

The 4th Asian Coating Workshop Program

Sunday – May 6, 2012

16:00 – 20:00 Registration and Reception

Monday – May 7, 2012 (1st Day)

08:00 – 09:00 Registration

09:00 – 09:20 Opening

09:20 – 10:00 **Keynote speech I, Chair: Prof. Ta-Jo Liu**
Topic: From Web Coating to Imaging and Flexible Electronics
Speaker: [Dr. Rong-Chang Liang](#)

10:00 – 10:30 Break

Session 1: Fabrication methods I

Chair/Co-Chair: Prof. Hyun Wook Jung / Dr. Shu-Heng Wen

10:30 – 10:45 **Effect of fabrication process on nanostructure and properties of organic semiconductor thin films**

[Yoshiko Tsuji](#) and Yukio Yamaguchi
The University of Tokyo, Japan

10:45 – 11:00 **A large area bimaterial sheet of piezoelectric nanogenerators for energy harvesting: effect of RF sputtering on ZnO nanorod**

[Chi-Ju Chiang](#), Chun-Jie Chang, Chih-Chung Hsiao, and Chi-An Dai
National Taiwan University, Taiwan

11:00 – 11:15 **Bubble and droplet size variations of “Air-Bubble Coating” caused by different flow input systems in a microfluidic T-junction**

[Yu-Wen Hsieh](#), I-Chun Lin, and An-Bang Wang
National Taiwan University, Taiwan

11:15 – 11:30 **Rheological characteristics of metallic automotive basecoats and their flow dynamics in 3-roll coating process**

In Jun Lee, Seung Man Noh, Joon Hyun Nam, and [Hyun Wook Jung](#)
Korea University, Korea

11:30 – 11:45 **Composite gas barrier film with a liquid inner layer**

[Chin-Chia Liu](#) and Ta-Jo Liu
National Tsing Hua University, Taiwan

11:45 – 12:00 **Application of automatic dispensing in selectively fabricating flexible sensor array**

[Wen-Pin Shih](#), Dao Liang, and Chen-Chun Huang
National Taiwan University, Taiwan

12:00 – 13:30 Lunch (Lunch Box)

Session 2: Drying techniques

Chair/Co-Chair: Prof. Yukio Yamaguchi / Prof. Susumu Inasawa

13:30 – 13:45 **Microrheological investigation on the surface of coatings**

[Yoshiyuki Komoda](#), Todd Squires, and Gary Leal
Kobe University, Japan

13:45 – 14:00 **Effect of shear strain on drying process of clay dispersion films**

[Shigeyuki Kobayashi](#), Yoshiyuki Komoda, and Hiroshi Suzuki
Kobe University, Japan

14:00 – 14:15 **The effects of drying on the LCD PI retardation**

[Ping-Yao Wu](#), Shu-Heng Wen, and Chyi-Ming Leu
Industrial Technology Research Institute, Taiwan

14:15 – 14:30 **The multi-scale structure formation of nanoparticles in colloidal solutions during coating and drying**

[Yukio Yamaguchi](#)
The University of Tokyo, Japan

14:30 – 14:45 **Drying-induced formation and deformation of colloidal films at air-liquid interface**

[Susumu Inasawa](#), Yoshihisa Hirano, and Yukio Yamaguchi
The University of Tokyo, Japan

14:45 – 15:00 **Sudden formation of particle condensed layer from colloidal suspension during drying**

