

## Program-at-a-Glance

	<b>Sunday 5 August 2018</b>	<b>Monday 6 August 2018</b>	<b>Tuesday 7 August 2018</b>	<b>Wednesday 8 August 2018</b>
<b>Morning</b>	Check-in 10:30–11:30	Check-in 09:30–10:30	Poster I 09:30–10:50	<b>Room A</b> 09:30–12:15 <i>Sensors Application</i>  <b>Room B</b> 09:30–11:30 1. <i>IoT Sensor and Application</i> 2. <i>Sensor Networks</i>
		Conference Opening 10:45–11:15	Tea break 10:00–10:50	
		Keynote Speech I 11:15–11:50	Keynote Speech V~VI 10:50–12:00	
Lunch Break				
<b>Afternoon</b>	SPINTECH Thesis Awards 13:30–15:30	Keynote Speech II~III 13:35–14:45	Poster II 13:30–15:30	End of Conference
		Short break 10 mins	Tea break 14:30–15:30	
		Keynote Speech IV 14:55–15:30	<b>Banquet Hall</b> 15:30–17:50 1. <i>Invited Speech</i> 2. <i>Biosensors</i>	
		Group Photo 15:40–15:50	<b>Room A</b> 15:30–17:00 <i>ICI2018 Annual Meeting</i>	
		Tea Break 15:50–16:50	<b>Room B</b> 15:30–17:15 1. <i>Applications of Wireless Sensor Network and Communication</i> 2. <i>Optical Sensors and Materials</i> 3. <i>Sensors for Smart Spindle</i>	
		Tea Break		
	SPINTECH Thesis Awards 16:00–18:00	Banquet 17:10–19:00	<b>Room C</b> 15:30–18:00 1. <i>Physical Sensors</i> 2. <i>Chemical Sensors</i>	
	Dinner 18:00–		Dinner 18:30–	

## Detailed Program

### Sunday, 5 August 2018

- 10:30 — 11:30 Registration at Howard Beach Resort 2F Lobby
- 12:00 — 13:30 Lunch Break at Champs Elysees
- 13:30 — 15:30 **SPINTECH Technology Thesis Awards**  
Oral Presentation by Graduate Students from General University at Room M101  
Oral Presentation by Graduate Students from Technical University at Room M102  
Poster Presentation by Undergraduate Students at Corridor
- 15:30 — 16:00 Tea Break (Professors at Rainbow Room and Students at Banquet Hall Corridor)
- 16:00 — 18:00 **SPINTECH Technology Thesis Awards**  
Oral Presentation by Graduate Students from General University at Room M101  
Oral Presentation by Graduate Students from Technical University at Room M102  
Poster Presentation by Undergraduate Students at Corridor
- 18:00 — Dinner at Formosa Restaurant

### Monday, 6 August 2018

- 09:30 — 10:30 Registration at Howard Beach Resort 2F Lobby

#### Banquet Hall

- 10:45 — 11:15 Conference Opening by Prof. Chien-Hung Liu and President Tony Wang of SPINTECH Technology
- 11:15 — 11:45 Keynote Speech I by Prof. Vladimir M. Mirsky — *Detection of large analytes: recent progress and fundamental limitation*, Chaired by Prof. Cheng-Chi Wang
- 11:45 — 11:50 Q&A Time
- 11:50 — 13:35 Lunch Break at Champs Elysees
- 13:35 — 14:05 Keynote Speech II by Prof. Dr. Bahram Nabet — *Plasmonic Enhancement of Nanowires Optical Cavities for THz Sensing*, Chaired by Prof. Cheng-Chi Wang
- 14:05 — 14:10 Q&A Time
- 14:10 — 14:40 Keynote Speech III by Dr. Debbie G. Senesky — *Tiny and Tough Sensors for Extreme Harsh Environments*, Chaired by Prof. Cheng-Chi Wang
- 14:40 — 14:45 Q&A Time
- 14:45 — 14:55 Short Break
- 14:55 — 15:25 Keynote Speech IV by Asso. Prof. Gianluigi Ferrari — *Inertial Signal Processing for IoT Applications*, Chaired by Prof. Cheng-Chi Wang
- 15:25 — 15:30 Q&A Time
- 15:40 — 15:50 Group Photo
- 15:50 — 16:50 Tea Break and Networking at Rainbow Room
- 17:10 — 19:00 Banquet at Banquet Hall

