

**The 11<sup>th</sup> International Conference on Chitin and Chitosan**  
**The 8<sup>th</sup> Asia-Pacific Chitin and Chitosan Symposium**  
Taipei, Taiwan, R.O.C. September 6-9, 2009



**Sunday September 6, 2009**

- 15:00-17:30 Registration  
18:00-20:00 Welcome Reception

**Monday September 7, 2009**

- 08:10-09:00 Registration  
08:30-09:15 Opening Ceremony  
09:15-10:00 **Plenary Lecture 1 (10214) Chi-Huey Wong** - Development of carbohydrate-based pharmaceuticals  
Chairperson: **Rong Huei Chen**  
10:00-10:45 **Plenary Lecture 2 (10209) Seiichi Tokura** - Recent Advances in Chitin Chemistry-Hydrated chitin slurry for more functions  
Chairperson: **San-Lang Wang**  
10:45-11:00 Coffee Break

**Session 1: Monomer and Oligomer**

Chairperson: **Saburo Minami & Ke-Liang B. Chang**

- 11:00-11:30 M-K1 (10020) **Isao Nagaoka** - Recent aspects of the anti-inflammatory actions of glucosamine  
11:30-12:00 M-K2: **Hiroshi Nakamura** - Application of glucosamine for treatment of human disease - osteoarthritis  
12:00-12:30 M-K4 (10067) **Saburo Minami** - Application of D-glucosamine hydrochloride and collagen peptide to veterinary orthopedic diseases

**Session 2: Application in Life Science (I)**

Chairperson: **Kensuke Sakurai & Ming-Hua Ho**

- 11:00-11:30 L-K1 (10158) **T. Uragami** - Dehydration of organic solvents by porous chitosan membranes by temperature-difference controlled evaporation  
11:30-11:50 L-S1 (10025) **Kensuke Sakurai** - Structures and mechanical properties of chitosan films, and the application to tissue engineering  
11:50-12:10 L-S2 (10095) **H. Tamura** - Biomedical application of chitin and chitosan  
12:10-12:30 L-O1 (10017) **Nesrin Hasirci** - Use of chitosan for controlled release and medical applications

**Session 3: Industrial Commercial Aspects**

Chairperson: **Eugene Khor & Hiraku Onishi**

- 11:00-11:20 I-S1: **Isabelle Boucher** -  
11:20-11:40 I-S2: **Eugene Khor** - 50 years of chemical derivatization of chitin and chitosan.  
Highlights of Asian scientist contributions  
11:40-12:00 O-O3 (10085) **Hiraku Onishi** - Evaluation of glycol-chitosan as a  
water-soluble drug carrier for passive targeting of drugs  
12:00-12:20 O-O9 (10204) **Chia-Hung Chen** - Modified chitosan as a radionuclide carrier  
in radio medicine

12:30-13:30 Lunch Break

13:30-14:00 **Poster Session**

14:00-14:45 **Plenary Lecture 3** (10034) **Alain Domard** - 30 years: to improve the  
production of chitin and chitosan, produce series of copolymers and  
ooligomers, improve the characterizations, reveal a general law of behavior,  
generate nanoparticles, physical gels and derived forms, show a continuum of  
structure from solutions to other physical states, propose the concept of  
materials decoys of biological media, etc.

Chairperson: **Ying-Ling Liu**

14:45-15:30 **Plenary Lecture 4** (10201) **Chong-Su Cho** - Chitosan derivatives as for DNA  
and siRNA carriers

Chairperson: **Hsing-Wen Sung**

15:30-16:00 Coffee Break

#### **Session 4: Monomer and Oligomer(II)**

Chairperson: **Se-Kwon Kim & Yung-Chuan Liu**

- 16:00-16:20 M-S1 (10134) **Se-Kwon Kim** - Biological activity of chitosan oligosaccharides,  
chitin oligosaccharides and their derivatives  
16:20-16:40 M-S2 (10198) **Nguyen Anh Dzung** –Chitosan nanoparticles as a novel delivery  
system for H5N1 influenza vaccine  
16:40-17:00 M-S3 S.T. Yu-Production of N-acetylchitooligosaccharides by  
Chitin-Degrading Bacteria Using Chitin Power as Carbon Source in Cultures

