so that I can spend more time with them. I often say "no" to certain responsibilities so that working time does not encroach on the happiness of my children. It's a choice. Learning to say "no" is good for family life and friends. Even if I spend a large part of my time at work, with colleagues that are really wonderful, having a private life outside the laboratory is essential for me.

Q: What do you like to do in your spare time?

My free time is partly for my family. I enjoy walking and cycling, but I also spend time in my car to take my children to their activities (rugby, choir, dance, battery). I even give a hand to the rugby club of my eldest son. My second passion after PDT is singing. I have run a teenagers choir for 10 years and I have been conducting an adult choir for 14 years. We perform around 6 shows every year, together with the group of children and teenagers, 120 on stage, it is very moving. The choir is a way to create something positive, with people from all social categories and to indulge in pleasure. Finally, not surprisingly, music is also a matter of wavelengths!

Update: Clinical Application of PDT in Cosmetic Skin Disease in China

by [Leihong Flora XIANG M.D., Ph.D.]

Professor Leihong Flora Xiang and her team began to work on the clinical application and basic research of ALA photodynamic therapy in 2007. They have performed a great deal of clinical and basic researches on ALA-PDT for dermatological and cosmetic appliances. Meanwhile, they have been actively promoting the clinical application and standard therapy of ALA-PDT in China during the past decade.

1. Clinical application and basic research of PDT for the treatment of facial skin disorders and cosmetic dermatology in China

Acne vulgaris

Current management of moderate to severe acne vulgaris mainly consists of systemic antibiotics, estrogen and progestin hormonal therapy, tretinoin and others. With the increasing incidence of bacterial resistance and various drug-related adverse reactions, safe and effective physical therapy has become a new tendency in the treatment of acne vulgaris.

A clinical research on "low-dose topical 5-ALA-PDT for the treatment of moderate to severe acne vulgaris", led by Prof. Xiang, was conducted in a total of 15 medical centers in China. Results have shown that PDT with 5-ALA, 1h incubation and red light source for the treatment of grade II - IV acne vulgaris achieved 82.1% overall effective rate with mild adverse reactions. This trial was published in Photodiagnosis and Photodynamic Therapy, and awarded as "Highly Cited Research" in 2016.

Based on this study and other researches from domestic and foreign dermatologists, "Consensus on 5-ALA PDT in the Treatment of Acne Vulgaris" was issued by the Chinese Dermatologists Association - branch of Laser Committee with the lead of Prof. Xiang in 2011. This consensus has further standardized the guidelines of PDT treatment of acne vulgaris and promoted its application in China. Since acne vulgaris is one of the most common skin diseases in adolescents, Prof. Xiang and her team further evaluated the effectiveness and safety of PDT in Chinese adolescent patients with acne vulgaris. This study has promoted the clinical application of PDT in adolescents, and benefited more acne patients. A total of 21 Chinese adolescent patients aged between 12 to 18 years old with severe acne vulgaris were treated with three sessions of ALA-PDT. The overall effective rate was 95.23% with only mild and reversible adverse reactions.

After verifying the clinical efficacy of PDT, Prof. Xiang's team further explored the mechanism of PDT in treating acne vulgaris. Studies found that ALA-PDT inhibited the proliferation of keratinocytes and induced apoptosis. In addition, ALA-PDT inhibited the expression levels of several inflammatory cytokines in keratinocytes and P.acnes co-culture model, such as IL-1α, TNF-α and IL-8. The latest study also suggested that ALA-PDT suppressed the cell growth of sebocytes and reduced the lipogenesis through mTOR signaling pathway.

At present, ALA-PDT is applying for a new indication for acne vulgaris to China Food and Drug Administration (CFDA). Prof. Xiang, together with the Department of Dermatology, Huashan Hospital, Fudan University, works as the Principal Investigator and is responsible for the declaration and clinical research of the new indication.

Verruca plana

Prof. Xiang's team has tried adopting PDT in treating verruca plana and also achieved great results. Three patients with refractory verruca plana received 5-ALA with 3-4 h incubation time, followed by 633 ± 6 nm irradiation for 126 J/cm^2. Two patients achieved complete remission. The other patient achieved almost clear, only left with small macule on the skin. These results suggested that PDT could be a new therapeutic option for recalcitrant verruca plana.

