

# Hiroshima International Forum on Functionality of Lipids

March 24-27, 2010

Reception Hall in Faculty Club,  
Hiroshima University,  
Higashi-Hiroshima, Japan

<http://home.hiroshima-u.ac.jp/hiforum/index.html>



## 1. Main topics

- ◆ Structures of lipids
- ◆ Crystal networks and microstructures
- ◆ Lipids in colloidal systems
- ◆ Lipid nanotechnology in foods and pharmaceuticals.
- ◆ Lipid organogels
- ◆ *Trans*-fat-alternative technology
- ◆ Interrelations of biological and physical functionality

## 2. Main schedule

March 24

Welcome reception (evening)

March 25

Invited talks/oral/poster presentations

March 26

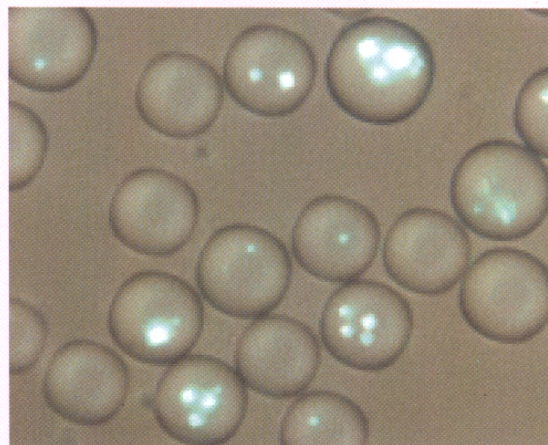
Invited talks/oral/poster presentations

Forum banquet (evening)

March 27

Invited talks (morning)

Farewell lunch



## 3. Locations and date

The Forum will be held in Hiroshima University, Higashi-Hiroshima City, located in the suburbs of Hiroshima City (40 km east) when cherry trees will be blossoming throughout Japan. Accommodations will be available in Higashi-Hiroshima City (to be announced later).



## 4. Scopes of Forum

Lipids are widely used in foods, cosmetics, and pharmaceuticals as major components or important ingredients and additives. Recent progress in science and technology of lipids, and market demands for lipid products with advanced physical, chemical, biological functionalities have encouraged lipid scientists and engineers to work together. This forum seeks to provide an opportunity to widely discuss fundamental and advanced knowledge of physical, chemical and biological functionalities of lipids.

In general, lipids form self-organized structures of crystals, liquid crystals, membranes, emulsion droplets, and fibrous networks. Therefore, controlling the physical properties of lipids in these colloidal systems may have the following major research objectives: (a) clarification of molecular and assembly structures of lipids with different polar and nonpolar components, (b) thermodynamics and kinetics of self organization and transformation processes of lipid molecular assemblies, (c) rheological and textural properties that are mainly dominated by lipid networks, and (d) influences of minor components on lipid structures. To perform these studies, new methods in theory and experiments have been developed; in particular, microprobe techniques such as AFM and microbeam X-ray diffraction have been applied.

The Hiroshima Forum will cover many of these research areas, specifically highlighting the following topics.

- (1) Structures of liquid and polymorphism of lipids.
- (2) Principles of nucleation and crystal growth - experiment and practice.
- (3) Crystal morphology and microstructure- platelets, needles, aggregates and spherulites.
- (4) Primary crystals and networks - growth and ripening of fat crystal networks.
- (5) Molecular basis for crystal-crystal interactions.
- (6) Crystallization modifiers – mono/di-acylglycerols, high-melting fats, and surfactants.
- (7) Lipid crystallization under shear stress.
- (8) Lipids in colloidal systems- liquid crystals, emulsion, microemulsion, and foam.
- (9) Lipid functionality in dairy products.
- (10) Lipid nanotechnology in foods and pharmaceuticals.
- (11) Organogels structured with very low amounts of organogelators.
- (12) Advances in *trans*-fat-alternative technology.
- (13) Interrelation of biofunctionality and physical functionality of lipids.

