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Editors:

**James P. Landers
David Juncker
Joan Bienvenue**

**Amy Herr
Nicole Pamme**

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¹University of Tokyo, JAPAN and ²Auburn University, USA
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North Carolina State University, USA
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C.-H. Tai¹, C.-H. Wang², S.-Y. Yang², C.-C. Lin¹, and G.-B. Lee²
¹National Cheng Kung University, TAIWAN and ²National Tsing Hua University, TAIWAN
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Chang Gung University, TAIWAN
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¹University of Helsinki, FINLAND and ²Aalto University, FINLAND
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J.H. Lee¹, K.S. Hwang², D.S. Yoon³, J.Y. Kang¹, S.K. Kim¹, and T.S. Kim¹
¹Kwangwoon University, SOUTH KOREA,
²Korea Institute of Science and Technology (KIST), SOUTH KOREA, and
³Yonsei University, SOUTH KOREA

Poster Session Integrated Micro- & Nanotechnologies - Single or Multi-Cell Analysis

- W10D A MICROFLUIDIC DEVICE FOR SORTING CANCER CELLS BASED ON CELL MOTILITY** 1701
W. Tai², C.F. Yeh¹, C.C. Wu², and C.H. Hsu¹
¹National Health Research Institutes, TAIWAN and ²National Chung Hsing University, TAIWAN
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T. Teshima¹, K. Kuribayashi-Shigetomi^{1,2}, H. Onoe^{1,2}, T. Tonooka¹, and S. Takeuchi^{1,2}
¹University of Tokyo, JAPAN and ²Japan Science and Technology Agency (JST), JAPAN
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¹Auburn University, USA, ²Korea Research Institute of Bioscience & Biotechnology, SOUTH KOREA,
³21C Frontier Microbial Genomics and Applications Center, SOUTH KOREA,
⁴University of Science and Technology, SOUTH KOREA, and
⁵Korea Advanced Institute of Science and Technology (KAIST), SOUTH KOREA
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E. Weber^{1,2}, M. Rosenauer¹, W. Buchegger¹, P.D.E.M. Verhaert², and M.J. Vellekoop¹
¹Vienna University of Technology, AUSTRIA and ²Delft University of Technology, THE NETHERLANDS
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NASA Ames Research Center, USA
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M. Bocchi¹, L. Rambelli², E. Duqi², A. Faenza², L. Giulianelli², N. Lopez², N. Pecorari², and R. Guerrieri²
¹Mindseeds Laboratories, ITALY and ²University of Bologna, ITALY
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M. Ricicova¹, M. Hamidi¹, A. Quiring¹, A. Niemisto^{2,3}, I. Shmulevich², and C.L. Hansen^{1,2}
¹University of British Columbia, CANADA, ²Institute for Systems Biology, USA, and
³Tampere University of Technology, FINLAND
- W19D MICROCHIP ELECTROPHORESIS DEVICES FOR THE DETECTION OF NITRIC OXIDE: COMPARISON OF BULK CELL AND SINGLE CELL ANALYSIS** 1728
S.M. Lunte¹, D.B. Gunasekara¹, E.C. Metto², M.K. Hulvey¹, E.R. Mainz¹, G. Caruso^{1,3},
J.A. Fracassi Da Silva^{1,4}, D.T. Jensen¹, A.H. Culbertson², R.J. Grigsby¹, and C.T. Culbertson²
¹University of Kansas, USA, ²Kansas State University, USA, ³University of Catania, ITALY, and
⁴State University of Campinas, BRAZIL

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Poster Session Integrated Micro- and Nanotechnologies - Others

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Poster Session Nanotechnologies - Nanofluidics

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	J. Katagiri ¹ , T. Yamamoto ¹ , K. Mawatari ^{1,2} , and T. Kitamori ^{1,2} ¹ University of Tokyo, JAPAN and ² Japan Science and Technology Agency (JST), JAPAN	
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	C. Freitag ¹ , J. Fritzsche ¹ , F. Persson ¹ , K.U. Mir ² , and J.O. Tegenfeldt ^{1,3} ¹ University of Gothenburg, SWEDEN, ² University of Oxford, UK, and ³ Lund University, SWEDEN	
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H.-Y. Hsieh¹, J.-L. Xiao^{2,3}, C.-H. Lee^{2,3}, P.-C. Wang¹, and F.-G. Tseng^{1,3}
¹National Tsing Hua University, TAIWAN, ²National Yang-Ming University, TAIWAN, and ³Academia Sinica, TAIWAN

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T.-S. Lim, D. Jain, and P.J. Burke
University of California, Irvine, USA
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M. Haneoka¹, Y. Shirasaki², H. Sugino¹, T. Sekiguchi³, D.H. Yoon³, R. Iizuka¹, S. Shoji³, and T. Funatsu¹
¹University of Tokyo, JAPAN, ²Institute of Physical and Chemical Research (RIKEN), JAPAN, and ³Waseda University, JAPAN
- W9E PRECISE EVALUATION OF ELECTROPHORETIC MOBILITY DISTRIBUTION OF NANOLIPOSOMES USING MICROCAPILLARY ELECTROPHORESIS CHIPS WITH SENSITIVE FLUORESCENT IMAGING** 1776
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University of Tokyo, JAPAN
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Y. Song, Y. Zhang, and T.-H. Wang
Johns Hopkins University, USA

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- W11E A ZERO-POWER, HIGH-THROUGHPUT MICRO, NANOPARTICLE PRINTING VIA GRAVITY-DRIVEN FORMATION OF PICOLITER-SCALE DROPLETS** 1782
S. Choi, A. Jamshidi, T.J. Seok, T.I. Zohdi, M.C. Wu, and A.P. Pisano
University of California, Berkeley, USA

