



## Poster Spotlight Presentations

\*award nominee

<b>M1A-101.a</b>	FLOW THROUGH TARGET BACTERIA CAPTURE, LYSIS AND DNA EXTRACTION USING MAGNETIC CLOUDS
<b>M1A-107.a*</b>	MICROFLUIDIC PRODUCTION OF COLLAGEN SHEET-BASED CELL ENVELOPE FOR FLOATING SANDWICH CULTURE OF HEPATOCYTES
<b>M1A-110.a</b>	18F-FLUORODEOXYGLUCOSE IMAGING OF TUMOR-ON-A-CHIP
<b>M1A-113.a*</b>	REAL-TIME GUIDED AXON OUTGROWTH OF PRIMARY MOUSE HIPPOCAMPAL NEURONS ACTIVATED BY FEMTOSECOND LASER PULSES IN MICROFLUIDIC DEVICE
<b>M1A-119.a</b>	MICROFLUIDIC METHODOLOGIES FOR PRODUCTION OF SMALL-SIZED VARIOUS ARTIFICIAL EXOSOMES
<b>M1A-122.a</b>	ENGINEERED HABITATS FOR IN SITU CHEMICAL MONITORING AND VISUALIZATION OF POPULUS ROOT DEVELOPMENT
<b>M1A-125.a*</b>	MICROFLUIDIC PLATFORM FOR THE STUDY OF MULTIMODAL SENSORY INTEGRATION BASED ON IN VIVO FUNCTIONAL IMAGING OF CAENORHABDITIS ELEGANS
<b>M1A-128.a</b>	MICROFLUIDIC PATTERNING OF CHONDROCYTES AND OSTEOBLASTS WITH LOCALISED OXYGEN CONTROL
<b>M1A-131.a*</b>	ENGINEERED FUNCTIONAL 3D MICROVASCULATURE-ON-CHIP TO STUDY LEUKOCYTE ENDOTHELIUM INTERACTION AND VASCULAR INFLAMMATION
<b>M1A-143.a*</b>	CAMERA-FREE HIGH-THROUGHPUT SINGLE-CELL INTRINSIC MECHANICAL CHARACTERIZATION UTILIZING IMPEDANCE FLOW CYTOMETRY
<b>M1A-155.b*</b>	MICROFLUIDIC IN VITRO MODELS FOR STUDYING CIRCULATING TUMOR CELLS FATE IN THE MICROVASCULATURE
<b>M1A-158.b*</b>	MICROFLUIDIC CELL SHEARING ENABLES HIGHLY EFFECTIVE MACROMOLECULE INTRACELLULAR DELIVERY
<b>M1A-161.b*</b>	CELL SPHEROID MODELS IN 3D-PRINTED AGAROSE MICROWELLS FOR DRUG RESPONSE STUDIES
<b>M1A-164.b*</b>	ULTRA-RAPID REAL-TIME MICROFLUIDIC POLYMERASE CHAIN REACTION INSTRUMENT FOR CLINICAL AND FORENSIC APPLICATIONS
<b>M1A-167.b*</b>	A MICROFLUIDIC ANTIBIOTIC CONCENTRATION GRADIENT GENERATOR INTEGRATING SURFACE-ENHANCED RAMAN SPECTROSCOPY FOR MULTIPARALLEL ANTIMICROBIAL SUSCEPTIBILITY TESTING
<b>M1A-176.b*</b>	DETECTING CARDIOVASCULAR BIOMARKERS BY USING AN INTEGRATED RFID BIOSENSING SYSTEM
<b>M1A-179.b*</b>	PREVENTION OF EVAPORATION IN FEMTOLITER-SCALE WATER-IN-AIR DROPLET GENERATION FOR DIGITAL COUNTING OF BIOMOLECULES
<b>M1A-182.b*</b>	ULTRASENSITIVE AND RAPID DETECTION OF COVID-19 VIRUS USING DUAL-CLAMPED SURFACE-ENHANCED-RAMAN-SCATTERING NANOSENSORS
<b>M1A-185.b*</b>	MICRODROPLET-BASED PHOTOOXIDATION-INDUCED FLUORESCENCE AMPLIFICATION (PIFA) TO ENHANCE THE SIGNAL OF IMMUNOASSAY FOR COVID-19 ANTIGEN TEST
<b>M1A-191.c*</b>	DUALLY CONNECTED DOUBLE-CAPILLARY DEVICE FOR FABRICATING VASCULATURE-MIMETIC MICROTUBES
<b>M1A-194.c*</b>	A CENTRIFUGAL MICROFLUIDIC METHOD FOR ENRICHMENT AND ENZYMATIC EXTRACTION OF SARS-COV-2 RNA FROM CLINICAL SAMPLES
<b>M1A-197.c*</b>	HIGH VIABILITY TRANSFECTION OF MAMMALIAN CELLS USING TRI-DROPLET ELECTROPORATION ON DIGITAL MICROFLUIDICS
<b>M1A-203.c*</b>	MICROFLUIDIC DROPLET REACTOR FOR ARTIFICIAL ORGANELLE GENERATION
<b>M1A-206.c*</b>	THEORETICAL, COMPUTATIONAL AND EXPERIMENTAL CHARACTERIZATION OF SHEAR-DEPENDENT MICRO-VORTICES IN LIQUID—LIQUID FLOW-FOCUSING GEOMETRY



