

# IEICE Korea Section (Electronics)

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**Daegu, Korea**

## 1. ICT R&D environment in Korea

Research-oriented universities, government-supported research institutes and leading ICT companies in Korea are actively involved in the R&D of following themes.

- (1) IT convergence : Creating more IT convergences in shipbuilding, energy, automobiles, medicine, textile, machinery, aerospace, construction, defense, and robotics.
- (2) Software : Assisting domestic companies in becoming global companies in IT services and package software.
- (3) Hardware : Maintaining the global market share in major items such as memory, handset and TFT LCD and encouraging to develop other IT hardware items.
- (4) Broadcasting and communications : Providing the best quality broadcasting and communication services and activating the markets of WiBro, IPTV and 3D TV in the early stage.
- (5) Internet : Constructing UBcN (ultra broadband convergence network) and the best information security server and developing necessary hardwares and softwares for Internet of Things (IoT).

## 2. Introduction of academic activities

A lecture meeting on “Recent Progress of CMOS Image Sensors and Their Future Prospects” will be held on March 14 in 2016 at Kyungpook National University in Daegu, Korea. Professor Shoji Kawahito of Shizuoka University will be invited to give a talk at the lecture meeting. Professor Shoji Kawahito is one of IEICE members and was an Editor for the IEICE Transactions on Electronics. He is a Fellow of IEEE and is well known as an expert in the field of image sensors. This special field has been discussed in many international conferences over the past twenty years to develop high sensitivity, low power and wide dynamic range image sensors. It is expected that the lecture meeting will give a motivation for research activities in the special field to the members of the section or encourage their current academic activities. Additionally, since CMOS image sensors have also been studied for a long time in Kyungpook National University which is selected as the venue, the lecture meeting participants can visit the laboratories and exchange opinions. Thus, the lecture meeting will be a valuable opportunity for the general participants to discuss or learn about the recent progress of the technologies. The lecture meeting will be announced to the members of the section and it is expected to give them a chance to join IEICE activities.

## 3. Organization and role assignment of IEICE Korea-Electronics Section

Representative : Prof. Jang-Kyoo Shin  
(Kyungpook National University, Daegu, Korea)  
- Planning of activities, general affairs

Secretary : Prof. Seong-Ho Kong  
(Kyungpook National University, Daegu, Korea)  
- Financial affairs, promoting activities

## 4. Strategy to extend the membership

In order to extend the membership and increase the number of members, following strategies are proposed.

- (1) Lecture meeting will be co-sponsored with the IEIE (the Institute of Electronics and Information Engineers) in Korea, so that many members of IEIE will be encouraged to join IEICE.
- (2) IEICE Korea-Electronics section members will be encouraged to submit papers to IEICE Transactions by introducing special issues to them.

## 5. Plan of themes for the lecture sponsored by IEICE

Themes for the lecture sponsored by IEICE in 2016 are as follows.

- (1) Wide dynamic range CMOS image sensors
- (2) Smart sensor devices and systems for IoT
- (3) Nano materials and devices
- (4) Nanoplasmonics

## 6. Preferable topics to collaborate with ten regional Sections in Japan

Collaborations with Tokai section in Japan in the form of joint research and student/faculty exchange are already on-going. Preferable topics of collaboration are as follows.

- (1) Development of high performance CMOS image sensors  
- Shizuoka University (Prof. Shoji Kawahito)
- (2) Development of intelligent sensor systems  
- Toyohashi University of Technology (Prof. Kazuaki Sawada)

# Annual Activity Report of IEICE Korea-Electronics Section

Date of Report : 17 March 2016

Reporter : Jang-Kyoo Shin, Prof., Dr., Kyungpook National University

## 1. Organization

Assembly of the Section

├── Members of the Section

└── Rep. Office ─┬── Rep. : Jang-Kyoo Shin, Prof., Kyungpook National University  
                  └── Secretary : Seong-Ho Kong, Prof., Kyungpook National University

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## 2. Strategy of the Section

In order to extend the membership and increase the number of members, lecture meeting will be co-sponsored with the IEIE (Institute of Electronics and Information Engineers) in Korea, so that many members of the IEIE will be encouraged to join the IEICE. Also. members of IEICE Korea-Electronics Section will be encouraged to submit papers to IEICE Transactions by introducing special issues to them.

## 3. Action Plan of the Section Stated in 2015 All Sections Meeting

A lecture meeting sponsored by IEICE was planned in the area of time of flight CMOS image sensor, nano materials and devices, multimodal smart sensor, and nanoplasmonics

## 4. Results of Activities during the 2015 Fiscal Year (April 2015 ~ March 2016)

### 4.1 Conference/Symposium/Workshop : None

### 4.2 Sponsored Lecture

A lecture meeting on “Recent Progress of CMOS Image Sensors and Their Future Prospects” will be held on March 14 in 2016 at Kyungpook National University in Daegu, Korea. Professor Shoji Kawahito of Shizuoka University in Japan will be invited to give a talk at the lecture meeting. Members of IEICE Korea-Electronics Section and graduate students will be encouraged to attend the lecture meeting. It will be a valuable opportunity for the general participants to discuss or learn the recent progress of the technologies.

### 4.3 The other events in collaboration with IEICE Hqs or Domestic Sections : None

### 4.4 Improvement of the Section

Representative and secretary of the Section will be replaced by new members who will try to expand and improve the Section.

## 5. Review and Future Plan

- (1) Items in 2015 Fiscal Year Plan which could not be achieved, and expected solution
- (2) Activity Plan in 2016 Fiscal Year

A lecture meeting will be held with a theme in the area of wide dynamic range CMOS image sensor, smart sensor devices and systems for IoT, nano materials and devices, and nanoplasmonics.

## 6. Constructive Opinion / Requests / Proposals