

Speaker:

Prof. Akihiko Fujiwara, Kwansai Gakuin University, Japan

Speech Title:

Development of Materials and Device for Sustainable Energy in ICT and IoT Society.

Abstract:

Demands of information and communication technology (ICT) and internet of things (IoT) societies for high-performance materials and devices has increased more and more. Along with the spread of ICT/IoT, reduction of energy consumption and efficient use of renewable energy is also required for sustainable society. This requirement is not only limited to energy consumption during device operation, but also expanded to energy and materials consumption at the production process. The examples of research targets are high-performance secondary battery cathodes and printable amorphous oxide semiconductors. The former is an organosulfur polymer which shows high capacity due to the formation/scission of the disulfide (S-S) bond as the charge/discharge processes, and has now been investigated for photo-charging battery. The latter is doped indium oxides fabricated by solution processes, and has now been investigated for printed thin-film transistors. The latest results will be introduced at the conference.

Biography:

Prof. Akihiko FUJIWARA gained his Ph.D in 1995 from Tohoku University in Japan. He worked at Department of Physics in the University of Tokyo as a Research Associate (1995 – 2001), at School of Materials Science in Japan Advanced Institute of Science and Technology (JAIST) as an Associate Professor (2001 – 2010), and at Japan Synchrotron Radiation Research Institute (JASRI/SPring-8) as a Chief Scientist (2010 – 2015). From 2015, he has been a Full Professor at Department of Nanotechnology for Sustainable Energy in Kwansai Gakuin University. Beside the above primary research position, he was a Visiting Professor at Department of Physics in Tohoku University and at JAIST. His main research interests are experimental condensed matter physics focusing on oxide semiconductor devices and secondary battery materials for sustainable development.