#### **Session 7: Chemical Aspects**

Chairperson: **Martin G. Peter & Hiroyuki Saimoto**

- 17:00-17:30 C-K1 (10155) **Martin G. Peter** - Applications of mass spectrometry to analysis  
of structure and bioactivity of chito-oligosaccharides (CHO's)  
17:30-17:50 C-S1 (10133) **Hiroyuki Saimoto** - Synthesis of novel chitosan with chitosan  
side chains

### **Session 5: Application in Life Science**

Chairperson: **Sevda Senel & Dra Angeles Heras Caballero**

- 16:00-16:30 L-K2 (10176) **Sevda Senel** - Potential applications of chitosan in oral mucosal drug delivery
- 16:30-17:00 L-K3 (10218) **Dra Angeles Heras Caballero** - Chitosan and co-passengers: Functional applications
- 17:00-17:20 L-O2 (10093) **San Hein** - Chitosan: A tool for RNAi therapeutics
- 17:20-17:40 L-O3 (10106) **Jiu-Yao Wang** - The anti-allergic effect of water soluble chitosan in clinical and murine model of asthma
- 17:40-18:00 L-O4 (10163) **Weiliam Chen** - Chitosan based in situ gelable hydrogel for modulating wound healing

### **Session 6: Enzymatic Aspects**

Chairperson: **Ro-Dong Park & Takeshi Watanabe**

- 16:00-16:30 E-K1: **Ro-Dong Park** - Extracellular chitin deacetylase from *Mortierella* sp. DY-52
- 16:30-16:50 E-S1 (10141) **Takeshi Watanabe** - Local structural feature of the catalytic domain of rice class I chitinase
- 16:50-17:10 E-O1 (10115) **Toki Taira** - Antifungal activity of plant GH family 19 chitinases
- 17:10-17:30 E-O2 (10121) **Takayuki Ohnuma** - A class V chitinase from *Arabidopsis thaliana*: Functional diversity in plant family GH-18 chitinases
- 17:30-17:50 E-O3 (10182) **Rui-Qing Qian** - Lysozyme susceptible chitosan 1) Preparation and properties

## **Tuesday September 8, 2009**

### **Session 8: Nanotechnology(I)**

Chairperson: **R. Jayakumar & Francisco M. Goycoolea**

- 08:30-09:00 N-K2 (10216) **Ying-Ling Liu** - Chitosan based membranes for pervaporation dehydration on alcohol aqueous solutions
- 09:00-09:20 N-S1 (10016) **R. Jayakumar** - Perspectives of chitin and chitosan based nanomaterials for biomedical applications
- 09:20-09:40 N-O1 (10033) **Krisana Siralertmukul** - Characterization and preparation of clindamycin-loaded alginate/chitosan core-shell nanoparticles by electrospray technique
- 09:40-10:00 N-O2 (10048) **Yi-Sheng Lin** - Preparation of biocompatible and stable chitosan- carboxymethyl dextran nanoparticles
- 10:00-10:20 N-O3 (10049) **Manthiriyappan Sureshkumar** - Dopamine treated magnetic-chitin nanoparticles as a new matrix for enzyme immobilization and purification

10:20-10:40 O-O1 (10068) **Md. Iftekhar Shams** - Optically transparent composites reinforced with crab shell chitin nanofibers

### **Session 9: Biological and Ecological Aspects**

Chairperson: **Bruno M. Moerschbacher & Yu-Kaung Chang**

08:30-09:00 B-K1 (10139) **Guo-Jane Tsai** - Affecting factors on the antibacterial activity of chitosan

09:00-09:30 B-K2 (10220) **Bruno M. Moerschbacher** - Towards chitosans with non-random patterns of acetylation

09:30-09:50 B-S1: **Rath Pichyangkura** -

09:50-10:10 B-O2 (10081) **N. Muangsin** - Mucoadhesive polymer as a drug delivery system: Synthesis and evaluation of chitosan-4-carboxybenzenesulfonamide conjugates

10:10-10:30 B-O3 (10099) **Shohei Sakuda** - Strong anti-asthmatic and Ym1-binding activities of demethylallosamidin

10:30-10:50 B-O4 (10146) **Chang-Suk Kong** - Carboxymethylated chitin inhibits adipocyte differentiation of 3T3-L1 preadipocytes via activating AMPK signal pathway

10:50-11:20 Group Picture

11:20-18:30 Excursion

18:30-20:30 Banquet

### **Wednesday September 9, 2009**

8:30-9:15 **Plenary Lecture** (10183) **Gregory F. Payne** - Chitosan to electroaddress biological components in lab-on-a-chip devices

Chairperson: **Chung-Yih Wang**

9:15-10:00 **Plenary Lecture** (10120) **Kjell M. Vårum** - Chitosans prepared by homogeneous and heterogeneous deacetylation of chitin. How are the acetyl groups distributed?

