

CONFERENCE AGENDA
PHOTOTECH 2015: *Towards a photosynthesis-biobased economy*
Rome, 7-9 October 2015

7 October 2015

8:00 *Registration*

9:30 *Openings*

G. Rea, Chair of the Cost Action PHOTOTECH

M. Saviano, Director of the Institute of Crystallography, CNR

F. Loreto, Director of Department of Agrofood, CNR

MORNING SESSION – Room Marconi

Chairman: Giuseppina Rea; Gyozo Garab

9:40 *Invited lecture: Mattoo AK.* The enigmatic D1 photosystem-II reaction center protein stands tall: Central to programming plant response to environment.

10:25 **Caffarri S.** Integrated approach to characterize the functional architecture of plant photosystems.

10:50 **Croce R.** Molecular switches in the thylakoid membrane.

11:15 *Coffee break*

Chairman: Anja Krieger-Liszkay; Stefano Caffarri

11:45 **Tyystjärvi E.** Temperature dependence of photoinhibition and singlet oxygen production.

12:10 **Krieger-Liszkay A.** The plastid terminal oxidase PTOX as a safety valve under excess light.

12:35 **Allahverdiyeva Y.** Characterizing terminal oxidase and flavodiiron electron sink function in the cyanobacterium *Synechocystis* sp. PCC 6803.

13:00 *Light lunch*

AFTERNOON SESSION – Room Marconi

Chairman: Roberta Croce; Michael R. Jones

14:30 *Invited lecture: Vass I.* In silico modeling of photosynthetic electron transport.

15:15 **Guidoni L.** Structure and reactivity of water splitting catalysts in natural and artificial photosynthesis.

15:40 **Polticelli F.** Bioinformatics approaches to Photosystem II structure, function and engineering.

16:05 **Mezzetti A.** Static and time-resolved infrared difference spectroscopy: from the atomic level study of photo-induced electron transfer in isolated reaction centers to real-time monitoring of photosynthetic reactions in vivo.

16:30 *Coffee break*

Chairman: Alberto Mezzetti; Esa Tyystjärvi

- 17:00 **Gibasiewicz K.** Modeling of $P^+H_A^-$ charge recombination in *Rhodobacter sphaeroides* reaction centers on the basis of both absorption and fluorescence time-resolved studies.
- 17:25 **Boyaci IH.** Detection of herbicide using chloroplast-herbicide interaction by Raman spectroscopy.
- 17:50 **Klem K.** Detection of carotenoids biosynthesis, PPO and ALS inhibiting herbicides using Raman spectroscopy and chlorophyll fluorescence.
- 18:15 **Masojídek J.** Photosynthesis monitoring to estimate growth in microalgae cultures: chlorophyll fluorescence techniques.
- 18:40 Grand Holder's Document's collection

19:30 **Conference Dinner**

8 October 2015

MORNING SESSION – Room Marconi

Chairman: Raoul N. Frese; Artur Braun*

- 9:00 *Invited lecture:* **Artero V.** Photocatalytic H₂ evolution: from homogeneous systems to photoelectrode materials.
- 9:45 **Plumeré N.** Photosynthetic proteins for light energy conversion into electricity and solar fuels.
- 10:10 **Friebe VM.** Plasmonic enhancement of photocurrent generation and stability of bio-hybrid nanostructured pigment-protein silver electrodes.
- 10:35 **Braun A.** The bio-electrochemical interface of semiconductor photoelectrodes functionalized with light harvesting proteins and cyanobacteria.

11:00 *Coffee break*

Chairman: Nicolas Plumeré; Chanoch Carmeli

- 11:30 **Carmeli C.** A biological source for efficient spin-polarized electrons- the Photosystem I.
- 11:55 **Grabchev I.** Synthesis of a new 1,8-naphthalimide based PAMAM-type Dendron and investigating its potentiality for artificial light-harvesting.
- 12:20 **Milano F.** Covalent attachment of photosynthetic reaction centers to hydrogen-bonded organic semiconductors for bio-optoelectronic applications.

*** To be confirmed**

13:00 *Light lunch*

AFTERNOON SESSION – **Room Marconi**

Chairman: Daniela Russo; Fabio Polticelli

- 14:30 *Invited lecture: Pieper J.* Structure and dynamics of photosystems investigated by neutron scattering techniques.
- 15:15 **Russo D.** From whole cells towards photosynthetic reaction centres: “functional” and intrinsic dynamic properties.
- 15:40 **Giardi MT.** Photosynthetic based-biosensor and applications of new strategies from basic research to market.
- 16:05 **Jones MR.** Engineering of the *Rhodobacter sphaeroides* reaction center for self-directed protein-electrode and protein-protein interactions in biohybrid devices.

16:30 *Coffee break*

Chairman: Simona C. Litescu; Francesco Milano

- 17:00 **Hajdu K.** Redox interaction in RC/PSiMc bio-nanocomposite.
- 17:25 **Giotto L.** Laser induced forward transfer (LIFT) functionalization of screen-printed electrodes with bacterial reaction centres for mediatorless herbicide biosensing.
- 17:50 **Trotta M.** Artificial photoconverters using genuine natural components.
- 18:15 **Litescu SC.** The use of electrochemical transduction in developing PSII based biosensors-pro’s and con’s.
- 18:40 **Janssen PJD.** Green organisms to the rescue: the potential of cyanobacteria, algae, and higher plants for the remediation of radioactively contaminated waters.

9 October 2015

MORNING SESSION – **Room Marconi**

Chairman: Ioanna Zergioti; Paul J.D. Janssen

- 9:00 **Cadirci BH.** *Rhodobacter sphaeroides* converts light into electricity in a new designed microbial fuel cell by acetate photo-fermentation.
- 9:20 **Delgado D.** Comparing photocurrents from spinach and cyanobacteria on a conductive surface.
- 9:40 **Stieger KR.** Different approaches for contacting photosystem I with electrodes for efficient photocurrent generation.
- 10:00 **Zhang JZ.** Wiring Photosystem II to hydrogenase for photoelectrochemical water splitting.
- 10:20 **Kujawa M.** Binding of *Rhodobacter sphaeroides* reaction centres to TiO₂ nanoparticles.

10:40 **Magyar M.** Polarized light spectroscopy of reaction centers from *Rhodobacter sphaeroides*.

11:00 *Coffee break*

Chairman: László Nagy; Krzysztof Gibasiewicz

11:30 **Antal TK.** Prolonged hydrogen photoproduction by immobilized S-deprived *Chlamydomonas reinhardtii* cells: effects of light intensity, spectra, and initial medium pH.

11:50 **Stapf S.** Redox hydrogel design for (Photo)bioelectrocatalytic hydrogen evolution.

12:10 **Touloupakis E.** Scale-up of cyanobacterial cultures for photobiological hydrogen production.

12:30 **Akhtar P.** Excitation energy transfer in model photosynthetic membranes.

12:50 **Mishra KB.** Photoinhibition experiments in natural accessions of *Arabidopsis thaliana* suggest potential for improvement in the life time of PSII based bio-devices.

13:10 **Massaouti M.** Laser induced forward transfer: a novel technique for printing biomaterials.

13:30 **Closing remarks**

14:00 *Free Lunch*

AFTERNOON PARALLEL SESSIONS

POSTER EXHIBITION – **Room Nuova Sala Cathering**

15:00 **Fixing of posters**

15:30 **Poster Presentations**

18:30 **Closing of the Session**

MC/WORKING GROUP MEETINGS – **Room Giacomello**

15:00 **MC Meeting**

16:30 **WGs Meeting**

18:00 **Closing of the Sessions**