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- W12E ARRAYS OF METALLIC NANOPILLARS IN HOLES FOR PLASMONIC DEVICES** 1786
K. Nakamoto¹, R. Kurita², and O. Niwa²
¹University of Tsukuba, JAPAN and ²National Institute of Advanced Industrial Science and Technology (AIST), JAPAN

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	J. Kim ¹ , J.W. Hong ¹ , Z. Li ² , J.H. Shin ¹ , and I. Park ¹ ¹ Korea Advanced Institute of Science and Technology (KAIST), SOUTH KOREA and ² Hewlett Packard Laboratory, USA	

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	B.Z. Cvetković, J. Puigmartí-Luis, and P.S. Dittrich ETH Zürich, SWITZERLAND	

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	L.R. Freschauf, J. McLane, H. Sharma, and M. Khine University of California, Irvine, USA	

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	M. Kojima ¹ , H. Takehara ¹ , T. Akagi ¹ , H. Shiono ² , and T. Ichiki ¹ ¹ University of Tokyo, JAPAN and ² Nikon Instruments Inc, JAPAN	

W2F	NANOFABRICATION OF POLYMERIC APERTURE ARRAY FOR LOCALIZED ILLUMINATION BEYOND DIFFRACTION LIMIT	1801
	T. Ono ^{1,2,3} , R. Iizuka ^{1,3} , T. Akagi ^{1,3} , T. Funatsu ^{1,3} , and T. Ichiki ^{1,3} ¹ University of Tokyo, JAPAN, ² Japan Society for the Promotion of Science, JAPAN, and ³ Japan Science and Technology Agency (JST), JAPAN	

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	R. Surapaneni, K. Park, Y. Xie, and C. Mastrangelo University of Utah, USA	

Poster Session MEMS & NEMS Technologies - Microfluidic Components/Packaging

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	M. Ochoa, C. Mousoulis, and B. Ziaie Purdue University, USA	

W5F	BLOOD PLASMA SEPARATOR USING MICRO PILLARS ARRANGED LIKE A LABYRINTH	1810
	H. Tsutsui and T. Kawano Osaka Institute of Technology, JAPAN	

W6F	ELECTROSTATIC MICROVALVES FOR INTEGRATED MICROCHEMICAL SYSTEMS	1813
	J.D. Tice ¹ , A.V. Desai ¹ , T.A. Bassett ¹ , C.A. Appleby ² , and P.J.A. Kenis ¹ ¹ University of Illinois, Urbana-Champaign, USA and ² Sandia National Laboratories, USA	

W7F	PHYSICAL AND BIOCHEMICAL INVESTIGATION OF AN ACTIVE MAGNETIC MICROCOLUMN SELF-ASSEMBLED IN A MICROCHANNEL	1816
	S. Tabnaoui ¹ , A. Ali-Cherif ¹ , V. Taniga ¹ , A. Le Nel ² , L. Malaquin ¹ , and J.-L. Viovy ¹ ¹ Institut Curie, FRANCE and ² Fluigent, FRANCE	

Poster Session MEMS & NEMS Technologies - Integration Strategies

- W8F A PRINTED CIRCUIT BOARD BASED MICROFLUIDIC SYSTEM FOR POINT-OF-CARE DIAGNOSTICS APPLICATIONS** 1819
L.L. Wu¹, L.A. Marshall², S. Babikian¹, C.M. Han², J.G. Santiago², and M. Bachman¹
¹University of California, Irvine, USA and ²Stanford University, USA
- W9F MICROFLUIDIC INTEGRATION OF PARALLEL LIQUID CHROMATOGRAPHY** 1822
J. Huft and C.L. Hansen
University of British Columbia, CANADA

Poster Session MEMS & NEMS Technologies - New Chip Materials

- W10F COMPARISON OF RAPID PROTOTYPING POLYMERS FOR HIGH PRESSURE INJECTIONS** 1825
E. Sollier, C. Murray, P. Maoddi, and D. Di Carlo
University of California, Los Angeles, USA
- W11F GREEN MICROFLUIDICS MADE OF CORN PROTEIN** 1828
A. Hsiao, J. Luecha, J. Kokini, and G.L. Liu
University of Illinois, Urbana-Champaign, USA
- W12F NON-ABSORBING, CLEAR, FLEXIBLE, AND CASTABLE POLYURETHANE FOR FABRICATION OF MICROFLUIDIC DEVICES** 1831
K. Domansky, D.C. Leslie, J.P. Fraser, G.A. Hamilton, A. Bahinski, and D.E. Ingber
Harvard University, USA
- W13F REPLICA MOLDING AND BONDING OF MICROSTRUCTURED HYDROGEL PLATES FOR TISSUE ENGINEERING APPLICATIONS** 1834
E. Yamada, M. Yamada, M. Iwase, S. Sugaya, and M. Seki
Chiba University, JAPAN