[Norito Iwamuro](#), Susumu Inasawa, and Yukio Yamaguchi

15:00 – 15:30 Break

Session 3: Advancements in material & measurement methods

Chair/Co-Chair: Prof. Masato Yamamura / Prof. Chi-An Dai

- 15:30 – 15:45 **Destruction of particle agglomerates with the development of velocity field of a simple shear flow**
Nobuhiko Furuse, Yoshiyuki Komoda, and Hiroshi Suzuki
Kobe University, Japan
- 15:45 – 16:00 **High refractive index and thermal stability UV-curable novel inorganic-organic acrylate nanocoating materials**
K. L. Liu, S. Z. Tseng, C. K. Huang, C. H. Chan, J. L. Han, and K. H. Hsieh
National Taiwan University, Taiwan
- 16:00 – 16:15 **Donor-acceptor chromophores-based conducting polymers for photovoltaic cell applications**
Yi-Lung Yang, Yi-Huan Lee, Chun-Jie Chang, Ang-Jih Lu, Wei-Chun Hsu, Leeyih Wang, Man-kit Leung, and Chi-An Dai
National Taiwan University, Taiwan
- 16:15 – 16:30 **Measuring drying path in phase-separating cellulose acetate films**
Mikiko Hatayama, Masato Yamamura, Yoshihide Mawatari, and Hiroyuki Kage
Kyushu Institute of Technology, Japan
- 16:30 – 16:45 **Improve the thermal dissipation capability of LEDs by coating a DLC film on the heat sinks**
Yi-Fan Fu, Jui-Ming Hsu, Jing-Shyang Horng, and Jerry Kung
National United University, Taiwan
- 16:45 – 17:00 **The effect of different coatings on the BSDF property of flat surfaces**
Cheng-Fang Ho, Kuan-Huan Wu, Ting-Ming Huang, and Shenq-Tsong Chang
National Applied Research Laboratories, Taiwan
- 18:00 – 21:00 Welcome Party (Chinese Cuisine)

Tuesday – May 8, 2012 (2nd Day)

08:00 – 09:00 Registration

09:00 – 09:40 **Keynote speech II, Chair: Prof. Kuo-Haung Hsieh**
Topic: Coating Technology in Emerging Display Development
Speaker: Dr. Janglin Chen

09:40 – 10:10 Break

10:10 – 12:10 **Poster Session**
Chair/Co-Chair: Prof. Yoshiyuki Komoda / Prof. Wen-Pin Shih

12:10 – 13:30 Lunch (Lunch Box)

Session 4: Modeling & optimization

Chair/Co-Chair: Prof. Cheng-Che Hsu / Prof. Kentaro Taki

- 13:30 – 13:45 **Three-dimensional calculations and experiments for flow dynamics and operability windows in slot coating process**
Si Hyung Lee, See Jo Kim, and Hyun Wook Jung
Korea University, Korea
- 13:45 – 14:00 **Kinetic modeling of UV cured coating process towards the molecular design of network structures**
Kentaro Taki, Yoshitaka Kubota, and Masahiro Ohshima
Kyoto University, Japan
- 14:00 – 14:15 **A study to establish the empirical models of capillary stripe coating**
I-Chun Lin, Yu-Wen Hsieh, and An-Bang Wang
National Taiwan University, Taiwan
- 14:15 – 14:30 **An improved weighting method for inversely determining elastic constants of coating layers from dispersion curves of surface acoustic waves**
Cheng-Hsien Chung and Yung-Chun Lee
National Cheng Kung University, Taiwan
- 14:30 – 14:45 **A theoretical study of failure mechanisms of rigid films on soft substrates**
Sergei Alexandrov, Robert Goldstein, and Yeau-Ren Jeng
National Chung Cheng University, Taiwan
- 14:45 – 15:00 **Optimized inkjet printed UV resin with removal of residual layer of roller-type nanoimprint**