**Banquet Hall**

09:30 – 10:50	<b>Poster Session 1 – Best Poster Paper Awards</b> , Reviewed and Selected by All Keynote Speakers, Chaired by Prof. Dr. Michael J. Schöning and Prof. Dr. Chien-Sheng Liu
10:00 – 10:50	Tea Break
1	Chia-Hsin Cheng — <i>Swarm Based Algorithms for Target Localization in Wireless Sensor Networks</i>
2	Chuan-Guei Wang — <i>On The Hard/Soft Antenna Selections for MIMO Sensor Networks</i>
3	Chih-Jer Lin — <i>Active Multi-Modes Vibration Control of PZT Smart Structure using ANFIS</i>
4	Chin-Chia Liu — <i>Numerical Simulation for Nonlinear Longitudinal Fin Heat Dissipation Problems</i>
5	Yi-Zhe Qiu — <i>Development of Polyurethane Tools for NAK80 Mirror Steel Processing</i>
6	Alvin Hoo — <i>Research and Development of Polishing Process of Single Crystal Silicon Carbide (SiC)</i>
7	Chiou-Jye Huang, Min-Chan Hwang — <i>Feedback Linearization Control Design applied to a Mathematical HIV/AIDS Model</i>
8	Chiou-Jye Huang, Min-Chan Hwang — <i>The Stereoscopic Model of a Hexapod Robot</i>
9	Dyi-Cheng Chen — <i>Research on the Optimization of Sole Bonding Process</i>
10	Lianlei Lin — <i>Cosine Distance Spatial-spectral combination Method Based DBN to Classify Hyperspectral Image</i>
11	Shih-Chen Shi — <i>Preparation and tribological properties of nano-metal/nano-oxide added hydroxypropyl methylcellulose composite coating</i>
12	Chia-Chin Chiang — <i>Investigation On High Temperature Characteristics Of Metal-Coated Fbg Sensors</i>
13	Chia-Chin Chiang — <i>The Analysis on the Strain of Underwater Vessel Shocking</i>
14	Chia-Chin Chiang, Chao-Wei Wu — <i>Long period fiber grating sensor graphene oxide coating for humidity sensing</i>
15	Tao-Hsing Chen — <i>Optical and electronic properties of SnO<sub>2</sub>/Ti/SnO<sub>2</sub> multiple thin film for sensor application</i>
16	Wen-Ching Hsieh — <i>Performance Improvement of a SAHAOS as UV Total Dose Radiation Sensor by High temperature annealing treatments</i>
17	Yu-Syuan Wang — <i>Development of Flexible Integrated Microsensor and Application to Proton Exchange Membrane Water Electrolyzer</i>
18	Kuan-Lin Yu — <i>Real-time Wireless Microscopic Diagnosis in Electric Motorcycle Fuel Cell Range Extender</i>
19	Pei-Chi Wu — <i>Application of Flexible Four-in-one Microsensor to Observation on Internal Flow Channel of Vanadium Redox Flow Battery</i>
20	Yi-Cheng Chen — <i>Optical Measurement System for Gear Tooth Surface by Projection Moiré Technology</i>
21	Fulvio Pirazzi — <i>Low Cost Wireless Sensor Network For Monitoring Soil Parameters In Forest by Exploiting Off-The-Shelf and Open Source Hardware</i>
22	Jacek Wojtas — <i>Detection of the trace amounts of nitrogen oxides using laser absorption spectroscopy</i>
23	Jacek Wojtas — <i>Sensor technology for free space optics operated at the wavelength of 8-12 <math>\mu</math>m</i>
24	Lavanya N — <i>A 340-GHz 2x2 CMOS THz Imaging Array Sensor with High-Resistivity Silicon Superstrate</i>
25	Min Sheng Gao — <i>Thermal effect analysis on the radial and axial structure of angular contact ball bearing under preload using FEM</i>

- 10:50 — 11:20 Keynote Speech V : Prof. Gou-Jen Wang — *Biosensors based on nanostructured electrodes* and Chaired by Prof. Dr. Ming-Tsang Lee
- 11:20 — 11:25 Q&A Time
- 11:25 — 11:55 Keynote Speech VI by Asso. Prof. Francisco Falcone — *The Role of Wireless Systems to Enable Context Aware Environments* and Chaired by Prof. Dr. Ming-Tsang Lee
- 11:55 — 12:00 Q&A Time
- 12:00 — 13:30 Lunch Break at Champs Elysees

