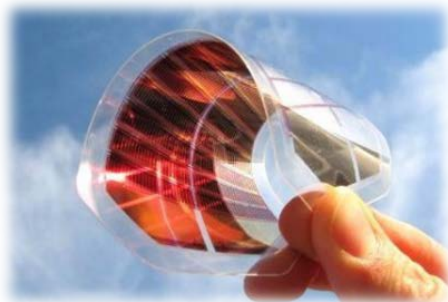


# 2013 Korea-Germany IRTG Workshop on Self-Organized Materials for Optoelectronics

*February 25 - 28, 2013*

Multipurpose Conference Room, Building 39  
Seoul National University



*Co-Sponsored by:*

*National Research Foundation of Korea (NRF)*



&

*German Research Foundation (DFG)*



# 2013 Korea-Germany IRTG Workshop

## < Schedule >

### **February 25 (Monday)**

14:00 Arrival and Check-in at Hoam Faculty House

17:00 Welcoming Dinner (Hoam Faculty House)

### **February 26 (Tuesday) / Multipurpose Conference Room ( Bldg. 39, Rm. B103)**

09:00 ~ 09:20 Opening Remarks

09:20 ~ 09:40 Photo Session

#### **Session I**

**(Chairman: Prof. Kookheon Char)**

09:40 ~ 10:10 Prof. Rudolf Zentel

*“Organic/Inorganic Hybrids for Optoelectronic Applications”*

10:10 ~ 10:40 Prof. Kwang-Sup Lee

*“Fullerenes and Low Bandgap Polymers for OTFT and Solar Cells”*

10:40 ~ 11:00 Coffee Break

**(Chairman: Prof. Kwang-Sup Lee)**

11:00 ~ 11:25 Prof. Katharina Landfester

*“Triplet-Triplet Annihilation Upconversion: From Devices to Applications in Living Cells”*

11:25 ~ 11:50 Prof. Ji Young Chang

*“Luminescent Sensors Based on Molecularly Imprinted Polymers”*

11:50 ~ 12:15 Prof. Thomas Basché

*“Shifting the Optical Transitions of Single Organic Dye Molecules by Local Compressive Stress”*

12:15 ~ 14:00 Lunch (*Durae Midam*)

## Session II

**(Chairman: Prof. Thomas Basché)**

14:00 ~ 14:25 Prof. Wolfgang Tremel

*“Periodic Acoustic and Optical Nanostructures”*

14:25 ~ 14:50 Prof. Byeong-Hyeok Sohn

*“Nanomaterials Based on Self-Assembled Block Copolymers for Photonic Applications”*

14:50 ~ 15:15 Dr. Frédéric Laquai

*“The Effect of Morphology on Charge Generation and Recombination in Low-Bandgap Polymer: Fullerene Photovoltaic Blends”*

15:15 ~ 15:25 Coffee Break

**(Chairman: Dr. Frédéric Laquai )**

15:25 ~ 15:50 Dr. Denis Adrienko

*“Design Rules for Charge-Transport Efficient Host Materials for OLED Applications”*

15:50 ~ 16:15 Prof. Tae-Lim Choi

*“Controlling the Nanostructures of Polymers by Olefin Metathesis Catalysis”*

16:15 ~ Dinner (*Seoul Ga On / Gang Buk Jong Ro Area*)

## **February 27 (Wednesday) / Multipurpose Conference Room ( Bldg. 39, Rm. B103)**

## Session III

**(Chairman: Prof. Rudolf Zentel )**

09:00 ~ 09:30 Prof. Klaus Müllen

*“Synthesizing Device Properties”*

09:30 ~ 09:55 Prof. Changhee Lee

*“Improved Performance of Inverted Organic Solar Cells Using Al Doped Nanocrystalline Zinc Oxide Layers”*

09:55 ~ 10:25 Prof. Kurt Kremer

*“Perspectives of Soft Models in Modeling Morphology of Polymeric Semiconductors”*

10:25 ~ 10:50 Prof. Jang-Joo Kim  
*“Excited State Charge Transfer Complexes: Fundamentals to Device Applications”*

