

## 2013 International Biomimetics Symposium in Taiwan –Learn from the Nature

Venue: International Conference Hall at The Library of National Taiwan University

Time: Nov. 12<sup>th</sup> to Nov. 13, 2013

Organizing Committee:

Chair/ Dean Ming-Liang Kuo (National Taiwan University)  
 Dr. Cheng-Ming Chuong (University of Southern California)  
 Dr. Kai-Jung Chi (Chung Hsing University)  
 Dr. I-Min Tso (Tunghai University)  
 Dr. Jer-Nan Juang (National Cheng Kung University)  
 Dr. Jing-Tang Yang (National Taiwan University)  
 Dr. Grace Chu-Fang Lo (National Cheng Kung University/ National Taiwan University)

### Agenda

| Nov. 12 , 2013 (Tuesday) |   |   |
|--------------------------|---|---|
| Time                     | Title   | Speaker   |
| 8:30~9:00                | Registration  |   |
| 9:00~9:10                | Opening Remarks   | President Dr. Pan-Chyr Yang,<br>National Taiwan University<br>Director General, Dr. Jeng-Jiann Chiu<br>Department of Life Sciences,<br>National Science Council |
| 9:10~10:20               | Modulator: Chuan-Chin Chiao   |   |
| 9:10~10:00               | Bio-inspired concepts derived from rapid adaptive coloration of cephalopods | Dr. Roger T. Hanlon   |
| 10:00~10:20              | Visual perception and camouflage behavior in cuttlefish                     | Chuan-Chin Chiao (焦傳金)  |
| 10:20~10:40              | Coffee Break  |   |
| 10:40~12:00              | Modulator: Jing-Tang Yang   |   |
| 10:40~11:20              | Scaling laws of bio-inspired flexible and flapping wing aerodynamics        | Wei Shyy (史維)   |
| 11:20~11:40              | Aerodynamics and biophysics of flapping-flight of passerines and insects    | Jing-Tang Yang(楊鏡堂)   |
| 11:40~12:00              | Towards high-efficiency triple-junction solar cells with                    | Pei-Chen Yu (余沛慈)   |

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|-----------------------------------|---|----------------------------|
|                                   | biologically-inspired nanosurfaces  |                            |
| 12:00~13:30                       | Lunch   |                            |
| 13:30~15:30                       | Modulator: Cheng-Ming Chuong  |                            |
| 13:30~14:00                       | iEGG (integrative evolutionary galliform genomics) as a biomimetic platform             | Cheng-Ming Chuong<br>(鍾正明) |
| 14:00~14:50                       | Physics, development, and evolution of structural colors of bird and insect             | Richard Prum               |
| 14:50~15:10                       | Finding the story inside a feather: Structure function relationship of feather branches | Wen-Tau Juan (阮文滔)         |
| 15:10~15:30                       | How birds create their feather pigment patterns   | Sung-Jan Lin (林頌然)         |
| 15:30~15:50                       | Coffee Break  |                            |
| 15:50~17:40                       | Modulator: I-Min Tso  |                            |
| 15:50~16:20                       | Bioinspired adhesives and coatings  | Ali Dhinojwala             |
| 16:20~16:40                       | Designing biomimetic fibers with desired features: inspirations from orb web spiders    | I-Min Tso (卓逸民)            |
| 16:40~17:00                       | Synchrotron radiation study on bio-crystalline materials                                | Hwo-Shuenn Sheu (許火順)      |
| 17:00~17:20                       | Learning from nature: Making stronger, tougher and lighter bio-inspired materials       | Po-Yu Chen (陳柏宇)           |
| 17:20~17:40                       | Learning and improvement of nanobionics from nature                                     | Yu-Chan Chao (趙裕展)         |
| <b>Nov. 13 , 2013 (Wednesday)</b> |   |                            |
| Time                              | Title   | Speaker                    |
| 9:00~10:30                        | Modulator: Yu-Chan Chao   |                            |
| 9:00~9:50                         | The brain's magnetic sense: A tool for navigation                                       | David Dickman              |
| 9:50~10:10                        | Magnetoreception in honeybee  | Chin-Yuan Hsu (徐錦源)        |
| 10:10~10:30                       | Seeing the world through an insect compound eye   | En-Cheng Yang (楊恩誠)        |
| 10:30-10:50                       | Coffee Break  |                            |
| 10:50~12:20                       | Modulator: Jer-Nan Juang  |                            |
| 10:50~11:40                       | Biomimetics: Engineering nature's best  | John Valasek               |

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|-------------|--|------------------------|
| 11:40~12:00 | Bio-inspired engineering technologies  | Jer-Nan Juang (莊哲男)    |
| 12:00~12:20 | Bio-inspired communication, computing and networking : From theory to practice | Chun-Hung Liu (劉俊宏)    |
| 12:20~13:30 | Lunch  |                        |
| 13:30~15:30 | Modulator: Kai-Jung Chi  |                        |
| 13:30~14:10 | Diversity of biological attachment devices as a basis for biomimetics          | Stanislav N. Gorb      |
| 14:10~14:30 | Jump stabilization: Nature's challenges and solutions                          | Kai-Jung Chi (紀凱容)     |
| 14:30~14:50 | What do they do in the shade? Novel adaptations of understorey plants          | Chiou-Rong Sheue (許秋容) |
| 14:50~15:10 | Tribology and biomimetics  | Li, Wang-Long (李旺龍)    |
| 15:10~15:30 | Coffee Break   |                        |
| 15:30~16:30 | Modulator: En-Cheng Yang   |                        |
| 15:30~15:50 | Biomimicry: an ancient tool and an emerging discipline                         | Peter Niewiarowski     |
| 15:50~16:10 | How can an alligator repetitively renew teeth throughout its life time         | Ping Wu (吳平)           |
| 16:10~16:30 | Life in the trees: Adaptation and development of the Chameleon                 | Raul E. Diaz Jr.,      |
| 16:30~17:30 | Round table discussion (chair: Cheng-Ming Chuong, Ming Liang Kuo)              |                        |