



Department of Biotechnology
Ministry of Science and Technology
Government of India

DBT



National Institute of
Advanced Industrial Science
and Technology

AIST

DBT - AIST International Laboratory for Advanced Biomedicine

DAILAB

Classroom for Advanced & Frontier Education CAFE

DAILAB-CAFE

Series - 006

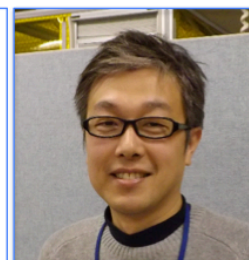
Date and Time - December 19th, 2014 (16:00~17:00)

Venue - Central 4 (5F) Room 5105

Speaker – RYOJI KURITA

Affiliation – National Institute of Advanced Industrial Science and Technology (AIST), Japan

E-mail: r.kurita@aist.go.jp



Title - Electrochemiluminescence and Surface Plasmon Resonance-based Immunosensors for Bio-Medical Applications

Various new microfluidic devices have been proposed to measure a trace level of biomolecules quickly for a usage in the medical and biochemical research fields. I have focused on an electrochemical and a surface plasmon resonance (SPR) techniques as a platform for the microfluidics development. One important feature of both techniques is the surface analysis at the solid-liquid interface. Electrochemical reaction occurs only at an electrical double layer (approx. 1 nm on an electrode surface), and SPR angle is affected in the evanescent field (approx. 100 nm on a metal surface). This feature is suitable to utilize high surface-to-volume ratio characterizing the microfluidic analysis, and advantageous for a quick measurement with high sensitivity.

I will talk about our new methods, materials and microfluidics to improve the analytical performance, especially an immunochemical determination of disease markers and DNA methylation by the electrochemical and SPR-based techniques.



***DAILAB- CAFÉ 006
Dec 19, 2014***



DAILAB-CAFE

Series - 006
Date and Time - December 19th, 2014 (2:00pm-4:00pm)
Place - DAILAB (2F, Room 102)
Topic - **DR. KURITA**
Abstract - Electrochemiluminescence and Surface Plasmon Resonance-based Biosensors for Bio-Medical Applications

Title - Electrochemiluminescence and Surface Plasmon Resonance-based Biosensors for Bio-Medical Applications

Various new microfluidic devices have been prepared to measure a trace level of biomolecules quickly for a range in the medical and biochemical research fields. I have focused on an electrochemical and a surface plasmon resonance (SPR) technique as a platform for the microfluidic development. The important factors of both techniques is the surface analysis at the solid-liquid interface. Electrochemical reaction occurs only at an electrode double layer (approx. 1 nm) on an electrode surface, and SPR angle is affected in the evanescent field (approx. 100 nm) on a metal surface. This feature is suitable to analyze high surface-to-volume ratio characterizing the microfluidic analysis, and advantageous for a point measurement with high sensitivity. I will talk about our new methods, materials and microfluidics to improve the analytical performance, especially on immunochemical determination of disease markers and DNA recognition by the electrochemical and SPR-based techniques.

Dear Dr Kurita
Thanks very much for being DAILAB-CAFÉ 006 Speaker.
We very much enjoyed your talk !
We do hope to collaborate with you and learn from you.
Best wishes for the coming year
DAILAB

