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High Throughput Isolation of Extracellular Vesicles from Whole Blood and Culture Media using High Resolution Dean Flow Fractionation

*WanWei Lok, Sheng Yuan Leong, Hong Boon Ong, Hui Min Tay, Chengxun Su, Fang Kong, Megha Upadya, Wei Wang, Enkhtuya Radnaa, Ramkumar Menon, Ming Dao, Rinkoo Dalan, Subra Suresh, Han Wei Hou*

Real-Time Intracellular Oxygen Monitoring within Microfluidic Devices Using Widefield Frequency Domain Fluorescence Lifetime Imaging Microscopy (FD-FLIM)

*Hsiao-Mei Wu, Wei-Jen Chang, Tse-Ang Lee, Yi-Chung Tung*

Active Control of DNA Condensates in Monodisperse GUVs Induced by Osmotic Action

*Ryotaro Yoneyama, Ryota Ushiyama, Tomoya Maruyama, Masahiro Takinoue, Hiroaki Suzuki*

The influence of ECM contacts on the collective mechanosensing of glioma spheroid

*Chih-Tung Liu, Ping-Chen Kuo, Meng-Ling Chiang, Megha Jhunjunwala, Rong-Shing Chang, Chi-Shuo Chen Chen*

Functionalized ZnO Nanowires for Biosensing Applications 214

*Bruce Kim, Anurag Gupta, jeong Lee, jong Park*

## F2-A: Biomicrofluidics and Bioprinting IV N/A

Electro-Mechano-Phenotyping of Single Leukocytes for Label-Free Immunoprofiling

*Han Wei Hou*

Metabolic glycoengineering enables optomicrofluidic detection of cancer cells in peripheral blood,

*Ashis Kumar Sen*

Cellular behaviors in spherical micropores

*Keng-hui Lin*

Intelligent droplet screen for high-throughput single-cell level tumor profiling on extracellular matrix

*Chia-Hung Chen*

DonnSynthetic Biomaterials for Stem Cell Morphogenesis and Drug Delivery

*Donny Hanjaya-Putra*

## F2-1: Nanomaterials and Nanodevices for Healthcare Applications I

N/A

Four-Dimensional Printing of Smart NanoBiomaterials

*Amit Nain*

State-of-the-Art Wound Dressing Synergistically promotes Healing by Piezoelectric and Photothermal Functionalities

*Anindita Ganguly*

Multimodal Flexible Sensors for Simultaneously Discriminating Temperature and Pulse/Touch

*Fang Yi*

Negative Impedance Capacitive Electrode-based Non-contact ECG Sensor

*Ting-Wei Wang*

Development of Microfluidic Device for Blood Coagulation Time Measurement

*Yu-Ju Fan*

## F2-2: Bio/Nano sensing & Biochips and Bio-MEMS II

N/A

Development of a Sampling Method for Single Nanoparticles Utilizing Hierarchical Nanofluidic Channels

*Rina Kakiuchi, Yutaka Kazoe*

LAMP-on-Chip Platform for Rapid Detection of SARS-CoV-2

*Dhrubajyoti Das, Cheng-Wen Lin, Han-Sheng Chuang*

Detection of Topoisomerase Activities via Rotational Brownian Motion of a Designed DNA Nanosensor

*Ymir Garcia, Joane Christel Peralta, Jillian Dwayne Pascua, Megan Yi-Ping Ho, Han-Sheng Chuang*

Integrating Hydrogel Microfluidics for Combined Anti-Cancer Drug Therapy and Screening

*Yu-Ting Lin, Kin Fong Lei*

Paper-based Bone-on-a-Chip Platform for Analysis of Cellular Crosstalk and Molecular Signaling during Bone Healing Process

*YUN-WEN TONG, Kin Fong Lei*

## F2-3: Bio/Nano sensing & Biochips and Bio-MEMS III

Behavior of low viscosity liquid films under Surface Acoustic Waves

*Niladri Satpathi, Lokesh Malik, Subhas Nandy, Leslie Yeo, Ashis Sen*

Developing Multifunctional Biosensing Colloidal Clusters from Aptamer-Functionalized Particles

*CHUN JUI CHEN, Han-Sheng Chuang*

Multiplex Detection of Respiratory Viruses via Rapid Nucleic Acid Amplification Enabled by Rotational Diffusometry

*Ying Lin, Han-Sheng Chuang*

Design and Implementation for Water Sensing System of Unmanned Surface Mobile Vehicle

*Tay-Wen Gong, Yu-Sheng Tu, Ming-Hung Lin, Wan-Ling Yang, Cheng-Yi Chen, Wen-Ping Chen*

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## F3-A: Biomicrofluidics and Bioprinting V

N/A

Smart Microgel-Well System 3D Cell Culture System for Dynamic High-Throughput Drug Screening

*Yichun Wang*

Programming physical cues in 3D bioprinted constructs to direct cell function

*Khoon S Lim*

Constructing Hydrogel Constructs with Embedded Vascular Networks and Anisotropic Mechanical Properties by Digital light processing (DLP) bioprinting for In Vitro Tissue Models

*Tiantian Kong*

4D quantification of cells in a turbulent watery world with light

*Woei Ming Lee*

High-throughput label-free profiling of bioprinted aptamer-protein binding by a metallic nanostructure-based microfluidic surface plasmon imaging technique

*Chia-Fu Chou*

### F3-1: Nanomaterials and Nanodevices for Healthcare Applications II

N/A

Wireless Self-Powered Healthcare Sensors

*Yannan Xie*

A Triboelectric Nanogenerator-based Sensor System for Gait-phase Monitoring and User Identification

*Parag Parashar*

Electrically Modulating Immune Responses for Diabetic Wound Healing

*Snigdha Roy Barman*

Optogenetics Therapeutic Strategies for Modeling Neuro-Cardiac Diseases

*Yen-Ling Sung*

Atomic Insights into the Catalytic Activity and Reaction Specificity of CeO<sub>2</sub>-based Nanozymes for Antibacterial Applications

*Yung-Kang Peng*

### F3-2: Bio/Nano sensing & Biochips and Bio-MEMS IV

Silver Nanowires Embedded Ruthenium Complex Based Infrared Thermal Sensors

*Shah Fahad, Song Li, Yufei Zai, Min Wang*

A novel antifouling layer for cardiac troponin I detection in a blood sample

*Jakkrapatr O.Baiyokvichit, Yu Chen, Jung Huang*

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PCB-based Mass-produced EGFET pH Sensor with Electroplated Reference Electrode for Daily Saliva Acidity Monitoring in Mouth

*Lin Che-Hsin, Hsiang Wang, Kao Wei-Sin, Dai-En Li*

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