

International Symposium on “Optobiotechnology”

On Saturday 4 October 2014
At Nagoya Institute of Technology (NIT Auditorium)

Program

09:00 Opening Remarks : Hideki Kandori / Symposium organizer (NIT, Japan)

Session 1 Technology of photoenergy conversion in materials science

Session Leader: Katsuhiko Ono (NIT, Japan)

09:10 Introduction by Katsuhiko Ono

09:20 Keynote Lecture: Tahsin J. Chow (Academia Sinica, Taiwan)

- * Structure effect of organic dyes for sensitized solar cells

09:55 Invited Talk: Atsushi Wakamiya (Kyoto University, Japan)

- * Development of organic photovoltaic materials based on fine-tuning of their electronic structure
Based on Fine-tuning of Their Electronic Structure

10:15 Invited Talk: Mayuka Hatano (NIT, Japan)

- * Development of high-efficient dye-sensitized solar cells using Cu(I) complex dye

–coffee break–

Session 2 Theoretical calculation for the designer's photoprotein

Session Leader: Tatsuya Iwata (NIT, Japan)

10:50 Introduction by Tatsuya Iwata

11:00 Keynote Lecture: Stephan Irlé (Nagoya University, Japan)

- * On the importance of dynamics in molecular systems: From the study of nanostructure formation to the design of photoactive molecules

11:35 Invited Talk: Akihito Ishizaki (IMS, Japan)

- * Quantum dynamic aspects in photosynthetic light harvesting – Old roots, new shoots

11:55 Invited Talk: Igor Schapiro (Max Planck Institute, Germany)

- * Deciphering the photoisomerization mechanism of retinal in rhodopsin: A QM/MM study

12:15-13:15 Lunch



Session 3 The unveiled function of potential biocatalysts

Session Leader: Masayo Iwaki (NIT, Japan)

13:15 Introduction by Masayo Iwaki

13:25 Keynote Lecture: Mordechai Sheves (Weizmann Institute, Israel)

- * Efficient solid-state electron transport through bacteriorhodopsin: comparison to other proteins

14:00 Invited Talk: Wijaya I Made Mahaputra (NIT, Japan)

- * Engineering flavin-based protein as potential light-powered electron transfer bio-tools

14:20 Invited Talk: Yusaku Hontani (VU University Amsterdam, The Netherlands)

- * From ultrafast molecular dynamics to protein engineering

–coffee break–

Session 4 Strategy on light-energy harvesting and conversion in photosynthesis

Session Leader: Takehisa Dewa (NIT, Japan)

14:55 Introduction by Takehisa Dewa

15:05 Keynote Lecture: Dror Noy (Migal-Galilee Research Institute, Israel)

- * Learning photosynthesis from Nature: solar energy harvesting systems from protein-pigment building blocks

15:40 Invited Talk: Z.-Y. Wang-Otomo (S. Otomo) (Ibaraki University, Japan)

- * An antenna-reaction center complex from photosynthetic bacteria: a natural model for artificial photosynthesis

16:00 Invited Talk: Masaharu Kondo (NIT, Japan)

- * Molecular assembly of photosynthetic membrane proteins onto an electrode

–coffee break–

Session 5 Rhodopsin as the promising optogenetic tool

Session Leader: Keiichi Inoue (NIT, Japan)

16:35 Introduction by Keiichi Inoue

16:45 Keynote Lecture: Peter Hegemann (Humboldt University, Germany)

- * Conversion of light-driven proton pumps into light-gated proton channels

17:20 Invited Talk: Mattia Saita (Freie Universitat Berlin, Germany)

- * ChR-2: The influence of the membrane and the application of a membrane potential

17:40 Invited Talk: Hiroshi Watanabe (Tokyo Institute of Technology, Japan)

- * Theoretical approach toward an understanding of molecular functions of channelrhodopsin

18:00 Closing Remarks

18:30 Party

(140924-F program of symposium on optobiotechnology.doc)