



Department of Biotechnology
Ministry of Science and Technology
Government of India

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National Institute of
Advanced Industrial Science
and Technology

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DBT - AIST International Laboratory
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DAILAB-CAFE

Series - 31

Date and Time: October 5, 2018 (3:30 JST)

Venue: Central 5-41 2F (Meeting Room #1)

Speaker: **SHUNSUKE TOMITA**

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

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Title: Pattern-Based Sensing of Bioanalytes by Arrays of Cross-Reactive Polymeric Materials

Conventional approaches to analyze bioanalytes are based on well-designed specific recognition pairs, such as antigens and antibodies. As a prospective alternative to conventional methods, array-based sensing has recently been proposed, which exploits the pattern-recognition of unique optical patterns for individual bioanalytes. Optical patterns are acquired using arrays of “cross-reactive” materials that can interact in different ways with target bioanalytes. We have developed various polymeric materials that can be used for array-based sensing of bioanalytes. For example, polyethylene glycol/poly-L-lysine block-copolymers functionalized with fluorescein and hydrophobic amino acids affords fluorescent response patterns unique to proteins and cells. Multivariate analysis on the patterns obtained with an array consisting of solely three block-copolymers allows identifying, e.g., 20 proteins and 10 mammalian cells individually. This versatile sensing system is expected to offer a powerful platform for simple and high-throughput sensing of a wide variety of bioanalytes.

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Date: 5th October 2018
(15 30-16: 30 h (JST))
Host: AIST, Japan

Thanks for participation!

AIST, Japan



Hanyang Univ., South Korea



IIT-Delhi

Brawijaya Univ.,
Indonesia

Manipal Univ. India



GNDU, India