Poster Session MEMS & NEMS Technologies - Surface Modification

- W14F A SIMPLE IN SITU MICROFLUIDIC PROCEDURE TO CREATE MULTIVALENT BIOFUNCTIONALIZED SURFACES** 1837
G. Perozziello¹, G. Simone², M. Francardi⁴, R. La Rocca^{1,3}, N. Malara², P. Candeloro¹, E. Carbone^{1,5}, E. Di Fabrizio^{1,3}, and A. Manz¹
¹Bionem Univerisita Magna Graecia, ITALY, ²Korea Institute of Science and Technology (KIST) - Europe, GERMANY, ³Italian Institute of Technology IIT of Genova, ITALY, ⁴International School for Advanced Studies (SISSA), ITALY, and ⁵Karolinska Institutet, SWEDEN
- W15F ENABLING DNA-MICROARRAYS IN POLYMERIC LAB-ON-A-CHIP SUBSTRATES FOR MULTIPLEXED TARGET ANALYSIS VIA SOLID-PHASE PCR** 1840
J. Hoffmann¹, S. Hin¹, F. von Stetten^{1,2}, R. Zengerle^{1,2}, and G. Roth^{1,2}
¹University of Freiburg, GERMANY and
²Institute for Micromachining and Information Technology (HSG-IMIT), GERMANY
- W16F SPONTANEOUS FAST MOTION OF WATER DROPLET ON NANOTEXTURED AND CURVED GLASS SURFACES** 1843
Y.C. Chuang¹, H.S. Hsieh¹, Q.S. Zheng², Y.C. Lin³, and F.G. Tseng^{1,4}
¹National Tsing Hua University, TAIWAN, ²Tsinghua University, CHINA,
³National Cheng Kung University, TAIWAN, and ⁴Academia Sinica, TAIWAN

Poster Session MEMS & NEMS Technologies - Others

- W17F CELL SHEET FREE ACTUATOR FOR A BIO-MICROPUMP USING PREVIOUSLY FROZEN CARDIOMYOCYTES** 1846
Y. Tanaka^{1,2,3}, Y. Yanagisawa¹, and T. Kitamori^{1,3}
¹University of Tokyo, JAPAN, ²Institute of Physical and Chemical Research (RIKEN), JAPAN, and
³Japan Science and Technology Agency (JST), JAPAN
- W18F FLOWER-SHAPED MICROMOTORS DRIVEN BY GLIDING BACTERIA** 1849
T. Sawada¹, Y. Hiratsuka², M. Miyata³, and S. Maruo¹
¹Yokohama National University, JAPAN, ²Japan Advanced Institute of Science and Technology, JAPAN, and
³Osaka City University, JAPAN

Poster Session Bench-to-Bedside - Point-of-Care Testing

- W1G A DISPOSABLE DNA AMPLIFICATION PLATFORM FOR THE DETECTION OF CLOSTRIDIUM DIFFICILE INFECTED STOOL SPECIMENS** 1852
S. Huang¹, J. Do¹, M. Mahalanabis¹, A. Fan¹, L. Jepeal¹, S. Singh^{1,2}, and C. Klapperich¹
¹Boston University, USA and ²VA Boston, USA
- W2G A FULLY-AUTOMATED SURFACE ACOUSTIC WAVE IMMUNOSENSING SYSTEM FOR THE DETECTION OF CARDIAC MARKERS IN WHOLE BLOOD** 1855
Y.-S. Choi, J.P. Do, H.J. Lee, S.S. Lee, J. Lee, Y.H. Lee, S.K. Kim, J.N. Lee, K.Y. Han, and J.C. Park
Samsung Advanced Institute of Technology (SAIT), SOUTH KOREA
- W3G AN INTEGRATED MICROFLUIDIC DEVICE FOR QUANTITATIVE MEASUREMENT OF HEPATOCELLULAR CARCINOMA (HCC) BIOMARKERS IN WHOLE BLOOD SAMPLES** 1858
C. Li, S. Yang, and R.-L. Chien
Wako Pure Chemical Industries, USA
- W4G ENGINEERING A POINT-OF-CARE VIRAL CONCENTRATION DEVICE FOR RAPID MOLECULAR DIAGNOSTICS OF INFLUENZA IN HUMAN RESPIRATORY SPECIMENS** 1861
J.Y. Zhang¹, M. Mahalanabis¹, L. Liu¹, J. Chang², J. Do³, and C.M. Klapperich¹
¹Boston University, USA, ²Center for Disease Control and Prevention, USA, and
³Samsung Electronics, SOUTH KOREA
- W5G GELIFICATION - A SIMPLE AND EFFICIENT METHOD FOR ON-CHIP STORAGE OF REAGENTS: TOWARDS LAB-ON-A-CHIP SYSTEMS FOR POINT-OF-CARE DIAGNOSTICS** 1864
J. Høgborg¹, T. Christine², C. Cao¹, L. Florian³, M. Agirregabiria³, L.G. Monsalve³, A. Goiriena³,
S. Rodriguez⁴, A. Wolff¹, D.D. Bang¹, and J.M. Ruano-Lopez³
¹Technical University of Denmark (DTU), DENMARK, ²EVGroup, AUSTRIA, ³Ikerlan, SPAIN, and
⁴Biotoools B&M Labs, SPAIN
- W6G HIGH SENSITIVITY MULTIPLEXED IMMUNOCHROMATOGRAPHIC ASSAY ON THREADS** 1867
G. Zhou and D. Juncker
McGill University, CANADA and Genome Quebec, CANADA
- W7G IN SITU ELECTROKINETIC STRINGENCY CONTROL FOR MULTIPLEXED ELECTROCHEMICAL PATHOGEN SENSING** 1870
T. Liu, M.L.Y. Sin, and P. Wong
University of Arizona, USA
- W8G MICRO TOTAL ANALYSIS SYSTEM BASED ON MAGNETIC NANOPARTICLES FOR ALLERGY DIAGNOSIS** 1873
B. Teste, F. Malloggi, F. Kanoufi, A. Varenne, J.M. Siaugue, P. Poncet, and S. Descroix
Ecole Supérieure de Physique et de Chimie Industrielles (ESPCI), FRANCE