<b>M1A-209.c*</b>	ASSEMBLY AND PURIFICATION OF DNA STRUCTURES IN AQUEOUS-AQUEOUS TWO-PHASE EMULSION
<b>M1A-218.d*</b>	INFERENCE OF THE FORMATION PROCESS OF LIPID NANOPARTICLES FROM THE VIEWPOINT OF INTERPARTICLE DISTANCE
<b>M1A-230.d*</b>	ON-CHIP ANALYSIS OF SWINE RESPIRATORY VIRUSES USING MAGNETIC NANOPARTICLE-ENHANCED PHOTONIC CRYSTAL BIOSENSOR
<b>M1A-242.e*</b>	DEFORMABLE 3D-PRINTED SOFT MICROFLUIDIC DEVICES
<b>M1A-245.e*</b>	INTEGRATED 3D PRINTED ISOPOROUS MEMBRANES WITH 7 $\mu$ M PORES
<b>M1A-254.e</b>	MOLD-FREE FABRICATION OF HETEROGENEOUS HYDROGEL MICROSTRUCTURES USING A STEREOLITHOGRAPHIC BIOPRINTER
<b>M1A-260.e*</b>	RECONSTRUCTION OF 3D VASCULARIZED TUMOR MICROENVIRONMENT AND DRUG SCREENING IN MESH-STRUCTURED MICROFLUIDIC PLATFORM