Skin rejuvenation

Prof. Xiang's team conducted a prospective, controlled, split-face study of the adjunctive use of IPL and ALA-PDT for skin rejuvenation in Chinese population. Twenty-six patients were enrolled and treated with IPL alone on one side and ALA-IPL-PDT on the other side of the face. Better results were achieved on global score, fine lines, and coarse wrinkles of the ALA-IPL-PDT treated side compared to the IPL-only side at the final visit. The study also revealed that the majority of the Chinese patients had Fitzpatrick skin types III and IV, which were more susceptible to post-inflammatory pigmentation. Therefore, lower IPL energy settings and shorter ALA incubation time were recommended to avoid the post-inflammatory pigmentation. In this study, appropriate therapeutic parameters of ALA-IPL-PDT were set for skin rejuvenation in Chinese population, which has promoted the clinical application of ALA-IPL-PDT.

2. Popularization of PDT and its standardized clinical training in China

Online training of PDT

"Photodynamic therapy" WeChat platform (ID: FDZJPDT) is currently the largest online continuing education and learning platform of PDT for doctors in China. Currently, over 20000 Chinese dermatologists are following this platform, of which more than 10000 have been real-name authenticated. Together with Zhangjiang, Fudan University, the platform has been working on the online knowledge transmission and training of PDT since 2012. The contents mainly include the up-to-date domestic and international progress and basic knowledge of PDT, excellent clinical cases presentation, monthly online teaching by top PDT experts in China, and live broadcasting of PDT academic conferences. Based on this platform, dermatologists all over the country could learn PDT anywhere at anytime. They could also share their clinical practice experiences. This platform has strongly promoted the popularization and development of PDT in China.

Hands-on training of PDT

Since 2011, Prof. Xiang's team began to hold national continuing education courses of laser and cosmetic dermatology every year. A PDT session is part of this national course, which focuses on the clinical application and standardized trainings of PDT. Meanwhile, there are standardized hands-on trainings of PDT and the clinic visit as well. Prof. Xiang and her colleagues have kept working on it for eight years.

At the moment, Prof. Xiang and her team are trying to explore more clinical applications of PDT. We are looking forward to their encouraging results in the near future.

SPIE Photonics West BiOS 2018 Symposium, San Francisco, USA

by [Ms. Riddhi Falk-Mahapatra]

The 2018 BiOS Symposium of SPIE Photonics West was held from 27th January to 1st February at San Francisco's Moscone Center. As noted by the co-chairs of the symposium, Dr. Richard Rox Anderson and Dr. James Fujimoto, this year's BiOS featured a record breaking 2,400 oral and poster presentations and over 200 exhibitors at the BiOS Expo.

The symposium included multiple sessions with discussions not only about the vastly extensive current applications of PDT but also about the exciting prospects that this therapy holds for the future. ***BiOS Hot Topics session*** was held on the evening of January 27th and featured ten leading biomedical researchers and their groundbreaking work in the application of light-based technologies in biomedical science. Looking towards expanding the scope of PDT, **Dr. Tayyaba Hasan** remarked its application as a complementary tool to assist other treatment modalities in her talk "Photodynamic Therapy: The Next 10 Years". The evening included several awards: the SPIE 2018 Technology Innovator Award to SPIE Fellow **Dr. Elizabeth Hillman**; the SPIE 2018 Britton Chance Biomedical Optics Award to **Dr. Tayyaba Hasan**; and the inaugural SPIE-Franz Hillenkamp Postdoctoral Fellowship in Problem-Driven Biophotonics and Biomedical Optics to **Dr. Haley Marks** and **Dr. Jan Philip Kolb**. Evening of January 28th saw the ***BiOS plenary session*** where **Dr. Stefan Hell**, 2014 Nobel Laureate in Chemistry, talked about far-field fluorescence nanoscopy that can achieve the "super-resolution" of 1 nm. Neuroscience pioneer **Dr. Karl Deisseroth** spoke of his work in understanding how neural circuits determine human behavior. Without a doubt, both presentations captivated the audience, as was evident by the enthusiastic discussions that followed.

