The Chemical and Biological Microsystems Society (CBMS) is a non profit organization without membership, aiming at the promotion and advancement of science and engineering in the field of chemical and biological microsystems, and to stimulate the exchange of ideas and information between academic, industrial, and government researchers.

Based in the south west of France, Emulseo has been founded in 2018 by Jean-Christophe Baret, Valérie Taly and Florine Maes. Emulseo develops formulations for microfluidic technology such as the surfactant for droplet-based microfluidics named FluoSurf. Emulseo comes from Jean-Christophe Baret Lab at the Centre de Recherche Paul Pascal in Pessac. Emulseo has thus a strong expertise in microfluidics and aims to help and collaborate with customers in improving and developing new products.

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Biomedical Microdevices: BioMEMS and Biomedical Nanotechnology is an interdisciplinary periodical devoted to all aspects of research in the medical diagnostic and therapeutic applications of Micro-Electro-Mechanical Systems (BioMEMS) and nanotechnology for medicine and biology. Subjects of interest include the design, characterization, testing, modeling and clinical validation of microfabricated systems, and their integration on-chip and in larger functional units. The specific interests include systems for neural stimulation and recording, bioseparation technologies, biosensors, and micro/nanotechnologies for cell and tissue research, tissue engineering, cell transplantation, and the controlled release of drugs and biological molecules.

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Awards

Analytical Chemistry Young Innovator Award
This award, sponsored by the Journal of Analytical Chemistry and Chemical and Biological Microsystems Society (CBMS), recognizes the contributions of an individual who has demonstrated exceptional technical advancement and innovation in the field of micro- or nanofluidics in his or her early career.

Lab on a Chip and Dolomite Pioneers in Miniaturization Prize
An award given for young-to-mid-career scientists, the prize recognizes outstanding contributions to the understanding and development of miniaturized systems. Sponsored by Lab on a Chip, Dolomite, and Chemical and Biological Microsystems Society (CBMS).
Awards, continued

**NIST and Lab on a Chip Art in Science Award**

To draw attention to the aesthetic value in scientific illustrations while still conveying scientific merit, the MicroTAS Conference features an award titled, “Under the Looking Glass: Art from the World of Small Science” sponsored by NIST and Lab on a Chip. Applications are encouraged from any person attending the MicroTAS Conference and the winner will be selected by a panel of senior scientists in the field of MicroTAS.

**Lab on a Chip Widmer Poster Award**

The Widmer Poster Award Competition sponsored by the Lab on a Chip is an award given to recognize excellence amongst the annual MicroTAS Conference poster presenters. A review committee will select the overall best-presented poster from the poster session and all presented posters will be reviewed for this honor.

**CHEMINAS Young Researcher Poster Awards**

The Young Researcher Poster Award Competition sponsored by The Society for Chemistry and Micro-Nano Systems (CHEMINAS) to recognize excellence among its participants. A select group of poster judges will select, on a daily basis, the best presented posters from the poster session.

**IMT Masken und Teilungen AG Microfluidics on Glass Poster Award**

To be relevant to the spirit and intent of this Microfluidics on Glass Award, the advancement considered must address at least one of the following: • Use glass as a substrate material for a nano/microfluidic device where the unique optical, electrical, or surface properties of glass provide a profound advantage; • Demonstrate novel biosensing capabilities; • Exhibit hybridisation of glass with other materials (composites); • Establish design for manufacturability with materials and processes that have the potential to be scaled up through transfer to industry

**MDPI Micromachines & the Chemical Biological Microsystems Society (CBMS) Flash Presentation Award Sponsors**

The Flash Presentation Award sponsored by MDPI Micromachines & the Chemical Biological Microsystems Society (CBMS) to recognize excellent poster presenters with flash presentations to advertise their posters in a dynamic and creative manner. Attributes of excellence include being original and highly informative; other attributes including being visually appealing and using humor may be appreciated as well.
**Awards, continued**

**Sensors (MDPI) Outstanding Sensors and Actuators, Detection Technologies Poster Award**
The Outstanding Sensors and Actuators, Detection Technologies Poster Award Competition sponsored by Sensors (MDPI), is to recognize excellence among its participants.