<b>M1B-108.a*</b>	MASS PRODUCTION AND SELECTIVE MANIPULATION OF SPHEROIDS USING THE INTEGRATION OF HANGING DROP MICROARRAY AND DROPLET CONTACT-BASED SPHEROID TRANSFER
<b>M1B-129.a*</b>	A MULTICHANNEL PERFUSABLE KIDNEY-ON-A-CHIP TO STUDY THE DYNAMICS OF CYST FORMATION IN POLYCYSTIC KIDNEY DISEASE
<b>M1B-132.a*</b>	RECAPITULATING DENDRITIC CELL CHEMOTAXIS TOWARD LYMPHATIC VESSEL USING IN VITRO HUMAN 3D INFLAMMATION MODEL
<b>M1B-144.a*</b>	3D SINGLE CELL TOMOGRAPHIC IMAGING FOR REFRACTIVE-INDEX BASED CELLULAR CHARACTERIZATION
<b>M1B-165.b*</b>	MINI: AN ENERGY-FLEXIBLE POINT-OF-CARE DEVICE FOR HIGH-THROUGHPUT SCREENING
<b>M1B-168.b*</b>	DEVELOPMENT OF AN AUTOMATED, POINT-OF-CARE DIAGNOSTIC ASSAY FOR RAPID DETECTION OF BORDETELLA SPP.
<b>M1B-183.b*</b>	VALVE-ENABLED SEQUENTIAL REAGENT DELIVERY AND PAPER-BASED ENRICHMENT FOR SIMULTANEOUS DETECTION OF SARS-COV-2 AND INFLUENZA VIRUSES
<b>M1B-198.c*</b>	CORE-SHELL HYDROGEL PARTICLES WITH TUNABLE POROSITY FOR DIGITAL NUCLEIC ACID ASSAYS
<b>M1B-201.c*</b>	DROPLET MICROFLUIDICS FOR STUDIES OF BACTERIAL GENETIC TRANSFORMATION IN STREPTOCOCCUS PNEUMONIAE
<b>M1B-213.c*</b>	IMPROVING THE COVERAGE AND STABILITY OF MICROCHANNEL SURFACE COATINGS USING AUTOMATED ZETA POTENTIAL ANALYSIS
<b>M1B-216.c*</b>	KINETIC ENHANCEMENT OF RECEPTOR-LIGAND INTERACTIONS IN MODULAR GLASS MICROFLUIDIC BIOASSAY DEVICES
<b>M1B-219.d*</b>	DEVELOPMENT OF AN INTEGRATED GLASS-BASED MICROFLUIDIC SYSTEM FOR MASS PRODUCTION OF RNA-LOADED LIPID NANOPARTICLES
<b>M1B-222.d*</b>	DNA POINT MUTATION AND PROTEIN ISOFORM CO-DETECTION IN THE SAME CELL: ISOLATION AND ANALYSIS OF SINGLE-CELL DNA
<b>M1B-237.e*</b>	SELF-OSCILLATING POLYMER GEL ACTUATED CHEMICAL MICROPUMP WITH THERMAL SENSITIVITY
<b>M1B-246.e*</b>	SKELETAL MUSCLE TISSUE CONSTRUCTION WITHOUT NON-EDIBLE EXTRACELLULAR MATRIX
<b>M1B-249.e*</b>	SPONTANEOUS WETTING ARRAYS OF SURFACE ENERGY TRAPS FOR DROPLET SPLITTING, PRECONCENTRATION AND TISSUE PROFILING
<b>M1B-252.e*</b>	A SILICON $\mu$ DICER FOR UNIFORM MICRODISSECTION OF TISSUES
<b>M1B-258.e*</b>	SELECTIVE PATTERNING OF BIOLOGICAL MEMBRANES IN SUSPENDED MICROCHANNELS TOWARDS THE NEXT GENERATION OF TISSUE BARRIERS-ON-CHIPS.
<b>M1B-261.e</b>	DIRECT INK WRITING (DIW) 3D PRINTING FOR FABRICATING FLEXIBLE MICROFLUIDIC DEVICES



<b>M1B-279.f*</b>	A HYDROGEL-BASED IONIC DIODE ARRAY FOR ROBOTIC TACTILE SENSING
<b>M1B-282.f*</b>	MICROFLUIDIC PLATFORM FOR MULTI-FREQUENCY VISCOELASTIC PHENOTYPING OF SINGLE CELLS
<b>M1B-445.a*</b>	HIGH-THROUGHPUT FULL-LENGTH SINGLE-CELL RNA SEQUENCING BASED ON DROPLET MICROFLUIDICS
<b>M1B-450.a*</b>	MICROFLUIDIC PLATFORM FOR THE IDENTIFICATION AND RETRIEVAL OF SINGLE DRUG-TOLERANT YEAST CELLS