The Forum will be composed of invited and volunteer presentations. The main language of the Forum is English.



## 5. Invited lecturers

Heike Bunjes (University of Braunschweig, Germany),  
John N. Coupland (Pennsylvania State University, U. S. A.),  
Eckhard Floeter (Unilever Research Vlaardingen Laboratory, The Netherlands)  
Nissim Garti (Hebrew University of Jerusalem, Israel)  
Richard H. Hartel (University of Wisconsin, U. S. A.)  
Makio Iwahashi (Kitasato University, Japan)  
Fumitoshi Kaneko (Osaka University, Japan)  
Dharma R. Kodali (Global Agritech Inc., U.S.A.)  
Zdenek Kozisek (Czech Academy of Science, Czech)  
Kare Larsson (Camurus Lipid Res., Sweden)  
Chong Ciew Let (MPOB, Malaysia)  
Christine Lopez (INRA, France)  
Alejandro Marangoni (University of Guelph, Canada)  
Gianfranco Mazzanti (Dalhousie University, Canada)  
Rila Ristic (The University of Sheffield, UK)  
Phillipe Rousset (Nestle Research Center, Switzerland)  
Derick Rousseau (Ryerson University, Canada),  
Keshra Sangwal (Lublin University of Technology, Poland)  
Kiyotaka Sato (Hiroshima University, Japan)  
Kevin Smith (Unilever Research Colworth Laboratory, UK)  
Paul Smith (Cargill Europe, Belgium)  
Satoru Ueno (Hiroshima University, Japan)  
Shun Wada (Tokyo University of Marine Science and Technology, Japan)

*Further lecturers will be invited (see website).*

## 6. Call for papers and registration

Volunteer paper presentations are most welcome. Due to the limit of time allocated for oral presentations, some papers will be presented as posters.

The scheduled deadlines are as follows.

- (1) Paper presentation: September 31, 2009
- (2) Forum registration: December 31, 2009

*Registration fees and methods of registration will be announced very shortly (see web site).*

The organization committee is planning to publish the papers submitted to the Forum in a special issue of certain scientific journal (under examination).



## 7. Organization committee

### *Local organization committee*

Chairperson: Kiyotaka Sato (Hiroshima University)

Sub-chairperson: Shun Wada (Tokyo University of Marine Science and Technology)

General Secretary: Satoru Ueno (Hiroshima University)

Treasurer: Toshiharu Arishima (Fuji Oil Co., Ltd.)

Committee members:

Hiroshi Arakawa (ADEKA Co.)

Yuzoh Asano (Morinaga Milk Industry Co.,Ltd.)

Midori Goto (AIST)

Haruyasu Kida (Fuji Oil Co., Ltd.)

Masako Koyama (Ajinomoto Co.)

Tetsuo Koyano (Meiji Seika Kaisha, Ltd.)

Satoshi Negishi (The Nisshin OilliO Group Ltd.)

Naoki Nishikawa (LION Corp.)

Takahisa Okamoto (Japan Institute of Oil & Fats, Other Foods Inspection Foundation)

Naoya Otomo (Mitsubishi-Kagaku Foods Co.)

Ryo Sasaki (Miyoshi Oil & Fat Co., Ltd.)

Hiroaki Shimeno (Sakamoto Yakuhin Kogyo Co. Ltd.)

Hidetaka Uehara (The Nisshin OilliO Group Ltd.)

### *International Advisory Board*

Eckhard Floeter (Unilever Research Vlaardingen Laboratory, The Netherlands)

Nissim Garti (Hebrew University of Jerusalem, Israel)

Dharma R, Kodali (Global Agritech Inc., U.S.A.)

Kare Larsson (Camurus Lipid Res., Sweden)

Alejandro Marangoni (University of Guelph, Canada)

Rila Ristic (The University of Sheffield, UK)

Phillipe Rousset (Nestle Research Center, Switzerland)

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