



INVITATION

AQUAPHOTOMICS: UNDERSTANDING WATER in the BIOLOGICAL WORLD

at The 5th Kobe University
Brussels European Centre
Symposium

Innovation, Environment and Globalization
- Latest EU-Japan Research Collaboration -

14th October 2014
Thon Hotel Bristol Stephanie
Avenue Louise 91-93
Brussels, Belgium



PROGRAM

of The 5th Kobe University Brussels European Centre Symposium

Tuesday, 14th October

9:00 Start of Registration

9:30 – 10:00 Opening

- Prof. Hideki Fukuda, President of Kobe University
- Prof. Hiroshi Takeda, Executive Vice President for Research, Kobe University
- Representative from Japanese Government
- Representative from DG Research and Innovation, European Commission
- Dr. Toshiyasu Ichioka, Project Manager, EU-Japan Centre for Industrial Cooperation

10:00 – 13:30 Session 1 [room-1]

Current Status of Bio-based Chemical Production Technology in Japan and Europe

14:30 – 18:00 Session 2 [room-1]

Towards Further Development of Innovative Membrane Technology

10:00 – 13:30 Session 3 [room-2]

Climate Change and Water Resources Management

14:30 – 18:00 Session 4 [room-2]

Aquaphotomics: Understanding Water in the Biological World

10:00 – 18:00 Session 5 [room-3]

Cultural Industry and Japanese Society

PROGRAM

of Session 4

Aquaphotomics:

Understanding Water in the Biological World

14:30 – 16:00

Introduction and Recent Results

Prof. Roumiana Tsenkova, Kobe University, Kobe, Japan
Prof. Masato Yasui, Keio University, Tokyo, Japan
Dr. Aoife Gowen, University College Dublin, Dublin, Ireland
Dr. Tiziana M.P. Cattaneo, CRA, Milan, Italy

Future Applications

Prof. Albert Krastanov, University of Food Technologies, Plovdiv, Bulgaria
Prof. Christian Huck, University of Innsbruck, Innsbruck, Austria

16:00 – 16:30

Coffee Break & Posters

Participants are welcome to present posters at the Symposium.
Please, provide the title of your poster during registration by e-mail.

16:30 – 18:00

New Perspectives

Prof. Luc Montagnier, Nobel Laureate, World AIDS Foundation, Paris, France

Demonstration of Tools for Data Analysis

Prof. Harald Martens, Norwegian University of Science and Technology, Trondheim, Norway
Dr. Bernhard Pollner, Kobe University, Kobe, Japan / Consultant, Innsbruck, Austria

Closing - Vision for the Future

Prof. Roumiana Tsenkova, Kobe University, Kobe, Japan

PRESENTATIONS

of Aquaphotomics Session

Aquaphotomics: past, present and future

Prof. Roumiana Tsenkova

Water biology: roles of aquaporin (AQP)

Prof. Masato Yasui

Aquaphotomics and hyperspectral imaging as tools for understanding the role of water in foods

Dr. Aoife Gowen

Aquaphotomics in food science and agriculture

Dr. Tiziana M.P. Cattaneo

Aquaphotomics in biotechnology - new tools and opportunities

Prof. Albert Krastanov

Aquaphotomics in natural product analysis

Prof. Christian Huck

Photonic transduction of DNA

Prof. Luc Montagnier

Multivariate data-modelling to separate light scattering from light absorbance: The Optimized Extended Multiplicative Signal Correction OEMSC

Prof. Harald Martens

Demonstrations of new tools for spectral data analysis

Dr. Bernhard Pollner

AQUAPHOTOMICS

Aquaphotomics refers to a new field of study, which aims at the collective characterization and quantification of pools of water molecules that have the same molecular vibration and translate into structure, function, and dynamics of organisms or aqueous systems. Aquaphotomics is a new concept, introduced to describe rapid and comprehensive analysis of water-light interaction at each frequency of the electromagnetic spectrum as a potential source of information for better understanding of the biological world through the water and spectroscopy.

This approach to spectroscopy opens a new area in biological sciences and engineering. It describes a new way for exploring biological systems through a non-destructive monitoring of their interaction with VIS-NIR light.

Multivariate spectral analysis reveals that changes with the water matrix under perturbation reflect, like a mirror, the rest of the molecules surrounded by water. As a result, characteristic water absorbance patterns are used to measure very small concentrations of solutes and for disease diagnosis, bacteria identification, water quality evaluation, for functional studies and for discovering new phenomena.

www.aquaphotomics.com
www.nirslab.org

ORGANIZERS

of Aquaphotomics Session

Organizer: Kobe University

Co-organizer: JEUPISTE

Organizing Committee:

Kobe University, Graduate School of Agricultural Science

Biomeasurement Technology Laboratory

Prof. Roumiana Tsenkova, Chair

Dr. George Bázár

Dr. Eri Chatani

Dr. Zoltán Kovács

Dr. Yosuke Kubota

Dr. Bernhard Pollner

Dr. Aleksandar Slavchev

For registration and inquiry

Kobe University Centre for EU Studies

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It is our great honour to welcome Nobel Laureate Prof. Luc Montagnier at the first symposium on Aquaphotomics that provides great opportunity to discuss up to date applications of spectroscopy in water research.

Please send your registration by e-mail:
info@aquaphotomics.com

There is no registration fee, but advanced registration for the symposium is required.