<b>M1C-109.a*</b>	FORMATION OF PERFUSABLE SKELETAL MUSCLE TISSUE
<b>M1C-115.a</b>	YAP DISTRIBUTION IN RESPONSE TO NUCLEAR DEFORMATION ASSESSED USING AN OPEN CHANNEL MICRODEVICE
<b>M1C-142.a*</b>	SCALABLE FABRICATION OF 3D STRUCTURED MICROPARTICLES USING INDUCED PHASE SEPARATION
<b>M1C-145.a*</b>	STABLE AND SCALABLE ENGINEERING OF HUMAN PRIMARY T CELLS VIA MICROFLUIDIC CELL STRETCHING
<b>M1C-154.b*</b>	AT-LINE, NON-INVASIVE MICROFLUIDIC ASSAY FOR FUNCTIONAL ASSESSMENT OF CAR T CELLS
<b>M1C-157.b</b>	EFFECTS OF CABOZANTINIB IN A RENAL TUMOR MICROENVIRONMENT ON-A-CHIP MODEL
<b>M1C-163.b*</b>	DIRECTIONAL CONTROL OF NEURITE OUTGROWTH BY MICRO-PATHWAYS ON A COLLAGEN GEL SHEET
<b>M1C-166.b*</b>	A MICROPATTERNED GLASS SUBSTRATE FOR RAPID SEQUENCE DETECTION ON LONG DNA MOLECULES USING CRISPR-CAS9
<b>M1C-178.b*</b>	A SAMPLE-TO-ANSWER ELECTROCHEMICAL BIOSENSOR SYSTEM FOR BIOMARKER DETECTION
<b>M1C-181.b*</b>	SEQUENCE-SPECIFIC RECOGNITION OF SARS COV-2 WITH SOLID-STATE CRISPR-CAS12A-ASSISTED NANOPORES (SCAN)
<b>M1C-187.c*</b>	ACOUSTIC PARTICLE FOCUSING IN POLYMER MICROFLUIDIC DEVICES
<b>M1C-193.c*</b>	3D-PRINTED LONG-TERM PASSIVE GRADIENT GENERATOR
<b>M1C-202.c*</b>	REASSESSING MICRODROPLETS AS A PLATFORM FOR SINGLE-CELL ANALYSIS
<b>M1C-205.c*</b>	HIGH-THROUGHPUT MICROFLUIDICS FOR THE SCREENING AND SORTING OF SUPERIOR CELLULASE ACTIVITY IN YEAST
<b>M1C-208.c*</b>	ENHANCING THE DETECTION SIGNALS OF CELL-LADEN MICRODROPLETS BY OSMOSIS
<b>M1C-217.c</b>	THROUGH-CHANNEL MICROSCOPY REVEALS NOVEL ELASTO-INERTIAL FOCUSING PATTERNS
<b>M1C-220.d*</b>	GLUCOSE-MONITORING JANUS HYDROGEL MICROBEADS WITH COMPENSATION FUNCTIONS FOR SURROUNDING PH ENVIRONMENT
<b>M1C-223.d</b>	ON-CHIP RNA PURIFICATION USING ISOTACHOPHORESIS COUPLED WITH POLYACRYLAMIDE GEL ELECTROPHORESIS
<b>M1C-235.e*</b>	A ROBUST PROGRAMMABLE MICROFLUIDIC PLATFORM FOR LONG-TERM SPACE EXPLORATION
<b>M1C-238.e*</b>	MICROSCALE IMPELLER PUMP FOR RECIRCULATING FLOW IN ORGANS-ON-CHIP AND MICROREACTORS
<b>M1C-253.e</b>	TOWARDS PERSONALIZED THROMBOSIS STUDIES: IN SITU MOLD-FREE LITHOGRAPHY OF PHYSIOLOGICAL STENOSIS IN CIRCULAR CAPILLARIES
<b>M1C-274.f*</b>	ONE-CLICK MICROFLUIDIC SYSTEM FOR RAPID DETECTION OF CORTISOL BY COMPETITIVE ELISA WITH ELECTROSPUN MICROFIBER SUBSTRATE
<b>M1C-283.g*</b>	WHOLE-BRAIN CELL ANNOTATION FRAMEWORK COMBINED WITH ON-CHIP STIMULATION REVEALS STIMULUS ENCODING IN C. ELEGANS