**Biomicrofluidics - Best Paper Award**
The Best Paper Award sponsored by Biomicrofluidics to recognize the three best papers submitted to the MicroTAS Conference.
Workshops - Saturday, October 3

Workshop 1 09:00 - 10:00
Plug and Play: Fluids Delivery and System Integration
Nicolas Verplanck¹, Leanna Levine², Masumi Yamada³, and Edmond Young⁴,
¹Atomic Energy and Alternative Energies Commission - CEA, FRANCE, ²ALine, Inc, USA,
³Chiba University, JAPAN, and ⁴University of Toronto, CANADA

Workshop 4 10:00 - 11:00
Advanced Microscopy Techniques for Cell Imaging in 3D
Petra Paiè¹, Billy Huang², and Vincent Haguet³,
¹Istituto di Fotonica e Nanotecnologie, CNR, ITALY, ²Nebulum Technologies, TAIWAN and
³CEA, Grenoble, FRANCE

Workshop 6 08:00 - 09:00
Surface Functionalization in Microfluidics
Sung Gap Im¹ and Ying-Chih Chang²,³,
¹Korea Advanced Institute of Science and Technology (KAIST), KOREA, ²Academia Sinica, TAIWAN, and
³Stanford University, USA

Workshop 7 08:00 - 09:00
Small-Scale Bioreactors
Krist V. Gernaey¹, Wim De Malsche², Pei-Chen Chiang³, and Katrin Rosenthal⁴,
¹Technical University of Denmark, DENMARK, ²Vrije Universiteit Brussel, BELGIUM,
³Corning Research Center, TAIWAN, and ⁴Technical University Dortmund, GERMANY

Workshop 8 09:00 - 10:00
Bio/3D-Printing
Shrike Zhang¹, Mei He², Oni Basu³, and Hongkai Wu⁴,
¹Harvard Medical School, USA, ²University of Florida, USA, ³University of Chicago, USA, and
⁴Hong Kong University of Science and Technology, HONG KONG

Workshop 9 10:00 - 11:00
Liquid Biopsy - Latest Development in the CTC, Exosome and Free-Floating DNA for Diagnosis
Sunitha Nagrath¹, Valérie Taly², Chi-Hen Chen³, Leon Terstappen³, Fikri Abali³, and Afroditi Nanou⁴,
¹University of Michigan, USA, ²Université de Paris, FRANCE, ³National Tsing Hua University, TAIWAN, and
⁴University of Twente, THE NETHERLANDS

Workshop 12 11:00 - 12:00
Point of Care for Global Health
Fernando Benito Lopez¹, Yuksel Temiz², Jacqueline Linnes³, and Konstantinos Mitsakakis⁴,
¹Universidad del País Vasco, SPAIN, ²IBM, SWITZERLAND, ³Purdue University, USA,
⁴University of Freiburg - IMTEK, GERMANY
Workshops - Sunday, October 4

Workshop 2  08:00 – 09:00
SENSOR INTEGRATION IN MICROFLUIDICS
Federico Paratore¹, Federica Caselli² and Chii-Wann Lin³
¹IBM, SWITZERLAND, ²University of Rome Tor Vergata, ITALY, and ³National Taiwan University, TAIWAN

Workshop 3  09:00 – 10:00
OPEN SPACE MICROFLUIDIC
Jean Berthier¹, Thomas Gervais², and Mohammad Qasaimeh³
¹University of Washington, USA, ²Polytechnique Montréal, Canada, and ³New York University Abu Dhabi, UAE

Workshop 5  11:00 – 12:00
FLOW MODELING AND VISUALIZATION IN MICROFLUIDICS
Henrik Bruus¹, Wei-Hsin Tien², Rune Barnkob¹, and Yuki Minamoto⁴
¹Technical University of Denmark, DENMARK, ²National Taiwan University of Science and Technology, TAIWAN, ³Technical University of Munich, GERMANY, and ⁴Flowsquare+/Tokyo Institute of Technology, JAPAN