15:00 – 15:30 Break

Session 5: Fabrication methods II

Chair/Co-Chair: Prof. Kyung Hyun Ahn / Prof. Ying-Chih Liao

15:30 – 15:45	Real-time photo-luminescence measurement during drying of graphite dispersion films <u>Yuta Amano</u> , Masato Yamamura, Yoshihide Mawatari, and Hiroyuki Kage <i>Kyushu Institute of Technology, Japan</i>
15:45 – 16:00	Printing conductive silver lines via inkjet reaction system <u>Zhen-Kai Kao</u> and Ying-Chih Liao <i>National Taiwan University, Taiwan</i>
16:00 – 16:15	The effect of bead vacuum on tensioned web slot coating <u>Chia-Ching Lee</u> and Ta-Jo Liu <i>National Tsing Hua University, Taiwan</i>
16:15 – 16:30	Latex migration during drying of battery slurries <u>Sanghyuk Lim</u> , Masato Yamamura, and Kyung Hyun Ahn <i>Seoul National University, Korea</i>
16:30 – 16:45	Manufacturing process of FCCL and its challenges <u>Byoung Wook Jo</u> and Kyung Hyun Ahn <i>Seoul National University, Korea</i>
16:45 – 17:00	Deposition of ZnO thin films using an atmospheric pressure plasma jet Hsin-Chieh Li, Yao-Jhen Yang, Shao-Tzu Lien, Jian-Zhang Chen, I-Chun Cheng, and <u>Cheng-Che Hsu</u> <i>National Taiwan University, Taiwan</i>
17:00 – 17:15	Mechanical properties of nanoscale multilayered coatings <u>Yun-Che Wang</u> , Chun-Yi Wu, and Jing-Wei Lien <i>National Cheng Kung University, Taiwan</i>

18:30 – 20:10 Banquet at [The Grand Hotel](#)

20:10 – 21:00 Lucky Draw

21:00 – 21:30 Short Tour of [Century-Old Golden Dragons, Plum-Flower Caisson Ceiling, and Emergency Underpasses](#)

Wednesday – May 9, 2012 (Tour)

Due to the limited space for lab tour, the technical tour on May 9th is arranged only for students and faculties who register in the first 60 persons comprised of 30 quotas for foreign participants and the other 30 for domestic ones.

08:00	Tour Pickup Point 1
08:20	Tour Pickup Point 2
08:30 – 10:20	To Industrial Technology Research Institute (ITRI)

Technical Tour

10:30 – 11:00	ITRI Technology Window
11:10 – 11:40	Flexible Electronics Pilot Lab
11:50 – 12:20	Micro/Nano Manufacturing Lab & Patterning Thin Film Lab
12:30 – 13:00	Leave for Sansia with the lunch box on the bus

Cultural Tour

13:00 – 14:30 [Sansia Old Street](#)

14:30 – Return to Taipei [Two buses will stop by Taoyuan International Airport (around 15:00) and Taipei Songshan Airport (around 15:30), respectively.]

Every poster presenter is scheduled for a 3-minute oral presentation.

