



## DAICENTER TECHNOLOGY Hub (DAITECH) *Workshop Series 01*

**Title: Merger of Mortalin and DEPSOR Technologies - Addressing Novel Application of Electrochemical Methods for Biosensing of Stress and Disease States**

**Date:** Sept 3, 2019

**Venue:** DAILAB, Biomedical Research Institute  
National Institute of Advanced Industrial Science & Technology (AIST)  
Central 5-41, 1-1-1 Higashi, Tsukuba, Ibaraki - 305 8565, Japan

Development of integrated electrochemical nano-bio sensors are of paramount importance relies on their relative simplicity. The unique combination of hardware (i.e., Disposable Electrochemical Printed (DEP) chip and a palm-sized potentiostat), software (i.e., smartphone-supported programming to perform on-site voltammetry analysis) and wetware (i.e., evolutionary molecular engineered bio-probes) elements of high-performance sensor, which are easy to integrate into diverse applications, make DEPSOR system extremely portable and affordable with application-ready signal outputs in resource-limited settings. These features of DEPSOR and their extension to quantitate Mortalin protein (established to be upregulated in stressed and diseases conditions including metal pollution, liver cirrhosis and cancer) in biological materials by using unique antibody combinations will be presented and demonstrated in this workshop.

### **Program:**

- 13:25 Opening Address (Y. Onishi, Director, Biomedical Research Institute, AIST)
- 13:30 Introduction of DEPSOR: Concept and Application from Food to Environmental Monitoring (M. Biyani, Professor, JAIST & CEO, BioSeeds)
- 14:00 Development of Amyloid-detecting DEPSOR (R. Biyani, JAIST)
- 14:15 Development of DNA-detecting DEPSOR (H. Rathore, JAIST)
- 14:30 Development of Single-cell mRNA Analysis using TFT Arrays (R. Bhardwaj, JAIST)
- 14:45 Mortalin - A New Biomarker for Water Pollution (R. Wadhwa, AIST)
- 15:15 Development of Mortalin-detecting DEPSOR (K. Sharma, JAIST)
- 15:30 Tea Break & Networking
- 16:00 DEPSOR Workshop: Hands-On Training
- 18:00 Concluding Remarks (Y. Ohmiya, AIST) followed by Dinner

**Participation: Free (Please contact [s-kaul@aist.go.jp](mailto:s-kaul@aist.go.jp))**