A series of illuminating *(pun intended!)* presentations throughout the weekend kept up the "future-forward" vibe of the symposium. **Dr. Sandra Gollnick** announced a PDT registry for clinical data under development at Roswell Park Comprehensive Cancer Center. **Dr. Tayyaba Hasan** made a compelling case for expanding the application of PDT to a metastatic setting. **Dr. Imran Rizvi's** presentation focused on the molecular basis of improved chemotherapy efficacy when combined with PDT and predictability of such enhancement using complex 3D models. Continuing the discussion on the use of PDT in combination with conventional cancer therapies, **Dr. Keith Cengel** discussed the outcome of PDT as adjuvant therapy in a clinical trial of malignant pleural mesothelioma. **Dr. Edward Maytin** on the other hand talked about 5-FU pretreatment of neoplastic cells as a neoadjuvant therapy to improve PDT efficacy. **Dr. Teresa Busch** had her audience appreciate novel observations made during clinical trials and the very relevant process of developing pre-clinical models to study these observations. Another presentation that added to the optimism surrounding the future of PDT was that of **Dr. Tim Zhu**, which was about finding an empirical formula to scatter light fluence rate in lung shaped cavities. **Dr. Gal Shafirstein** spoke about the advancements in light dosimetry for interstitial PDT of locally advanced head and neck cancers. Highlighting the fact that understanding the mechanisms of action of PDT will pave the way for improving its applications, **Dr. David Kessel** discussed his lab's recent identification of paraptosis as a mechanism of PDT-induced cell death. **Dr. Huang Chiao Huang** discussed immobilization of photoimmunoconjugates on nanoparticles leads to enhanced light-activated cancer cell cytotoxicity.

The symposium rolled onto the following week with insightful discussions about the multiple areas of PDT applications, including enhancing anti-tumor immune response. The complete program and meeting abstracts can be found at https://spie.org/x7777.xml.

A session of particular interest was the SPIE Women in Optics Diversity and Inclusion program held on 29th January. The keynote speaker, **Dr. Alexis Vogt** who leads the nation's oldest optics technician training program at Monroe Community College, recounted some of the challenges she faced as a working mother but left the audience optimistic with her inspiring discussion on the efforts that are currently driving progress of inclusion and diversity in optics careers.

BiOS 2018 truly showcased the expanding impact of light-based technologies in biomedical science. Indeed, all through the six days was abuzz with enthusiastic discussions that will no doubt bring fruition to our collective endeavor in exploring and improving applications of PDT. We hope to see you again in February 2019!

Dr. Sandra Gollnick announcing the development of a PDT registry for clinical data at the SPIE Photonics West (BiOS) 2018. "The knowledge gained from (clinical trials and off label) studies has helped PDT to move into acceptance within some areas of the medical community, but the progress has been slow. Therefore, we are creating a PDT registry for clinical data for retrospective studies. Registry participation is open to all clinicians and researchers" she said.

Resources and Opportunities

by [IPA]

Looking to reach photobiologists and related professionals on a regular basis? Put your message in their e-mail inboxes with IPA triennial e-newsletters. IPA Newsletter reaches more than 400 members with the latest member news. Contact Vandana Grover.

Opportunities

We are seeking for 2019 International Photodynamic Association (IPA) conference sponsorship. If you have questions about 2019 IPA conference sponsorship, please contact Professor Huang Chiao (Joe) Huang @ hchuang@umd.edu.

New board elections will take place later in the year and to stay tuned for information about nomination.

Please Join Us In Congratulating Dr. Hasan On Her Awards by [Michael Pigula]

Dr. Tayyaba Hasan has recently been awarded The Britton Chance Biomedical Optics Award by SPIE in recognition of her trailblazing contributions to the field of Photodynamic Therapy and its clinical translation, leadership, and service to the photonics community; The Outstanding Achievement Award by the Society of American Asian Scientists in Cancer Research (SAASCR) at the American Association for Cancer Research meeting for her seminal contributions in the field of cancer; and The Lifetime Achievement Award by the American Society for Photobiology in recognition of her distinguished career and significant research advancements in the field of photobiology.

International Photodynamic Association (IPA) Newsletter: Shining the Light

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Huang Chiao (Joe) Huang *Pilar Acedo Nuñez*

Congratulations to Dr. Pilar Acedo for becoming a member of the United European Gastroenterology (UEG) Young Talent Group!!!