13:30 — 15:30 **Poster Session 2 — Best Poster Paper Awards**, Reviewed and Selected by All Keynote Speakers, Chaired by Prof. Dr. Yu-Lung Lo

14:30 — 15:30 Tea Break

- 25 Chien-Sheng Liu — *Design of a measurement system for simultaneously measuring six-degree-of-freedom geometric errors of a long linear stage*
- 26 Wei-Yuan Lian — *An IoT-Aided Wireless Gas Sensing System*
- 27 Hye-jin Kim — *Polymeric micelles based on a light-responsive block copolymer for the photo-tunable detection of mercury (II) ions*
- 28 Chang-rae Lee — *Water-Soluble Polymeric Probes for the Selective Sensing of Mercury Ion: pH-Driven Controllable Detection Sensitivity and Time*
- 29 Ping-Shan Lai, Wei-Jhe Syu — *Oxygen Generating Liposomal Nano-formulation for Photodynamic Therapy*
- 30 Ping-Shan Lai, Tzu-Yang Chen — *Improving the in vitro biocompatibility of copper-based nanoparticles for photothermal therapy*
- 31 Ping-Shan Lai — *Polymer-based Oxygen Nanocarrier for Increasing the Efficacy of Photodynamic Therapy in Hypoxia*
- 32 Tomas Horvath, Petr Munster — *Simultaneous transmission of photonic services over one fiber with ITU 100 GHz grid*
- 33 Tomas Horvath, Petr Munster — *Distributed Sensing Based on Interferometry and Polarization Methods for Use in Fiber Infrastructure Protection*
- 34 Yu-Cheng You — *An antenna temperature sensor composed of high quality factor cylindrical dielectric resonator for application in harsh environments*
- 35 Chao-Ching Ho — *Non-coplanar hole angle measurement based on machine vision*
- 36 Chih-Wen Chang — *A New Lie-Group Algorithm for Solving Dodd-Bullough-Mikhailov Equation in Solid State Physics Problems*
- 37 Zhi-Xian Wu, Hau-Wei Lee — *A Three Dimension Measurement System with Two-Tracker Laser Tracking System for improving Accuracy of Robot Arms*
- 38 Hau-Wei Lee — *A Multi-Function and Multi-DOF Optical Probe Using Cross Structured Light*
- 39 David T.W. Lin — *Preparation the flexible vibration film sensor based on lithium niobate(LiNbO3)*
- 40 Jen-Tsai Liu — *A bioink using Sodium carboxymethyl cellulose(CMC) Aqueous solutions for screen-printing to fabricate electrochemical paper-based devices*
- 41 Jen-Tsai Liu — *Online micron-sized particles inspection based on the Coulter Principle*
- 42 Kibae Lee, Miheung Choe — *Noise Reduction Algorithm for Distant Fishing Net Identification*
- 43 Grzegorz Stępień — *Autonomous UAV-Total Station Measuring System (TFS)*
- 44 Guangming Wu — *Building segmentation Through Patch-based Conditional Generative Adversarial Networks*
- 45 Sigfredo Fuentes, Claudia Gonzalez Viejo — *Using non-invasive sensors, robotics and machine learning techniques to assess beer quality: RoboBEER*

46 Jyh-Horng Wen — *Outage performance comparison of cooperative communication w/wo energy harvesting under amplify-and-forward strategy*

**Reminder:**

15:30 — The following time zone separates into 4 Rooms according to sessions:  
Banquet Hall, Room A, Room B and Room C.