W9G	MULTI-LAYERED APTAMER ARRAY INTEGRATED IN MICROFLUIDIC CHIP FOR ON-SITE BLOOD ANALYSIS	1876
	S. Inoue, M. Seyama, T. Miura, T. Horiuchi, Y. Iwasaki, J. Takahashi, and E. Tamechika <i>Nippon Telegraph and Telephone Corporation, JAPAN</i>	
W10G	PEG BONDED FLUORESCENT-HYDROGEL FIBERS WITH LESS INFLAMMATION FOR LONG-TERM SUBCUTANEOUS GLUCOSE MONITORING	1879
	Y.J. Heo ¹ , M. Takahashi ² , H. Shibata ³ , T. Okitsu ¹ , T. Kawanishi ³ , and S. Takeuchi ¹ ¹ University of Tokyo, JAPAN, ² Life BEANS Center, JAPAN, and ³ Terumo Co., JAPAN	
W11G	RAPID BLOOD PLASMA SEPARATION WITH AIR-LIQUID CAVITY ACOUSTIC TRANSDUCERS	1882
	A. Doria, M. Patel, and A.P. Lee <i>University of California, Irvine, USA</i>	
W12G	REAGENT INTEGRATORS FOR THE CONTROLLED RELEASE OF PICOGRAMS OF REAGENTS IN SELF-POWERED MICROFLUIDIC CHIPS	1885
	M. Hitzbleck, L. Gervais, and E. Delamarche <i>IBM Research GmbH, SWITZERLAND</i>	
W13G	SIMPLIFIED MONOLITHIC FLOW CYTOMETER CHIP WITH THREE-DIMENSIONAL HYDRODYNAMIC FOCUSING AND INTEGRATED FIBER-FREE OPTICS	1888
	M. Motosuke ^{1,2} , T.G. Jensen ² , G. Zhuang ² , and J.P. Kutter ² ¹ Tokyo University of Science, JAPAN and ² Technical University of Denmark (DTU), DENMARK	
W14G	TWO-DIMENSIONAL PAPER NETWORK FORMAT FOR AMPLIFIED LATERAL FLOW ASSAYS	1891
	E. Fu, T. Liang, S. Ramachandran, B. Lutz, and P. Yager <i>University of Washington, USA</i>	
Poster Session Bench-to-Bedside - Cell Sorting		
W15G	A CTC-MICROSEPARATOR FOR ISOLATION OF CIRCULATING TUMOR CELLS USING LATERAL MAGNETOPHORESIS AND MAGNETIC NANOBeads	1894
	S.-Y. Kim, H.-Y. Lee, S.-I. Han, M.-J. Park, C.-W. Jeon, Y.-D. Joo, I.-H. Choi, and K.-H. Han <i>Inje University, SOUTH KOREA</i>	
W16G	APTAMER-FACILITATED HIGH-EFFICIENCY CANCER CELL SORTING IN A MICROPOST-BASED MICROFLUIDIC DEVICE	1897
	W. Sheng, R. Kamath, T. Chen, W. Tan, and Z.H. Fan <i>University of Florida, USA</i>	
W17G	CHARACTERIZATION OF HepG2 CELLS BEHAVIOR IN CRITICAL FREQUENCY DOMAIN ON TiO₂-BASED OPTOELECTRONIC DIELECTROPHORESIS CHIP	1900
	S.-M. Yang ¹ , C.-Y. Lin ² , S. Sivashankar ² , S.V. Pattaswamy ² , S.-Y. Wei ¹ , T.-M. Yu ¹ , H.-Y. Chang ² , L. Hsu ¹ , and C.-H. Liu ² ¹ National Chiao Tung University, TAIWAN and ² National Tsing Hua University, TAIWAN	
W18G	CONTROLLABLE THREE-DIMENSIONAL SHEATH FLOW WITH A WIDE RANGE REYNOLDS NUMBER AND ITS APPLICATION FOR EFFICIENT CELL SORTING	1903
	R. Sekine ¹ , T. Sakurai ² , D.H. Yoon ¹ , R. Iizuka ² , T. Sekiguchi ¹ , T. Funatsu ² , and S. Shoji ¹ ¹ Waseda University, JAPAN and ² University of Tokyo, JAPAN	
W19G	EXTRACTION AND ENRICHMENT OF RARE CELLS IN A SIMPLE INERTIAL MICROFLUIDIC DEVICE	1906
	J. Zhou, P.J. Giridhar, S. Kasper, and I. Papautsky <i>University of Cincinnati, USA</i>	