Chairperson: **Guo-Jane Tsai**

10:00-10:30 Coffee Break

### **Session 10: Nanotechnology(III)**

Chairperson: **Willem F. Stevens & Jui-Che Lin**

10:30-11:00 N-K1 (10026) **Willem F. Stevens** - Nanochitin

11:00-11:20 N-S2 (10202) **Francisco M. Goycoolea** - Chitosan-based nanosystems: Physical characterization and application in nasal drug delivery

11:20-11:40 N-S3 (10203) **P. Lertsutthiwong** - Process development for encapsulation of turmeric oil in chitosan-crosslinked alginate nanocapsules

11:40-12:00 N-O4 (10050) **Evrin Yenilmez** - Release characteristics of vitamin E incorporated chitosan microspheres and in vitro-in vivo evaluation for topical application

12:00-12:20 N-O5 (10061) **Shinsuke Ifuku** - Simple preparation method of chitin nanofibers from prawn shell under neutral condition

### **Session 11: Resources and Production**

Chairperson: **V. P. Varlamov & Jeen-Kuan Chen**

10:30-11:00 R-K1 (10184) **V. P. Varlamov** - Protein delivery by nanoparticles formed by chitosan-N-acyl derivatives

11:00-11:30 R-K2 (10039) **San-Lang Wang** - Bioconversion of chitinous materials for the production of enzymes and bioactive materials

11:30-11:50 R-O2 (10052) **Jeen-Kuan Chen** - Chitin degrading factors hypothesis

11:50-12:10 R-O3 (10117) **Nitar Nwe** - Laboratory scale production of <sup>13</sup>C labelled chitosan by fungi *Absidia coerulea* and *Gongronella butleri* grown in solid substrate and submerged fermentation

12:20-13:30 Lunch Break

13:30-14:00 Poster Session

### **Session 12: Nanotechnology (III)**

Chairperson: **Hyun-Jin Park & Dong-Hwang Chen**

14:00-14:20 N-S4: **Hyun-Jin Park** - Formation of self-assembled chitosan nanoparticles

14:20-14:40 O-O5 (10150) **Cheng-Ho Chen** - Effect of chitosan on the interfacial polymerization of aniline

14:40-15:00 N-O6 (10102) **N. Saengkrit** - Synergistic of chitosan derivative and poly(ethylenimine) to improve gene transfection efficiency in mammalian cell

### **Session 13: Application in Other Fields**

Chairperson: **Kuo-Huang Hsieh & Trong-Ming Don**

14:00-14:30 O-K1 (10072) **Kuo-Huang Hsieh** - Evaluation of chitosan/ $\gamma$ -PGA hydrogel for wound dressing materials

14:30-14:50 O-O2 (10080) **Seiji Kurozumi** - Development for novel hemostatic material using chitinous sponge and its mechanism of action

14:50-15:10 O-O6 (10181) **Ming-Yang Hsu** - Characteristics of elovich equation used for the analysis of adsorption kinetics in dye-chitosan systems

### **Session 14: Physical and Physicochemical Aspects**

Chairperson: **George Roberts & Toshiaki Dobashi**

- 14:00-14:30 P-K1 (10168) **George Roberts** - The dyeing of chitosan
- 14:30-14:50 P-S1 (10094) **Toshiaki Dobashi** - Preparation and characterization of chitosan hydrogel with birefringence
- 14:50-15:10 P-O1 (10128) **Jae-Sik Na** - Swelling properties of chitosan/soy protein blended film
- 15:10-15:30 Coffee Break
- 15:30-17:00 Regulatory Aspects  
Chairperson:
- 17:00-17:30 Closing Ceremony