

学術変革Bスケール横断分析セミナー

第80回「工学とバイオ」セミナー / MMCもしかする未来の化学

Optical Modulation Biosensing: A Platform for Ultra-Sensitive and Rapid Biomarker Detection

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Abstract :

Fluorescence-based immunoassays are widely used in diagnostics and research, but their performance is often limited at low analyte concentrations due to high background noise. To address this challenge, my laboratory has developed Optical Modulation Biosensing (OMB), a novel platform technology that employs temporal modulation of the fluorescence signal to achieve highly sensitive detection with minimal background interference. OMB has been successfully applied in diverse contexts, including infectious disease diagnostics, cardiotoxicity biomarker monitoring, and cultivated meat production. In this talk, I will present the principles of OMB, demonstrate its application across several case studies, and discuss its potential for translation into point-of-care diagnostics and clinical use.



学術変革領域研究(B)
スケール横断分析
Cross-scale Analysis



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