- [P1] **The effects of drying on the LCD PI film curling**
10:10 – 10:13 Ping-Yao Wu, Shu-Heng Wen, and Chyi-Ming Leu
Industrial Technology Research Institute, Taiwan
- [P2] **Electrostatic-assisted photoresist spray coating and stepped lithographic technique for directly fabricating rigid microstructures onto metal rollers**
10:14 – 10:17 Sheng-Hsin Wu, Rong-Hong Hong, Sen-Yeu Yang, Tai-Hsiang Liao, and Tzu-Chien Huang
National Taiwan University, Taiwan
- [P3] **Particle dispersion model for a suspension in a non-uniform shear flow**
10:18 – 10:21 Masuda Koji, Hiroshi Suzuki, and Yoshiyuki Komoda
Kobe University, Japan
- [P4] **Novel ZnO nanorod/conducting polymer nanocomposites: synthesis, characterization, and applications in piezoelectric nanodevices**
10:22 – 10:25 Yu-Ping Lee, Yi-Lung Yang, Yi-Huan Lee, Chi-Ju Chiang, Chun-Jie Chang, Chih-Chung Hsiao, and Chi-An Dai
National Taiwan University, Taiwan
- [P5] **In-situ synthesis of conducting polymer composite film as a CO₂ gas sensor**
10:26 – 10:29 Hung-Wei Lin, Kuo-Chang Kau, and Chi-An Dai
National Taiwan University, Taiwan
- [P6] **Drying-induced particle packing in toluene/ethanol mixtures**
10:30 – 10:33 Hiroaki Koga, Masato Yamamura, Yoshihide Mawatari, and Hiroyuki Kage
Kyushu Institute of Technology, Japan
- [P7] **Synthesis of thermal-responsive chitin-based polyurethane coating in the dressing**
10:34 – 10:37 Szu-Hsien Chen, Zheng-Wei Liu, Ching-Nan Chuang, and Kuo-Haung Hsieh
National Taiwan University, Taiwan
- [P8] **Synthesis of functional biodegradable polyurethanes with poly lactic acid-based without catalysts and initiator use for coating material**
10:38 – 10:41 Zheng-Wei Liu, Szu-Hsien Chen, Ching-Nan Chuang, and Kuo-Haung Hsieh
National Taiwan University, Taiwan
- [P9] **Synthesis of Alkyl Main Chain Pendant Biphenyl Carbazole or Triphenylamine Unit and application in PLEDs by spin-coating**
10:42 – 10:45 Ching-Nan Chuang, Szu-Hsien Chen, Zheng-Wei Liu, Man-kit Leung, and Kuo-Haung Hsieh
National Taiwan University, Taiwan
- [P10] **Control of the nanostructure and property of phosphorescent organic small molecular thin films using host-guest system fabricated by solution process**
10:46 – 10:49 Hajime Tanabe, Yoshiko Tsuji, and Yukio Yamaguchi
The University of Tokyo, Japan
- [P11] **Structural and electrical properties of fluorine doped tin oxide thin films by spray pyrolysis**
10:50 – 10:53 Naoya Tsutsumi, Yoshiko Tsuji, and Yukio Yamaguchi
The University of Tokyo, Japan
- [P12] **The development of photo paper for dye diffusion & thermal transfer printing**
10:54 – 10:57 Po-Jung Huang and Ta-Jo Liu
National Tsing Hua University, Taiwan
- [P13] **The development of polymer light emitting diodes (PLED) through wet coating operations**
10:58 – 11:01 Chun-Han Chu and Ta-Jo Liu
National Tsing Hua University, Taiwan
- [P14] **Curtain coating with organic/inorganic particles added**
11:02 – 11:05 Jia-Hung Chang and Ta-Jo Liu
National Tsing Hua University, Taiwan
- [P15] **Generating Cell Culture Patterns by Inkjet Printing Technology**
11:06 – 11:09 Yun-Ting Ma, Chi-Hui Huang, Jia-shing Yu, and Ying-Chih Liao
National Taiwan University, Taiwan
- [P16] **One-step simple fabrication method for microfluidic devices using screen printing technique**
11:10 – 11:13 Ju-Yen Sun, Shih-Bin Chen, and Ying-Chih Liao
National Taiwan University, Taiwan
- [P17] **Inkjet printed hydrogen peroxide sensor stabilized by cellulose acetate coating**
11:14 – 11:17 Yu-Ping Lin, Pei-Yu Huang, and Ying-Chih Liao
National Taiwan University, Taiwan
- [P18] **A low cost and rapid fabrication of multiple T-junction flexible microchannels for parallel dye coating**
11:18 – 11:21 Wen-Pin Shih, Guan-Wei Wu, Chen-Chun Huang, and An-Bang Wang
National Taiwan University, Taiwan

[P19] **New pattern coating method of single-substrate Cholestric liquid crystal display**

11:22 – 11:25 Yu-Ju Liu, An-Bang Wang, Shu-Mei Chang, and Jhih-Ping Lu
National Taiwan University, Taiwan

[P20] **The effect of contraction on the performance of a fishtail slot coating die**

11:26 – 11:29 Tzu-Yao Lin, Yu-Ju Liu, Yu-Wen Hsieh, and An-Bang Wang
National Taiwan University, Taiwan