10:50 ~ 11:00 Coffee Break

**(Chairman: Dr. Denis Adrienko)**

11:00 ~ 11:25 Dr. Rüdiger Berger  
*“Electrical Characterization of Solar Cell Materials Using Scanning Force Microscopy”*

11:25 ~ 11:50 Prof. Yang Ho Na  
*“Double Network Hydrogels with Extremely High Mechanical Strength and Their Application”*

11:50 ~ 12:15 Prof. Holger Frey  
*“Poly(ethylene glycol) and Poly(propylene glycol): Adventures in a Highly Established Class of Materials ”*

12:15 ~ 14:00 Lunch (*Faculty Club*)

## **Poster Session II**

**(Chairman: Prof. Yang Ho Na)**

14:00 ~ 16:00 Student Poster Presentation  
\*Titles are attached at the end of this schedule

16:00 ~ 17:00 IRTG PI Discussions

17:00 ~ Dinner (*Sodam Maru*)

## **February 28 (Thursday) /Multipurpose Conference Room ( Bldg. 39, Rm. B103)**

### **Tutorial Session**

**(Chairman: Prof. Byeong-Hyeok Sohn)**

09:30 ~ 10:20 Prof. Jan Lagerwall  
*“Optoelectronics and Electrooptics of Liquid Crystals”*

10:20 ~ 11:10 Prof. Hee-Tae Jeong  
*“New Things in Old Places: Liquid Crystals and Nanotechnology”*

- 11: 10 ~ 12: 00 Prof. Dae-Hyeong Kim  
*“Flexible and Stretchable Electronics and Applications for Biomedical Devices”*
- 12: 00 ~ 14:00 Lunch (*Rak Gu Jeong*)
- 14: 50~ 17:00 Lab Visit/Small Group Discussions
- 17:30 ~ Dinner (*Dong Chun Hong*)

**\*Poster Titles**

- P1. ***“Effect of Controllable Molecular p-type Doping on Hole Mobility in p-doped Amorphous Organic Semiconductors”***  
S.-J. Yoo, J.-H. Lee, and J.-J. Kim
- P2. ***“The Effect of Solvent Additives on Morphology and Excited State Dynamics in PCPDTBT:PCBM Photovoltaic Blends”***  
F. Etzold, I. A. Howard, N. Forler, D. M. Cho, M. Meister, H. Mangold, J. Shu, M. R. Hansen, K. Müllen and F. Laquai
- P3. ***“Synthesis of Conjugated Polymer Containing Pre-functional group via Cyclopolymerization”***  
J. Kim, E.-H. Kang, and T.-L. Choi
- P4. ***“New Materials through the Combination of Carbon Dioxide with Tailored Epoxide Building Blocks”***  
J. Geschwind, and H. Frey
- P5. ***“White-Light Emission from a Mixed Organogel of Lanthanide(III)-Containing Organogelators”***  
H. Kim and J. Y. Chang
- P6. ***“Novel Ruthenium(II) Chromophores for Applications in Dye Sensitized Solar Cells and Light Emitting Devices”***  
A. Breivogel, S. Wooh, M. Park, D. Lee, J. Dietrich, C. Lee, K. Char, and K. Heinze
- P7. ***“Nanostructures Templated by Self-Assembled Block Copolymers for Photonic Applications”***  
H. Kim, J.-H. Kim, and B.-H. Sohn
- P8. ***“Low-Bandgap DPP-Type Polymers for OPVs – Relation between Device Performance and Photophysical Properties”***  
J. Ochsmann, M. Turbiez, D. Chandran, I. Howard, K.-S. Lee, and F. Laquai
- P9. ***“Enhanced Photovoltaic Performance of Inverted Polymer Solar Cells with Al-Doped ZnO Interfacial Layer”***  
J. Y. Kim, M. Thambidurai and C. Lee
- P10. ***“Charge Generation in Solid-state Dye-sensitized Solar Cells Using Push-Pull Dyes”***  
Y. Kim, M. Meister, I. A. Howard, F. Hinkel, K. Müllen, and F. Laquai