Workshop 10  10:30 – 11:30
ORGAN ON CHIP AND MICROFLUIDIC-BASED TISSUE ENGINEERING
Stephanie Descroix¹, Deok-Ho Kim², Rebecca Rose Pompano³, and Anna Herland⁴
¹Institut Curie - CNRS, FRANCE, ²Johns Hopkins University School of Medicine, USA, ³University of Virginia, USA, and ⁴KTH Royal Institute of Technology, SWEDEN

Workshop 11  10:00 – 11:00
DROPLET MICROFLUIDICS
Yegan Erdem¹, Håkan Jönsson², and Charles Baroud³
¹Bilkent University, TURKEY, ²KTH Royal Institute of Technology, SWEDEN, and ³Institut Pasteur, FRANCE
Day 1 - Monday, October 5

Opening Remarks – Welcome Address

08:00  CBMS President
Nicole Pamme, University of Hull, UK

College of Engineering - Georgia Institute of Technology, USA
Steve McLaughlin, Provost and Executive Vice President for Academic Affairs

University of Twente, THE NETHERLANDS
Victor van der Chijs, President Executive Board (CVB)

MicroTAS 2020 Conference Chairs
Séverine Le Gac, University of Twente, THE NETHERLANDS
Hang Lu, Georgia Institute of Technology, USA

Plenary Speaker Presentation I

Session Chairs
Je-Kyun Park, Korea Advanced Institute of Science and Technology (KAIST), KOREA
Manabu Tokeshi, Hokkaido University, JAPAN

08:25 - 09:25
MP-01  ON-CHIP ROBOTICS: EMERGING FUNCTIONS IN MICROFLUIDIC ENVIRONMENT WITH INTEGRATION OF SENSORS & ACTUATORS
Fumihito Arai
University of Tokyo, JAPAN

09:25 - 09:30  Transition Break

Poster Session M1

09:30 - 10:30  Presentations are listed by topic category with their assigned number starting on page 16.

Coffee Break (offline) or join the Daily Quiz Featuring Fluigent

10:30 - 10:45  Join us for a quick quiz hosted by Fluigent. We will use Kahoot! for this quiz, so please install Kahoot! on your smartphone or head over to www.kahoot.it in your web browser. Further instructions available upon joining. Winner will be selected to participate in “Who Wants to be a Millionthaire?” on Friday.

Panel Discussion I

Moderators:
Audrey Bowden, Vanderbilt University, USA
Wouter van der Wijngaart, KTH Royal Institute of Technology, SWEDEN

10:45 - 11:35  WOMEN IN ACADEMIA
Sabeth Verpoorte1, Karen Cheung2, and Lingling Shui3
1University of Groningen, THE NETHERLANDS, 2University of British Columbia, CANADA, and 3South China Normal University, CHINA
Panel Discussion II

Moderators:
Abraham P. Lee, *University of California, Irvine, USA*
Bastien Venzac, *University of Twente, THE NETHERLANDS*

10:45 - 11:35 ETHICS IN SCIENCE
Claire Ribrault¹, Adam Marcus², Philippa Ross³, and Jun Fudano⁴
¹Ateliers des Jours à Venir, FRANCE, ²Retraction Watch, USA, ³Royal Society of Chemistry, UK, and ⁴Waseda University, JAPAN

---

Industrial Stage 1

Session Chairs
Sally Peyman, *University of Leeds, UK*
Shoji Takeuchi, *University of Tokyo, JAPAN*

10:45 - 11:10 1a - Zurich Instruments AG
FAST IMPEDANCE SPECTROSCOPY FOR CHARACTERIZATION AND COUNTING

11:10 - 11:35 1b - microfluidic ChipShop GmbH
WHY ISN'T ELON MUSK DOING MICROFLUIDICS?