W20G	MICROFLUIDIC CELL SEPARATION WITH ANTIBODY MODIFIED <i>EUGLENA</i> BY USING PHOTOTAXIS MEDIATED MIGRATION	1909
	Y. Okamoto ¹ , Y. Nakakita ¹ , T. Sano ¹ , J. Morikawa ¹ , N. Kaji ¹ , M. Tokeshi ¹ , and Y. Baba ^{1,2} ¹ Nagoya University, JAPAN and ² National Institute of Advanced Industrial Science and Technology (AIST), JAPAN	
W21G	PATHOGEN AND INFLAMMATORY COMPONENTS REMOVAL FROM BLOOD USING CELL MARGINATION	1912
	H.W. Hou ¹ , H.Y. Gan ² , A.A.S. Bhagat ¹ , L.D. Li ² , C.T. Lim ³ , and J. Han ² ¹ Singapore-MIT Alliance for Research and Technology (SMART) Centre, SINGAPORE, ² Massachusetts Institute of Technology, USA, and ³ National University of Singapore, SINGAPORE	
W22G	STRESS-FREE CENTRIFUGO-MAGNETIC 2D-SEPARATION OF CANCER CELLS IN A STOPPED-FLOW MODE	1915
	J. Siegrist, R. Burger, D. Kirby, L. Zavattoni, G. Kijanka, and J. Ducreé Dublin City University, IRELAND	
Poster Session Bench-to-Bedside - Cell Analysis		
W23G	A RAPID AND SENSITIVE ANTIGEN CAPTURE TEST FOR THE DETECTION SPECIFIC CELLS ON SHEAR HORIZONTAL SURFACE ACOUSTIC WAVE SENSORS	1918
	H.-C. Hao, H.Y. Chang, T.P. Wang, and D.J. Yao, National Tsing Hua University, TAIWAN	
W24G	INTEGRATED MICROSYSTEM AS A TOOL FOR FABRY DISEASE DIAGNOSTICS	1923
	R. Kwapiszewski, S. Chmielinski, K. Ziolkowska, M. Chudy, A. Dybko, and Z. Brzozka Warsaw University of Technology, POLAND	
W25G	QUANTITATIVE AND MULTIPLEXED IMMUNOCYTOCHEMISTRY USING A MICROFLUIDIC QUANTUM DOT IMMUNO-STAINING SYSTEM	1926
	S. Kwon ¹ , M.S. Kim ² , E.S. Lee ³ , and J.-K. Park ¹ ¹ Korea Advanced Institute of Science and Technology (KAIST), SOUTH KOREA, ² Samsung Advanced Institute of Technology (SAIT), SOUTH KOREA, and ³ Korea University, SOUTH KOREA	
Poster Session Bench-to-Bedside - Proteomics		
W26G	ACTIVITY MEASUREMENTS OF KINASES AND PHOSPHATASES IN CELL LYSATES BY MICROCHIP PHOSPHATE-AFFINITY ELECTROPHORESIS	1929
	A. Han, K. Hosokawa, and M. Maeda Institute of Physical and Chemical Research (RIKEN), JAPAN	
Poster Session Bench-to-Bedside - Others		
W27G	CONSTRUCTION OF CELL DENSITY-CONTROLLED 3D HIERARCHIC TISSUES USING CELL BEADS	1932
	R. Tanaka ¹ , Y.T. Matsunaga ^{1,2} , and S. Takeuchi ^{1,2} ¹ University of Tokyo, JAPAN and ² Japan Science and Technology Agency (JST), JAPAN	
W28G	USE OF NEGATIVE DIELECTROPHORESIS FOR SELECTIVE ELUTION OF IMMUNO-BOUND PARTICLES	1935
	M. Javanmard, S. Emaminejad, R.W. Dutton, and R.W. Davis Stanford University, USA	

Poster Session Imaging & Detection Technologies - Flow Visualization

- W1H HIGH SPEED 3D-GEOMETRY RECONSTRUCTION OF DROPLET SHAPE EVOLUTION BY ABSORBANCE IMAGING TECHNIQUE** 1938
T. Henkel, D. Malsch, M. Kielpinski, and G. Mayer
Institute of Photonic Technology (IPHT), GERMANY

Poster Session Imaging & Detection Technologies - Optical

- W2H LABEL-FREE DETECTION AND QUANTITATION OF NUCLEIC ACIDS WITH 1 μ M SUPERPARAMAGNETIC PARTICLES** 1941
B.C. Strachan¹, J. Li¹, K. Kehn-Hall², and J.P. Landers¹
¹University of Virginia, USA and ²George Mason University, USA
- W3H A PARTICLE-ENHANCED DOUBLE-STRANDED DNA PROBE FOR RAPID DETECTION OF BACTERIAL 16S rRNA TOWARD URINARY TRACT INFECTION DIAGNOSTICS** 1944
R. Riahi¹, J.C. Liao², and P.K. Wong¹
¹University of Arizona, USA and ²Stanford University, USA
- W4H COLOR SUB-PIXEL RESOLVING OPTOFLUIDIC MICROSCOPE AND ITS APPLICATION TO BLOOD CELL IMAGING FOR MALARIA DIAGNOSIS** 1947
S.A. Lee¹, R. Leitao², G. Zheng¹, S. Yang¹, A. Rodriguez², and C. Yang¹
¹California Institute of Technology, USA and ²New York University School of Medicine, USA
- W5H LABEL FREE DETECTION OF VIRUS-LIKE PARTICLES** 1950
D.S. Dandy, N.S. Lynn, L.C. Kingry, R. Yan, and K.L. Lear
Colorado State University, USA
- W6H LOCAL TEMPERATURE MEASUREMENT AND CONTROL USING FUNCTIONAL GEL-TOOL CONTAINING A QUANTUM DOT BY COLOR ANALYSIS OF FLUORESCENCE SPECTRUM** 1953
H. Maruyama¹, T. Masuda¹, and F. Arai^{1,2}
¹Nagoya University, JAPAN and ²Seoul National University, JAPAN
- W7H MULTIPLEX PINWHEEL ASSAY: MICRO-SCALE OPTICAL AND LABEL-FREE QUANTITATION OF DNA WITH HIGH THROUGHPUT AND LOW COST** 1956
J. Li and J.P. Landers
University of Virginia, USA
- W8H PINWHEEL ASSAY VIA A 'PIPET, AGGREGATE AND BLOT' (PAB) APPROACH ON FILTER PAPER** 1959
J. Li, H. Alshammari, B. Ehdaie, K.A. Kelly, and J.P. Landers
University of Virginia, USA
- W9H LABEL-FREE SENSING WITH PHOTONIC CRYSTAL NANOBEAM CAVITIES** 1962
Q. Quan¹, I.B. Burgess¹, S.K.Y. Tang¹, D.L. Floyd¹, P.B. Deotare¹, I.W. Frank¹, R. Ilic², F. Vollmer³, and M. Loncar¹
¹Harvard University, USA, ²Cornell University, USA, and ³Max Plank Institute for Science of Light, GERMANY