<b>W4A-413.a</b>	MODELLING THE BLOOD VESSEL WALL WITH SPIDER SILK NANOMEMBRANES
<b>W4A-437.a</b>	RAPID ORGAN-ON-A-CHIP VASCULARIZATION ACTIVATED BY FIBROBLAST AGGREGATES
<b>W4A-443.a*</b>	REAL-TIME, IN-LINE MONITORING OF OXYGEN-DEPENDENT METABOLISM OF MOUSE PRECISION-CUT LIVER SLICES INCUBATED IN A MICROFLUIDIC DEVICE
<b>W4A-449.a</b>	ISOLATED CULTURE OF SINGLE BACTERIAL CELLS USING A MODIFIED MOTHER MACHINE
<b>W4A-473.b*</b>	HIGH-THROUGHPUT NANOFLUIDIC EXTRACELLULAR VESICLE ISOLATION VIA NANOPOROUS HIERARCHICAL MATERIALS
<b>W4A-479.b*</b>	TOWARDS A MULTIPLEXED BARCODE CRISPR/CAS12A-ASSISTED PLATFORM FOR THE IDENTIFICATION AND QUANTIFICATION OF SINGLE CPG METHYLATION SITES
<b>W4A-488.b*</b>	TOWARDS QUANTITATIVE NUCLEIC ACID ISOTHERMAL AMPLIFICATION AT THE POINT-OF-CARE USING NUCLEATION SITE COUNTING IN PAPER MEMBRANES
<b>W4A-503.b</b>	A FUNCTIONALIZED MICROWAVE SENSOR IN A MICROFLUIDIC PLATFORM FOR RAPID DETECTION OF SARS-COV-2
<b>W4A-521.c</b>	ENRICHMENT OF PERIPHERAL BLOOD MONONUCLEAR CELLS FROM LARGE VOLUMES OF BLOOD USING CENTRIFUGAL MICROFLUIDICS
<b>W4A-533.c*</b>	LONGITUDINAL ORDERING OF MICROFLUIDIC DROPS USING INERTIAL FORCES
<b>W4A-539.c*</b>	PREDICTING ION CONCENTRATION POLARIZATION IN SHORT NANOCHANNEL
<b>W4A-545.d</b>	IMMUNOAFFINITY MONOLITHS FOR MULTIPLEXED BIOMARKER EXTRACTION IN 3D PRINTED MICROFLUIDIC DEVICES
<b>W4A-548.d*</b>	FLOW PROFILES IN WALL-LESS FLUIDIC DEVICES
<b>W4A-557.e*</b>	PATTERNED MICROCARRIERS FOR PROTECTION AND PROFILING OF ADHERENT CELLS
<b>W4A-599.g*</b>	DEEP LEARNING IMAGE ANALYSIS BASED CHARACTERIZATION OF 3D MICROSPHEROID ASSEMBLY IN MICROFLUIDIC DROPLETS

<b>W4B-429.a*</b>	'BARRIER-ON-A-CHIP' FOR REAL TIME IMPEDANCE MONITORING OF EPITHELIAL BARRIER FUNCTION
<b>W4B-435.a*</b>	A HIGH-THROUGHPUT OXYGEN SENSOR-INTEGRATED ORGAN-ON-CHIP PLATFORM FOR LABEL-FREE AND REAL-TIME MONITORING OF TISSUE METABOLIC FUNCTION
<b>W4B-441.a*</b>	IMPLEMENTING A BLOOD-BRAIN BARRIER ON A CHIP TO EXPLORE THE EFFECTS OF ERYTHROCYTES ON AGING
<b>W4B-444.a</b>	MICROFLUIDIC PLATFORM OF MEASURING SINGLE-CELL CORTICAL TENSION/SPECIFIC MEMBRANE CAPACITANCE AND CYTOPLASMIC CONDUCTIVITY
<b>W4B-447.a</b>	LARGE-SCALE SINGLE-CELL PAIRING AND FUSION FOR HYBRIDOMA PRODUCTION
<b>W4B-468.b*</b>	AUTOMATIC DETECTION OF MULTIPLE SYNOVIAL FLUID BIOMARKERS FOR PERIPROSTHETIC JOINT INFECTION ON AN INTEGRATED MICROFLUIDIC SYSTEM
<b>W4B-474.b</b>	QUANTITATIVE AND MULTIPLEX DETECTION OF EXTRACELLULAR VESICLE-DERIVED MICRORNA BIOMARKERS VIA ROLLING CIRCLE AMPLIFICATION WITHIN ENCODED HYDROGEL MICROPARTICLES
<b>W4B-477.b*</b>	NEURAL PROBE TO SAMPLE BRAIN FLUID DROPLETS ON DEMAND WITH HIGH RECOVERY FRACTION
<b>W4B-483.b*</b>	AN INTEGRATED MICROFLUIDIC SYSTEM FOR AUTOMATIC SCREENING DNA APTAMERS FOR HUMAN NEUTROPHIL PEPTIDE 1-3
<b>W4B-501.b*</b>	PROTEIN ANALYSIS FROM SMALL CELL ENSEMBLES BY AN INTEGRATED MICROFLUIDIC AND MASS SPECTROMETRY ASSAY