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Industrial Stage 2

Session Chairs
Daniel Citterio, *Keio University, JAPAN*
Mei He, *University of Florida, USA*

10:45 - 11:10 2a – Newormics LLC
VIVOCHIP: HIGH-CONTENT ANALYSIS OF DISEASE MODELS AND TOXICOLOGY STUDIES USING C. ELEGANS

11:10 - 11:35 2b – Biond Solutions B.V.
NOURISHING, STIMULATING AND MONITORING CELLS WITH MICROELECTRONICS

11:35 - 11:40 Transition Break

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Poster Session M2

11:40 - 12:40 Presentations are listed by topic category with their assigned number starting on page 16.

12:40 Adjourn for the Day
Day 2 - Tuesday, October 6

Plenary Speaker Presentation II
Session Chairs
Nicole Pamme, University of Hull, UK
Wouter van der Wijngaart, KTH Royal Institute of Technology, SWEDEN

08:00 - 09:00
TP-02 COVID-19: CHANGING DIRECTIONS OF A PERFECT STORM
Herman Goossens
University of Antwerp, BELGIUM

09:00 - 09:05 Transition Break

09:05 - 09:35 Speaker Corner with Herman Goossens

Poster Session T3
09:05 - 10:05 Presentations are listed by topic category with their assigned number starting on page 16.

Coffee Break (offline) or join one of the Daily Quizzes featuring RAN Biotechnologies and Zurich Instruments
10:05 - 10:20 Join us for a quick quiz hosted by RAN Biotechnologies and Zurich Instruments. We will use Kahoot! for this quiz, so please install Kahoot! on your smartphone or head over to www.kahoot.it in your web browser. Further instructions available upon joining. Winner will be selected to participate in “Who Wants to be a Millionthaire?” on Friday.

Plenary Speaker Presentation III
Session Chairs
Don DeVoe, University of Maryland, College Park, USA
Joel Voldman, Massachusetts Institute of Technology (MIT), USA

10:20 - 11:20
TP-03 CHEMICAL SYNTHESIS ENABLED BY MICROFLUIDICS, AUTOMATION, AND MACHINE LEARNING
Klavs F. Jensen
Massachusetts Institute of Technology, USA

11:20 - 11:25 Transition Break

11:25 - 11:55 Speaker Corner with Klavs F. Jensen

Poster Session T4
11:25 - 12:25 Presentations are listed by topic category with their assigned number starting on page 16.

12:25 - 12:30 Transition Break
**Shark Tank**

**Moderators**
Luc Bousse, *Kryptos Biotechnologies, USA*
Michelle Khine, *University of California, Irvine, USA*
Sumita Pennathur, *University of California, Santa Barbara, USA*

**12:30 - 13:30**

**Panel of Judges**
Don Arnold, *Veristad, USA*
Holger Becker, *microfluidic ChipShop, GERMANY*
David Cohen, *Marker AG, USA*
Yolanda Fintschenko, *FounderTraction, USA*
JD Harriman, *Foundation Law Group, USA*
Dirk Heckel, *DH Diagnostics LLC, a Danaher Company, USA*
Carl Meinhart, *University of California, Santa Barbara, USA*
Tomoko Minagawa, *Global Brain Corporation, JAPAN*
Josh Molho, *Milo at ProteinSample, USA*
Akhil Saklecha, *Cleveland Clinic Ventures, USA*
Erez Podoly, *MightyGate, USA*

**13:30**

**Adjourn for the Day**
Day 3 - Wednesday, October 7

Keynote Presentation I
Session Chairs
Kazuma Mawatari, University of Tokyo, JAPAN
Fan-Gang Tseng, National Tsing Hua University, TAIWAN

08:00 - 08:30
WK-01  LIQUID MARBLE BASED DIGITAL MICROFLUIDICS: FUNDAMENTAL PHYSICS AND APPLICATIONS
Nam-Trung Nguyen, Chin Hong Ooi, Raja Vadivelu, Kamalalayam Rajan Sreejith, Jing Jin, Nhat-Khuong Nguyen, and Pradip Singha
Griffith University, AUSTRALIA

Keynote Presentation II
Session Chairs
Stephanie Descroix, Institut Curie CNRS, FRANCE
Jacqueline Linnes, Purdue University, USA