Poster Session Imaging & Detection Technologies - Electrochemical

- W10H DEVELOPMENT AND CHARACTERIZATION OF ELECTROCHEMICAL CANTILEVER SENSOR FOR BIO/CHEMICAL SENSING APPLICATIONS** 1965
X. Quan, L.M. Fisher, A. Boisen, and M. Tenje
Technical University of Denmark (DTU), DENMARK
- W11H MONITORING BIOFILM GROWTH USING A SCALABLE MULTICHANNEL IMPEDIMETRIC BIOSENSOR** 1968
K. Sachsenheimer, L. Pires, M. Adamek, T. Schwartz, and B.E. Rapp
Karlsruhe Institute of Technology (KIT), GERMANY

- W12H SCALABLE MONOLITHIC SUSPENDED CARBON NANOWIRE ARRAY SYSTEMS AS ULTRA SENSITIVE ELECTROCHEMICAL SENSING PLATFORMS** 1971
 J.-I. Heo¹, M. Madou², and H. Shin¹
¹Ulsan National Institute of Science & Technology (UNIST), SOUTH KOREA and
²University of California, Irvine, USA

Poster Session Imaging & Detection Technologies - Mass Spectrometry

- W13H DIGITAL MICROFLUIDICS COUPLED TO NANO-ELECTROSPRAY IONIZATION MASS SPECTROMETRY FOR SUCCINYLACETONE ANALYSIS IN DRIED BLOOD SPOTS** 1974
 S.C.C. Shih, H. Yang, M.J. Jebrail, R. Fobel, and A.R. Wheeler
 University of Toronto, CANADA
- W14H INTACT PROTEIN SEPARATIONS WITH INHERENTLY BIOCOMPATIBLE ORMOCOMP SEPARATION CHIP WITH INTEGRATED ELECTROSPRAY IONIZATION EMITTER** 1977
 T. Sikanen¹, S. Aura², B. Barrios Lopez¹, S. Franssila², T. Kotiaho¹, and R. Kostianen¹
¹University of Helsinki, FINLAND and ²Aalto University, FINLAND

Poster Session Imaging & Detection Technologies - Optofluidics

- W15H A BIOINSPIRED 3D ARTIFICIAL COMPOUND EYE WITH FOCUS-TUNABLE SINGLE LENSES** 1980
 H. Zeng, H. Borteh, and Y. Zhao
 Ohio State University, USA
- W16H LIQUID-GAS MICROFLUIDICS AS A MICROSTRUCTURING TOOL FOR OPTICS: CONTROLLED DEFECTS INSIDE SELF-ORGANIZED BUBBLE CRYSTALS** 1983
 A.E.D. Allouch¹, K. Bourmine¹, P. Joseph¹, S. Geoffroy², A. Bouchier¹, A. Monmayrant¹,
 O. Gauthier-Lafaye¹, F. Lozes¹, and A.-M. Gue¹
¹LAAS-CNRS, FRANCE and ²Université de Toulouse, FRANCE
- W17H OPTO-FLUIDIC TOMOGRAPHY** 1986
 W. Bishara, S. Isikman, H. Zhu, and A. Ozcan
 University of California, Los Angeles, USA
- W18H THIOL-ENE BASED POLYMER WAVEGUIDES FABRICATED BY UV-ASSISTED SOFT LITHOGRAPHY FOR OPTOFLUIDIC APPLICATIONS** 1989
 G. Zhuang, T.G. Jensen, and J.P. Kutter
 Technical University of Denmark (DTU), DENMARK

Poster Session Imaging & Detection Technologies - Others

- W19H CW-PHOTOACOUSTIC-BASED PROTOCOL FOR THE NON-INVASIVE DETECTION OF AQUEOUS GLUCOSE AT LOW MG/DL CONCENTRATION LEVELS** 1992
 S. Camou, Y. Ueno, and E. Tamechika
 NTT Corporation, JAPAN

W20H IODINATED HYDROGEL MICROPARTICLES AS X-RAY COMPUTED TOMOGRAPHY CONTRAST AGENTS 1995
 C. Wang¹, X. Wang¹, S. Anderson², and X. Zhang¹
¹*Boston University, USA* and ²*Boston University Medical Center, USA*

W21H PULSE WIDTH MODULATION USING CODED CORRUGATED MICROFLUIDIC SIDEWALLS FOR LOW SIGNAL-NOISE RATIO SINGLE CELL IMPEDANCE CYTOMETRY 1998
 M. Javanmard and R.W. Davis
Stanford University, USA

Poster Session Other Applications - Environment

W1I COMPACT GAS-FLOW SENSOR BASED ON ELASTOMERIC TRANSPARENT MICROWIRES 2001
 J. Lee and J. Kim
Iowa State University, USA

W2I LAB ON A BIRD: AUTONOMOUS MICROSYSTEMS FOR *IN-VIVO* REAL TIME BIOPHYSICAL MONITORING OF BIRDS 2004
 A. Gumus, D. Winkler, and D. Erickson
Cornell University, USA

Poster Session Other Applications - Agriculture

W3I INTEGRATED MICROFLUIDICS FOR SEROTYPE IDENTIFICATION OF FOOT AND MOUTH DISEASE VIRUS 2007
 H. Sant, M. Johnson, and B. Gale
University of Utah, USA

Poster Session Other Applications - Separation Science

W4I A NANOFENCE ARRAY FOR DNA ELECTROPHORESIS 2010
 S.-G. Park and K.D. Dorfman
University of Minnesota, USA