**Banquet Hall**

<b>15:30—17:50</b>	<b>Session: Biosensors</b>
<b>Session Chair:</b>	<b>Prof. Dr. Michael J. Schöning</b> , Aachen University of Applied Sciences, Germany <b>Prof. Dr. Gou-Jen Wang</b> , National Chung-Hsing University, Taiwan
15:30—15:50	Invited Speech by Prof. Dr. Michael J. Schöning — <i>Multi-parameter biosensing for monitoring biogas processes</i>
15:50—16:05	Chun-Ping Jen — <i>Development of a Microfluidics Platform for Dectection of Lung Cancer Cells using a Specific Aptamer–modified Gold Substrate</i>
16:05—16:20	Denise Molinnus, Michael Schöning — <i>From macroelectrode to chip-based biosensor for the detection of adrenaline using signal amplification method</i>
16:20—16:35	Huangxian Ju — <i>Bioimaging for In situ Sensing of Cellular Functional Molecules</i>
16:35—16:50	Takashi Kuremoto — <i>The performance of EEG signal classification using hybrid machine learning methods</i>
16:50—17:05	Carl Frederik Werner — <i>Microwell-based microfluidic device to estimate the living cell concentration</i>
17:05—17:20	Sigfredo Fuentes, Claudia Gonzalez Viejo — <i>Non-invasive methods to assess heart rate and blood pressure using video analysis through computer vision and machine learning algorithms</i>
17:20—17:35	Juyeon Kim — <i>Analysis algorithm for vital signal detection based on Doppler radar sensor system</i>
17:35—17:50	Mehran Khorshid — <i>Surprisingly strong thermal insulation effect of self-assembling thiol monolayers at gold-ethanol interfaces</i>

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**ROOM A**

<b>15:30—17:00</b>	<b>Invited Session: ICI2018 Annual Meeting</b>
<b>Session Chair:</b>	<b>Prof. Dr. Cheng-Chi Wang</b> , National Chin-Yi University of Technology, Taiwan
15:30—15:45	Chao-Chung Peng — <i>Development of a Robotics Grasping Control Strategy Based on a Moving Platform</i>
15:45—16:00	Shang Yuan CHEN — <i>Use of Multi-agent theory to resolve complex indoor air quality control problems</i>
16:00—16:15	Quang-Cherng Hsu — <i>Development on Automatic Optical Measurement System for Ring-Shaped Workpiece Contour with Economical Cost and High Performance</i>
16:15—16:30	Yen-Ta Chiang — <i>Time-domain signal synthesis of the insert earphone using deep neural network</i>
16:30—16:45	Chi-Hua Yang — <i>Kinematics parameters calibration and motion command compensation for 6-DOF robotic manipulator</i>
16:45—17:00	Kuo-Lung Wang — <i>Landslide seismic and tilting behavior sensor design with MEMS accelerometer</i>

## ROOM B

**15:30—17:00** **Invited Session: Applications of Wireless Sensor Network and Communication, Optical Sensors and Materials, Sensors for Smart Spindle**

**Session Chair:** **Prof. Young-Long Chen**, National Taichung University of Science and Technology, Taiwan  
**Prof. Yuh-Chung Hu**, National ILan University, Taiwan

15:30—15:45 Young-Long Chen — *Combined PSO with FLC for Load Balancing in Dual-Radio Opportunistic Networks*

15:45—16:00 Mu-Yen Chen — *A Mountain Rescue System based on Radio Communication Technology*

16:00—16:15 Rex Xiao Tan — *Bragg Grating Inscribed C-Shape Optical Fiber for Temperature and Strain Insensitive Refractive Index Sensing*

16:15—16:30 Young Jin Yoo — *Ultra-thin porous films for colorimetric detection with highly absorbing media*

16:30—16:45 Guan Yu Chuang — *Sensor for Smart Spindle Incorporated with SkyMars*

16:45—17:00 Kai-Siang Lan — *Wireless Charging and Communication Modules for Smart Spindle*

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## ROOM C

**15:30—18:00** **Session: Physical Sensors, Chemical Sensors**

**Session Chair:** **Prof. Dr. Bahram Nabet**, Drexel University, USA  
**Prof. Dr. Vladimir M. Mirsky**, Brandenburg University of Technology Cottbus-Senftenberg, Germany

15:30—15:45 Xiangyang Zhou — *Control System Design Of A Light And Small Pan-Tilt For Multirotor UAV*

15:45—16:00 Ahmed Almassri — *Wearable Robotic Glove For Hand Rehabilitation Based On Real Time Pressure Measurement System*

16:00—16:15 Ha-Neul Lee — *Flexibility sensor using ring oscillator on the flexible substrate*

16:15—16:30 Shuyang Ding — *Identification of fabric material properties in vibration spectrum analysis compared to human sensing*

16:30—16:45 Cheng-Hsin Chuang — *A Novel Flexible Triboelectric Nanogenerator utilizing Electrospun PVDF Nanofibers as Self-Powered Active Force Sensor*