- P11. ***“Polymerization and Characterization of Redox Active Polymer Brushes on ITO via Atom Transfer Radical Polymerization”***  
Y. Lee, P. Schattling, S. Hanif, P. Theato, J. Pyun, and K. Char
- P12. ***“Utilization of Radical Functionalities in Polymers”***  
P. S. Schattling, Y. Lee, K. Char, and P. Theato
- P13. ***“Synthesis of Block and Gradient Copolymer and Their Single Chain Analysis”***  
K. O. Kim, and T.-L. Choi
- P14. ***“ $\pi$ -Conjugated Low-Bandgap Polymers for Organic Photovoltaics”***  
S. Kann, D. Chandran, Y.-H. Kho, R. Zente, and K.-S. Lee
- P15. ***“Dynamical Heterogeneity of the East Model in Higher Dimensions”***  
S. Kim and Y. Jung
- P16. ***“Promising Pyrene-Derivatives for High Efficient OLED-Devices”***  
D. Chercka, S. J. Yoo, J. J. Kim, M. Baumgarten, and K. Müllen
- P17. ***“Graphene Films with Arrays of Nanoparticles by Diblock Copolymer Micelles and Their Electrochemical Properties”***  
S.-S. Kim, Y.-R. Kim, and B.-H. Sohn
- P18. ***“Computer Simulation of Rod-Coil Block Copolymers”***  
S. Dolezel, and F. Schmid
- P19. ***“SANS Studies for Additives Triggered Morphological Changes for Improved Efficiency of Organic Solar Cells”***  
W. T. Choi, J. Ko, T.-H. Kim, Y.-S. Han, and K. Char
- P20. ***“Kelvin Probe Force Microscopy - A Powerful Tool for Optoelectronic Materials”***  
A. L. Domanski, E. Sengupta, L. Zur Borg, R. Zentel, A. Breivogel, K. Heinze, J.-H. Lee, K. Char, H.-J. Butt1 and R. Berger
- P21. ***“Static Properties of Highly Confined Polymer Melts Near the Surface”***  
E. Lee, K. Kremer, and Y. Jung

- P22. ***“Polymers with Low Lying HOMO for QD-Block Copolymer Hybrids”***  
A. Fokina, L. zur Borg, and R. Zentel
- P23. ***“Piezochromic Behaviors of Three-Branched Molecules: On-off Switching and Color Tuning”***  
Y. Lim, and J. Y. Chang
- P24. ***“Hybrid Bragg Stacks as 1D Phononic Crystals”***  
H. Huesmann, F. Liaqat, D. Schneider, G. Fytas, H.-J. Butt, and W. Tremel.
- P25. ***“Multi-Layered Metal Oxide Electron Transport Layer for Quantum Dot Light Emitting Diodes”***  
M. Park, D. Lee, J. Lim, J. H. Seo, J. Kwak, K. Char, S. Lee and C. Lee
- P26. ***“Anodization of Various Metals for the Syntheses of Nanoporous Materials for DSSC”***  
N. Mohrin, H. Kerschbaumer, M. Panthöfer, and W. Tremel
- P27. ***“Photoconductivity of C60 as an Origin of Bias-Dependent Photocurrent in Organic Photovoltaics”***  
W.-I. Jeong, Y. E. Lee, H.-S. Shim, T.-M. Kim, S.-Y. Kim and J. J. Kim
- P28. ***“Graphitic Coated Nanoparticles for the Application as Electrode Materials in Lithium-Ion Batteries”***  
B. Oschmann, D. Bresser, N. Tahir, W. Tremel, S. Passerini, and R. Zentel
- P29. ***“Structure-Property Relationships of Various Poly(norbornene imide)s”***  
K.-H. Yoon, K. O. Kim, M. Schaefer, and D. Y. Yoon
- P30. ***“Micropumps from Liquid Crystalline Elastomers Produced in Microfluidics”***  
H.-L. Liang, E.-K. Fleischmann, N. Kapernaum, F. Giesselmann, J. Lagerwall, and R. Zentel
- P31. ***“Functionalization of TiO<sub>2</sub>-Nanoparticles with Semiconducting Polymers Containing a Photocleavable Anchor-Group and Separation via Irradiation Afterwards”***  
F. Mathias, and R. Zentel