W5I COMPLETE POLYMER ELECTROPHORESIS MICROCHIP WITH INTEGRATED HIGH VOLTAGE AND DETECTION ELECTRODES 2013
 R.D. Henderson, R.M. Guijt, A. Henderson, T.W. Lewis, E.F. Hilder, P.R. Haddad, and M.C. Breadmore
University of Tasmania, AUSTRALIA

W6I FRACTIONATION OF MAGNETIC MICROSPHERES FOR MAGNETIC DRUG TARGETING USING DEAN FLOW COMBINED WITH A MAGNETIC OCTUPOLE ON A CHIP 2016
 S. Dutz^{1,2}, M.E. Hayden³, A. Schaap¹, B. Stoeber¹, and U.O. Häfeli¹
¹*University of British Columbia, CANADA*, ²*Institute of Photonic Technology (IPHT), GERMANY*, and ³*Simon Fraser University, CANADA*

W7I MICROFRACTIONATION OF CE-SEPARATED COMPOUNDS INTO DROPLETS 2019
 P. Sehgal, A. Doshi, and A.S. Basu
Wayne State University, USA

W8I OVER 50,000-FOLD SAMPLE PRECONCENTRATION EFFICIENCY IN MICROCHIP ELECTROPHORESIS USING A SIMPLE CHANNEL 2022
 T. Kawai¹, M. Ueda¹, K. Sueyoshi¹, F. Kitagawa², and K. Otsuka¹
¹*Kyoto University, JAPAN* and ²*Hiroaki University, JAPAN*

W9I SIMPLE AND HIGHLY-SENSITIVE ENZYME ACTIVITY ASSAY BASED ON REAGENT-RELEASE CAPILLARY - ISOELECTRIC FOCUSING (RRC-IEF) TOWARDS THE DEVELOPMENT OF MULTI ANALYTE SENSING MICRO DEVICE CAPABLE OF DETECTING BOTH PROTEINS AND ENZYME ACTIVITIES 2025
 Y. Nogawa, H. Yokoyama, K. Kawamura, T. Endo, and H. Hisamoto
Osaka Prefecture University, JAPAN

W10I TOWARDS SELECTORFREE SEPARATION OF CHIRAL MOLECULES: ENANTIOSELECTIVE SEPARATION OF MICROPARTICLES IN A MICROFLUIDIC DEVICE 2028
 L. Bogunovic¹, R. Eichhorn², S. Wegener¹, F.J. Lorenz¹, J. Regtmeier¹, and D. Anselmetti¹
¹Bielefeld University, GERMANY and ²Nordic Institute of Theoretical Physics (NORDITA), SWEDEN

Poster Session Other Applications - Fuel Cells

W11I A NOVEL MICRO FUEL CELL UTILIZING EXTENDED-NANOCHANNELS AS FAST PROTON CONDUCTOR 2031
 H. Chinen¹, Y. Pihosh¹, K. Mawatari^{1,2}, and T. Kitamori^{1,2}
¹University of Tokyo, JAPAN and ²Japan Science and Technology Agency (JST), JAPAN

Poster Session Other Applications - Others

W12I SAMPLE PREPARATION UNIT FOR ONLINE BIO-PROCESSES MONITORING 2034
 C. Wu, F. Bendriaa, M. Harnois, and V. Senez
Université Lille Nord de France, FRANCE and Institut d'Electronique, de Microélectronique et de Nanotechnologie (IEMN), FRANCE

Session 3A3 - Cell Sorting

MAGNETOPHORESIS-ASSISTED HYDRODYNAMIC FILTRATION SYSTEM FOR CONTINUOUS TWO-DIMENSIONAL CELL SORTING 2037
 R. Mitamura, K. Toyama, M. Mizuno, M. Yamada, and M. Seki
Chiba University, JAPAN

BUBBLE-JET ACTUATED CELL-SORTING 2040
 H. Hoefemann¹, N. Bakhtina¹, S. Wadle¹, V. Kondrashov¹, N. Wangler², and R. Zengerle²
¹Institute for Micromachining and Information Technology (HSG-IMIT), GERMANY and ²University of Freiburg - IMTEK, GERMANY

CONTINUOUS CELL SORTING BY DETERMINISTIC CELL ROLLING 2043
 S. Choi¹, J.M. Karp², and R. Karnik¹
¹Massachusetts Institute of Technology, USA and ²Brigham and Women's Hospital, Harvard-MIT Division of Health Sciences and Technology, and Harvard Stem Cell Institute, USA

Session 3B3 - Microparticles in Biomedicine

- ULTRASENSITIVE MULTIPLEXED QUANTIFICATION OF MICRORNA AND PROTEIN PANELS ON ENCODED GEL MICROPARTICLES** 2046
S.C. Chapin¹, D.C. Appleyard¹, D.C. Pregibon², and P.S. Doyle¹
¹Massachusetts Institute of Technology, USA and ²Firefly BioWorks, Inc., USA
- A MICROFLUIDIC DEVICE FOR THE CHARACTERISATION OF EMBOLISATION WITH MICROSPHERICAL BEADS** 2049
D. Carugo¹, L. Capretto¹, S. Willis², A. Lewis², D. Grey², M. Hill¹, and X. Zhang¹
¹University of Southampton, UK and ²Biocompatibles UK Ltd, UK
- TRANSFORMATION OF BI-LAYERED HYDROGEL MICROPARTICLES FOR MICROCARRIER** 2052
T.S. Shim¹, S.-H. Kim², C.-J. Heo¹, H.C. Jeon¹, S.-M. and Yang¹
¹Korea Advanced Institute of Science and Technology (KAIST), SOUTH KOREA and
²Harvard University, USA