08:00 - 08:30
WK-02  ENGINEERING AND MEASURING SYSTEMIC MULTI-ORGAN INTERACTIONS FOR TRANSLATIONAL APPLICATIONS
Lor Huai Chong¹, Hsih Yin Tan¹, Louis Ong¹ ², Christopher Tostado², and Yi-Chin Toh¹
"Queensland University of Technology, AUSTRALIA and ²National University of Singapore, SINGAPORE"

Keynote Presentation III
Session Chairs
Ian Papautsky, University of Illinois, Chicago, USA
Hongkai Wu, Hong Kong University of Science and Technology, HONG KONG

08:00 - 08:30
WK-03  INKJET-BASED HIGH THROUGHPUT SINGLE CELL DISPENSING
Karen C. Cheung
University of British Columbia, CANADA

Keynote Presentation IV
Session Chairs
Hugh Fan, University of Florida, USA
Chang-Soo Lee, Chungnam National University, KOREA

08:00 - 08:30
WK-04  MICROFLUIDICS FOR LIQUID BIOPSY
Chao Liu, Fei Tian, and Jiashu Sun
National Center for Nanoscience and Technology, CHINA

08:30 - 08:35  Transition Break

08:35 – 09:05  Speaker Corners
Nam-Trung Nguyen, Yi-Chin Toh, Karen C. Cheung, and Jiashu Sun
### Poster Session W5

08:35 - 09:35  Presentations are listed by topic category with their assigned number starting on page 16.

09:35 - 09:40  Transition Break

### Panel Discussion III

**Moderators:**
Yi Chin Toh, *Queensland University of Technology, AUSTRALIA*
Wouter van der Wijngaart, *KTH Royal Institute of Technology, SWEDEN*

09:40 - 10:30  ADVICE FOR EARLY CAREERS IN ACADEMIA
Albert van den Berg¹, Maria Tenje², Joel Voldman³, Jacqueline Linnes⁴, Yoon-Kyoung Cho⁵, and Ya-Yu Chiang⁶

¹*University of Twente, THE NETHERLANDS*, ²*Uppsala University, SWEDEN*, ³*Massachusetts Institute of Technology, USA*, ⁴*Purdue University, USA*, ⁵*Ulsan National Institute of Science and Technology (UNIST), KOREA*, and ⁶*National Chung-Hsing University, TAIWAN*

### Panel Discussion IV

**Moderators:**
Aaron Wheeler, *University of Toronto, CANADA*
Monica Brivio, *Micronit Microtechnologies, THE NETHERLANDS*

09:40 - 10:30  WOMEN IN INDUSTRY
Leanna Levine¹, Alissa Fitzgerald², Claudia Gaertner³, France Hamber⁴, Mika Mizunuma⁵, and Hong Ya Ying⁶

¹*A-Line, USA*, ²*A.M. Fitzgerald & Associates, USA*, ³*microfluidic ChipShop, GERMANY*, ⁴*Fluigent, FRANCE*, ⁵*CRAIF, JAPAN*, and ⁶*Shenzhen Shineway Technology Corp., HONG KONG*

### Industrial Stage 3

**Session Chairs**
Joan Bienvenue, *University of Virginia, USA*
Kevin Nichols, *Global Health Labs, USA*

09:40 - 10:05  **BOOK PUBLISHING @ SPRINGER NATURE**

10:05 - 10:30  **Fluigent/ BEOnChip: A STRATEGIC PARTNERSHIP TO BETTER ADDRESS THE NEEDS OF THE MULTIDISCIPLINARY FIELD OF ORGAN ON CHIP**

### Industrial Stage 4

**Session Chairs**
Cullen Buie, *Massachusetts Institute of Technology, USA*
Rebecca Pompano, *University of Virginia, USA*

09:40 - 10:05  **CHALLENGES AND SOLUTIONS FOR NEW DIAGNOSTIC CONSUMABLE MANUFACTURING**

10:05 - 10:30  **CHALLENGES AND SOLUTIONS FOR NEW DIAGNOSTIC CONSUMABLE MANUFACTURING**
Coffee Break (offline) or join the Daily Quiz featuring Emulseo

Join us for a quick quiz hosted by Emulseo. We will use Kahoot! for this quiz, so please install Kahoot! on your smartphone or head over to www.kahoot.it in your web browser. Further instructions available upon joining. Winner will be selected to participate in “Who Wants to be a Millionthaire?” on Friday.

