



FRONTIERS IN WATER BIOPHYSICS

23-26 May, 2010 - Trieste, Italy

"Frontiers in Water Biophysics"
May 23-26, Trieste, Italy

Conference Programme

Sunday, May 23

18.00 **Registration and Welcome reception**

Monday, May 24

8.20 **Registration**

9.00 **Opening**

9.20 **Plenary Lecture:** Paolo Bernardi

Water, water every where: Pathophysiology of mitochondrial volume regulation

Oral presentations

10.00 Marco Malferrari

Electron transfer kinetics in films of photosynthetic reaction centers at different hydration levels

10.20 Enrico Dainese

Soybean 15-lipoxygenase: an enzyme working at the water-membrane interface

10.40 Coffee break/poster session

11.00 Antonio Trovato

Diffusion of signal molecules in microbial colonies: size effects in quorum sensing

11.20 Giuseppe Calamita

Aquaporin channels, when water takes the highway to cross the cellular membrane

11.40 **Plenary Lecture:** Marie-Louise Saboungi

The protective role of glucose against dehydration

12.20 LUNCH

Monday, May 24

14.00 Poster session

15.00 **Plenary Lecture:** Gaëlle Roudaut

Water and physical chemistry concepts applied to the stability of foods and their functionalities

Oral presentations

15.40 M. Pilar Buera

Water effects on the interaction of light with matter and their implications on food appearance

16.00 Harmen H. J. de Jongh

Water in food: the key to perception

16.20 Coffee break/poster session

16.40 **Plenary Lecture:** Douglas H. Goff

Control of Ice Recrystallization in Frozen Foods through the use of Novel Recrystallization Inhibition Agents

17.20 Leonardo Cornacchia

Phase Transitions in Protein-Stabilised Emulsion

17.40 **Panel discussion A**

End of the session

20.00 Social Dinner at the historical restaurant Suban.

Tuesday, May 25

9.00 **Plenary Lecture:** Alberto Schiraldi

Thermodynamic approach to OsmoDehydration

Oral presentations:

9.40 Salvatore Magazù

Water structural and dynamical properties changes induced by homologous disaccharides: a biophysical study

10.00 Marco Paolantoni

Molecular dynamics of solute and solvent in aqueous solutions of sugars by broadband depolarized light scattering experiments

10.20 Adrien Lerbret

Molecular dynamics simulation and raman scattering study of lysozyme in disaccharide aqueous solutions

10.40 Coffee break/poster session

11.00 **Plenary Lecture:** Johan Ubbink

Structural signature of plasticization and antiplasticization in amorphous carbohydrates

Oral presentations

11.40 Jan Swenson

Universal relaxation behaviour of water in biological materials and its implication for bulk water

12.00 Dmitry V. Matyushov

Polarized hydration shells around proteins and the electrostatics of the water/protein interface

12.20 Simone Capaccioli

Supercooled water dynamics in hydrated proteins and biopolymers: the role of secondary β -relaxation

12.40 LUNCH

Tuesday, May 25

14.00 Poster session

15.00 **Plenary Lecture:** John W. Brady

Simulation and Neutron Diffraction Studies of the Interactions of Small Biomolecules with Proteins

Oral presentations

15.40 Maria Antonietta Ricci

Water and trehalose: how much do they interact with each other?

16.00 Yoav D. Livney

Water-structure effect of sugar stereochemistry, and its impact on protein thermal stability

16.20 Coffee break/poster session

16.40 **Plenary Lecture:** Giancarlo Franzese

Water at Interface with Proteins

17.20 Joachim Wuttke

Relaxation in protein surface water near the resolution limit of neutron spectroscopy

17.40 **Panel discussion B**

End of the session

Wednesday, May 26

9.00 **Plenary Lecture:** Jukka Rantanen

Water of crystallization affecting the functionality of pharmaceuticals

Oral presentations:

9.40 Polycarpos Pissis

Water and polymer dynamics in hydrogels based on poly (hydroxyl ethyl acrylate) – co – poly (ethyl acrylate) copolymers

10.00 Florentia Mazzobre

Solubility and stability of β -cyclodextrin inclusion complex with terpineol

10.20 Alessandro Maiocchi

Water imaging: physical concepts and current applications in the pre-clinical and clinical practice

10.40 Coffee break/poster session

11.00 **Plenary Lecture:** Ruggero Bettini

Water as activating agent in swelling controlled drug delivery systems

Oral presentations

11.40 Michael J. Pikal

The varied roles of water in stability of pharmaceutical systems

12.00 Irmgard Bischofberger

Poly-n-isopropyl acrylamide as a probe for water-alcohol interactions

12.20 Davide Rossi

Tensiometric versus skin (tvs) modelling as improved approach for the direct evaluation of skin hydration

12.40 LUNCH

The Conference will merge into the "**XXXII Congress on Calorimetry, Thermal Analysis and Applied Thermodynamics**" with the AICAT-SETARAM Award Lecture of prof.Christoph Schick "*Polymer crystallization studied by fast scanning (106 K/s) and AC-calorimetry*" and the Lucci Award for young researcher.