

Workshop on Light in Medicine – Isfahan University of Medical Sciences-December 30, 2014

On December 20, 2013, the United Nations (UN) General Assembly 68th session proclaimed 2015 as the International Year of Light (IYL) and Light-based Technologies (IYL 2015).

In proclaiming an International Year focusing on the topic of light science and its applications, the UN has recognized the importance of raising global awareness about how light-based technologies promote sustainable development and provide solutions to global challenges in energy, education, agriculture, and health. Light plays a vital role in our daily lives and is an imperative cross-cutting discipline of science in the 21st century. It has revolutionized medicine, opened up international communication via the internet, and continues to be central to linking cultural, economic, and political aspects of the global society.

The IYL will reach an audience of tens of millions of scientists, industry leaders, and members of the public worldwide. Sponsorship is an exclusive opportunity to showcase your sustainability vision, strategies, and practices before this world-class audience and to demonstrate your support for the aims of the IYL. Sponsors include industry partners, universities, research bodies, and many others seeking to create new or expand existing global partnerships.

To celebrate this event, the “light in medicine” workshop held on December 30, 2014, by Department of Advanced Medical Technology, Isfahan University of medical science, Isfahan, Iran [Figure 1].

Participants included university professors, industrialists, students, and researchers in this field. They listened to eight speakers, who represented different topics on the application of light in medicine. The goal of the workshop was the presentation of new topics on light for treatment, light for diagnosis, eye and vision, and optics in medicine.

The 1st day began with welcoming remarks from Dr. Alireza Mehri Dehnavi (scientific chair of the light in medicine workshop), from Isfahan University of Medical Sciences.

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Then, Dr. Hossein Rabbani, from Isfahan University of Medical Sciences, presented a lecture entitled “future of optical coherence.” Tomography, angiography, color image, and optical coherence were discussed in this lecture.

In the following, Dr. Hamidreza Fallah, from the University of Isfahan, spoke about “adaptive optics and optometry.” His speech was the centerpiece of astronomical and nonastronomical applications of adaptive optics, flexible mirrors, and sampling theory.

Dr. Sharife Shahi, from the University of Malaya, discussed about fiber lasers in medicines, interaction of light in the current era, conduction in optical fibers, comparison of the old lasers with fiber laser in dental and eye surgery and fiber laser angioplasty.

The second part began after 20 minutes of break time.

At the beginning of this section, Mr. Mardiha, from SaIRAN (Iran Optics Industries), discussed about different aspects such as thin layer, theoretical basis of thin layer, wave interference (single-layer coating), effective parameter in thin layer theory, reflective coating, laser and medical, cold mirror, hydrophobic and hydrophilic coatings, and safety glasses.

In the following, Mr. Ommani, Namiteb Amin company’s representative, began his speech as “Ophthalmic imaging devices.” In this lecture, new innovations on angiography; ophthalmoscope and fundus camera were discussed.

Then, Dr. Mehri presented “new trends in teaching optics for medical students.” In short, the aim of this presentation was to communicate between system engineering and conventional optics and their application in medicine.

Dr. Asghar Gholami, from Isfahan University of Technology, spoke about applications of optoelectronics in medicine (biophotonics), nanophotonics, and on-chip microscope system.

At the end of the conference, Mr. Shirani, from the Medical Image and Signal Processing Research Center, discussed about manufacturing and production of Microelectromechanical



Figure 1: The “Light in medicine workshop” audience during Lectures

systems and Micro-Opto-Electromechanical Systems equipment and technology.

Additional information about the workshop may be found at <http://seminar.mui.ac.ir/light/>. This website includes the meeting schedule, speaker list, and other details about this workshop. Also, the video files of the above lectures can be accessed at <http://amt.mui.ac.ir/fa/node/214>.

We would like to express our sincere thanks to Dr. Abbas Ommani and Prof. Vasudevan Lakshminarayanan (UNESCO working group on active learning in optics and photonics) who supported this workshop.

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