<b>W4B-534.c*</b>	OLIGONUCLEOTIDE FUNCTIONALIZED POLYACRYLAMIDE BEADS FOR AMPLIFICATION BASED BIOMARKER DETECTION
<b>W4B-546.d*</b>	A MICROFLUIDIC DEVICE FOR FREE-FLOW COUNTERFLOW GRADIENT FOCUSING
<b>W4B-558.e*</b>	CRYOPRESERVATION OF 3D TUMOR MODELS IN A PAPER PLATFORM
<b>W4B-567.e*</b>	VERTICALLY INTEGRATED MICROFLUIDIC STRUCTURES ON MICRO ELECTRODE ARRAY FOR IN VITRO NEURAL CIRCUITRY MODELING
<b>W4B-603.g*</b>	WORKFLOW FOR ON-SITE EXTRACTION AND ANALYSIS OF NITRATE IN SOIL

<b>W4C-403.a</b>	SIMULTANEOUS BIOCHEMICAL AND FUNCTIONAL PHENOTYPING OF SINGLE CIRCULATING TUMOR CELLS USING ULTRAHIGH THROUGHPUT MICROFLUIDIC DEVICES
<b>W4C-415.a*</b>	INTEGRATED LABEL-FREE MICROFLUIDIC PLATFORM FOR AUTOMATED CELLULAR MONITORING AND REAL-TIME ACTUATED SORTING OF CELL-LADEN MICROCARRIERS
<b>W4C-454.a</b>	REALTIME UNCERTAINTY QUANTIFICATION VIA ULTRA-PRECISE PARTICLE MATCHING FOR HIGH-THROUGHPUT SERIAL CYTOMETRY
<b>W4C-472.b</b>	A PORTABLE INTEGRATED WORKFLOW TO IDENTIFY SEPSIS CAUSING PATHOGENS USING CELL-FREE CIRCULATING MICROBIAL DNA
<b>W4C-478.b*</b>	MAGNETOFLUIDICS-ENABLED POINT-OF-CARE SARS-COV-2 DIAGNOSTICS
<b>W4C-481.b*</b>	RAPID ANALYSIS OF EXOSOMAL MICRORNAS USING AN IOT SENSOR
<b>W4C-502.b*</b>	ADAPTABLE ENGINEERING OF CELLULOSE-BASED VERTICAL FLOW ASSAYS FOR RAPID DIAGNOSTICS – THE CASE OF COVID-19
<b>W4C-508.c*</b>	TIME-CONTROLLED MICROBEAD-BASED REACTIONS IN DROPLETS USING ACOUSTOPHORESIS
<b>W4C-511.c</b>	RAPID CELL SEPARATION AND EXTRACTION IN SESSILE BLOOD SAMPLES USING OMNIDIRECTIONAL SPIRAL SURFACE ACOUSTIC WAVES
<b>W4C-517.c</b>	OPEN MICROFLUIDIC CHANNEL DESIGN FOR PASSIVE MONODISPERSE DROPLET GENERATION AND MANIPULATION
<b>W4C-529.c</b>	DIGITAL DETECTION AND QUANTIFICATION OF SARS-COV-2 IN A DROPLET MICROFLUIDIC ALL-FIBER DEVICE
<b>W4C-535.c*</b>	DROPLET-BASED MICROFLUIDIC PLATFORM FOR VISCOSITY MEASUREMENT OVER EXTENDED CONCENTRATION RANGE
<b>W4C-538.c*</b>	ELECTROCHEMICAL DETECTION OF NUCLEIC ACIDS AFTER ENRICHMENT BY OUT-OF-PLANE FARADAIC ION CONCENTRATION POLARIZATION
<b>W4C-547.d*</b>	A DUAL-TARGET MICROFLUIDIC PLATFORM FOR DIAGNOSIS OF RHEUMATOID ARTHRITIS
<b>W4C-586.f*</b>	QUANTIFICATION OF ANTIBODY BINDING KINETICS ON CELLS AND TISSUES VIA FLUORESCENCE LIFETIME IMAGING
<b>W4C-589.f</b>	SARS-COV-2 PROTEINS AND BIOTOXIN DETECTION USING PHOTONIC RESONATOR SENSOR
<b>W4C-598.g*</b>	SUPERVISED LEARNING ON IMPEDANCE CYTOMETRY DATA FOR DRUG SENSITIVITY DISTINCTION OF CANCER VERSUS FIBROBLAST CELLS