Session 3C3 - Nanoscale Particles & Interactions

- 2-D MICROMANIPULATION OF SINGLE NANOPARTICLES IN FREE SOLUTION USING A MICROFLUIDIC TRAP** 2055
M. Tanyeri and C.M. Schroeder
University of Illinois, Urbana-Champaign, USA
- INVESTIGATING PHOTODYNAMIC EFFICIENCY OF TUMOR TARGETED NANOPARTICULAR PHOTOSENSITIZER USING MICROFLUIDIC CHIPS** 2058
X. Lou, G. Kim, Y.K. Lee, R. Kopelman, and E. Yoon
University of Michigan, USA
- MICROFLUIDIC VISUALIZATION OF ENCOUNTER COMPLEX IN ENZYMATIC DIGESTION OF SINGLE DNA MOLECULE BY DUAL MOLECULAR TAGGING** 2061
D. Onoshima¹, N. Kaji¹, M. Tokeshi¹, and Y. Baba^{1,2}
¹Nagoya University, JAPAN and
²National Institute of Advanced Industrial Science and Technology (AIST), JAPAN

Day 4 - Thursday, October 6

Plenary Presentation VI

- SYSTEMS BIOLOGY, TRANSFORMATIONAL TECHNOLOGIES AND THE EMERGENCE OF PROACTIVE P4 MEDICINE** 2064
L. Hood
Institute for Systems Biology, USA

Session 4A1 - Circulating Tumor Cells

- HIGH-THROUGHPUT INERTIAL SEPARATION OF CANCER CELLS FROM HUMAN WHOLE BLOOD IN A CONTRACTION-EXPANSION ARRAY MICROCHANNEL** 2065
M.G. Lee¹, C.Y. Bae¹, S. Choi¹, H.-J. Cho², and J.-K. Park¹
¹Korea Advanced Institute of Science and Technology (KAIST), SOUTH KOREA and
²Konyang University Hospital, SOUTH KOREA
- FUNCTIONAL ASSAYS OF DRUG-TARGET ENGAGEMENT ON CIRCULATING TUMOR CELLS CAPTURED FROM PATIENT BLOOD CORRELATE WITH PATIENT PROGRESSION** 2068
B.J. Kirby¹, E.D. Pratt¹, S.M. Santana¹, J.P. Smith¹, J.P. Gleghorn¹, M. Jodari², G. Gakhar², M. Loftus²,
H. Liu², N.H. Bander², D.M. Nanus², and P.A. Giannakakou²
¹Cornell University, USA and ²Weill Cornell Medical College, USA
- A NOVEL FULLY-AUTOMATED MICROFILTER PLATFORM USING SELECTIVE SIZE AMPLIFICATION OF CIRCULATING TUMOR CELLS** 2071
M.S. Kim¹, J.-G. Lee¹, T.S. Sim¹, Y.J. Kim¹, J.-M. Park^{1,2}, S. Baek¹, J.-M. Oh¹, H. Jeong¹,
H.J. Lee¹, J.-Y. Lee¹, S.S. Kim¹, S.S. Lee¹, and J.C. Park¹
¹Samsung Advanced Institute of Technology (SAIT), SOUTH KOREA and ²Yonsei University, SOUTH KOREA

Session 4B1 - Protein Analysis

- PHOTO-CCLICKABLE SEPARATION GELS ENABLE TARGETED PROTEOMICS OF CANCER BIOMARKER ISOFORMS: A 'SINGLE CHANNEL, MULTI-STAGE' STRATEGY** 2074
A.J. Hughes and A.E. Herr
University of California, Berkeley, USA
- A PLATFORM COMBINING ACTIVABLE MAGNETIC TWEEZERS AND BIPHASIC FLUIDIC PLUGS FOR ULTRA LOW VOLUME AND HIGH THROUGHPUT BIOASSAY** 2077
A. Ali-Cherif, S. Begolo, S. Descroix, J.-L. Viovy, and L. Malaquin
Institut Curie, FRANCE
- ENHANCING/MULTIPLEXING PROTEASE ASSAY WITH DROPLET BASED MICROFLUIDICS USING BIOMOLECULE CONCENTRATOR** 2080
C.H. Chen, A. Sarkar, Y.-A. Song, M.A. Miller, S.J. Kim, L.G. Griffith, D.A. Lauffenburger, and J. Han
Massachusetts Institute of Technology, USA

Session 4C1 - Process Automation and Screening

- PARALLEL MICRO-CHEMOSTATS IN AN AUTOMATED DROPLET MICROFLUIDIC SYSTEM** 2083
S. Jakiela, T.S. Kamiński, O. Cybulski, and P. Garstecki
Polish Academy of Sciences, POLAND
- AN INTEGRATED MICROFLUIDIC SYSTEM FOR AUTOMATING ON-CHIP SELEX PROCESS TO SCREEN TUMOR CELL-SPECIFIC APTAMERS** 2086
C.H. Weng¹, L.Y. Hung², G.B. Lee², H.-I. Lin¹, I.-S. Hsieh¹, S.-C. Shiesh¹, and Y.-L. Chen¹
¹National Cheng Kung University, TAIWAN and ²National Tsing Hua University, TAIWAN
- MICROFLUIDIC PLATFORMS FOR SOLID FORM SCREENING OF PHARMACEUTICALS** 2089
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¹University of Arizona, USA and ²Forensic Science Service, UK
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¹ZyGEM-Microlab Diagnostics, USA and ²Lockheed Martin, USA

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