16:45—17:00 Cheng-Hsin Chuang — *Transparent and Flexible Tactile Sensor based on Triboelectric Transduction for Smart Skin of Robot*

17:00—17:15 Xiaoqing Zhang — *Flexible Fluorinated Ethylene Propylene Ferroelectrets with Parallel Tunnel Structure and Their Application in Sensors*

17:15—17:30 Hector Andrés Tinoco — *Monitoring of Bone-structural Changes with a Piezo-actuated Teeth Sensor by Applying Electromechanical Impedance Technique*

17:30—17:45 Dmitry Kirsanov — *Development of multisensor arrays for monitoring of spent nuclear fuel reprocessing*

17:45—18:00 Hoang Anh Truong, Carl Frederik Werner — *A chemical imaging sensor with multi-well structure for high-throughput analysis*

18:30— Dinner at Champs Elysees

**Reminder:**

09:30 — The following time zone separates into 2 Rooms according to sessions: Room A and Room B.

**ROOM A**

**09:30 — 12:15**    **Session: Sensors Application**  
**Session Chair:**   **Dr. Debbie G. Senesky**, Stanford University, USA

- 09:30 — 09:45    Lin Sheng-Yao — *A Reliability Study on Thermal Shock and Resistance in Sensor Sheet Film*  
09:45 — 10:00    Shi-Wei Lo — *Using CCTV as a Ranging Sensor : A Trial Note*  
10:00 — 10:15    Yean-Der Kuan — *Design of Battery Charger Prototype for Recharging Battery of Tire-Pressure Sensor*  
10:15 — 10:30    Yin Wang — *A Quantum Cascade Laser based NH<sub>3</sub>/NO Sensor for Flue Gas Denitrification (DeNO<sub>x</sub>) Process Optimization*  
10:30 — 10:45    Chao-Ching Ho — *Deep learning based automated defect inspection for highly reflective and curved metal surface*  
10:45 — 11:00    Guangming Wu — *Building Detection via Capsule Networks*  
11:00 — 11:15    Jiu Huang — *Study on Optimization of Visual-Acoustic Sensor Aided Sorting Efficiency on Automotive Shredder Polymer Residues Using 3D-Imaging Circularity Determination*  
11:15 — 11:30    Dmitry Kirsanov — *Distinguishing urine samples from patients with prostate cancer using potentiometric multisensor system*  
11:30 — 11:45    Songsheng Li — *A Smart Pillow for Health Sensing System Based on Temperature and Humidity Sensors*  
11:45 — 12:00    Jie Wang — *Nitrogen Management Based on Visible/near Infrared Spectroscopy in pear orchards*  
12:00 — 12:15    Jr-Rung Chen — *Circular Testing on Rotatory of Machine Tool by Using Auto-Tracking Laser Interferometer (ATLI)*

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**ROOM B**

**09:30 — 11:30**    **Session: IoT Sensor and Application, Sensor Networks**  
**Session Chair:**   **Prof. Dr. Gianluigi Ferrari**, University of Parma, Italy  
                          **Prof. Dr. Francisco Falcone**, Universidad Publica de Navarra, UPNA, Spain

- 09:30 — 09:45    Ju-Hee Son — *Analysis of the CMOS Plasmon Detector using the Equivalent Circuit Model*  
09:45 — 10:00    Cheng-Xuan Li — *IoT Sensor for Image Recognition Applications*  
10:00 — 10:15    Bo-Yoon Yoo — *Waveguide-type circulator for high-power microwave transmitter of the non-destructive detection system*  
10:15 — 10:30    Jahoon Koo, Young-Gab Kim — *Interoperable Device Identification System for IoT Sensors*  
10:30 — 10:45    Jin-Yong Yu, Young-Gab Kim, Se-Ra Oh — *Security Requirements for IoT Sensors*  
10:45 — 11:00    Se-Ra Oh, Young-Gab Kim — *Design and Implementation of RBAC-based Access Control Framework for IoT platforms*  
11:00 — 11:15    Jui-Hung Liu — *Wind Farm Monitoring System Development with external Communication Networks*  
11:15 — 11:30    Shi Binbin — *A Novel Energy Efficient Topology Control Scheme Based on a Coverage-Preserving and Sleep Scheduling Model for Sensor Networks*  
12:00 — 13:30    Lunch Break at Champs Elysees  
13:30 —            End of the Conference