Poster Session W6

10:45 - 11:45 Presentations are listed by topic category with their assigned number starting on page 16.

11:45 - 11:50 Transition Break

Plenary Speaker Presentation IV

Session Chairs
Hang Lu, Georgia Institute of Technology, USA
Jonas Tegenfeldt, Lund University, SWEDEN

11:50 - 12:50

WP-04 SKIN-INSPIRED MATERIALS, SENSORS AND APPLICATIONS
Zhenan Bao
Stanford University, USA

12:55 - 13:25 Speaker Corner with Zhenan Bao

13:25 Adjourn for the Day
Day 4 - Thursday, October 8

Plenary Speaker Presentation V
Session Chairs
Yoon-Kyoung Cho, Ulsan National Institute of Science and Technology (UNIST), KOREA
Amy Herr, University of California, Berkeley, USA

08:00 - 09:00
ThP-05 BIOCOMPATIBLE INTERFACES OF NANOSTRUCTURED POLYMER FOR ADVANCED MEDICAL AND HEALTHCARE DEVICES
Madoka Takai
University of Tokyo, JAPAN

09:00 - 09:05 Transition Break

09:05 – 09:35 Speaker Corner with Madoka Takai

Poster Session Th7

09:05 - 10:05 Presentations are listed by topic category with their assigned number starting on page 16.

Coffee Break (offline) or join the Daily Quiz featuring Nanoscribe GmbH

10:05 - 10:20 Join us for a quick quiz hosted by Nanoscribe GmbH. We will use Kahoot! for this quiz, so please install Kahoot! on your smartphone or head over to www.kahoot.it in your web browser. Further instructions available upon joining. Winner will be selected to participate in “Who Wants to be a Millionthaire?” on Friday.

Panel Discussion V
Moderators:
Michinao Hashimoto, Singapore University of Technology and Design, SINGAPORE
Agnieszka Zuchowska, University of Twente, THE NETHERLANDS

10:20 - 11:10 PARENTING IN SCIENCE AND WORK-LIFE BALANCE
Agnes Tixier-Mita1, Yoshio Mita1, Yong Zeng2, Mei He2, Jonas Tegenfeldt3, and Christelle Prinz3
1University of Tokyo, JAPAN, 2University of Florida, USA, and 3Lund University, SWEDEN

Panel Discussion VI
Moderators:
Yi Chin Toh, Queensland University of Technology, AUSTRALIA
Daniel Citterio, Keio University, JAPAN

10:20 - 11:10 STUDENTS AND POSTDOCS STUDYING ABROAD
Petra Dittrich1, Gaspard Pardon2, Dino Di Carlo3, Darius Rackus1, Anderson Shum4, and Christopher Tostado5
1ETH Zürich, Basel, SWITZERLAND, 2Stanford University, USA, 3University of California, Los Angeles, USA, 4Hong Kong University, HONG KONG, and 5Genome Institute of Singapore, SINGAPORE
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<tr>
<th>Time</th>
<th>Session Chairs</th>
<th>Topic</th>
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<tr>
<td>10:20 - 10:45</td>
<td>Ya-Yu Chiang, National Chung Hsing University, TAIWAN, John Oakey, University of Wyoming, USA</td>
<td>5a – Jobst Technologies GmbH NANO/ MICRO FLOW SYSTEMS, AND BIOSENSORS</td>
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<td>10:45 – 11:10</td>
<td>John Oakey, University of Wyoming, USA</td>
<td>5b – PreciGenome LLC A TOOL BOX FOR MICROFLUIDIC SYSTEM INTEGRATION AND ITS APPLICATIONS</td>
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<td>10:20 - 10:45</td>
<td>Axel Guenther, University of Toronto, CANADA, Tiina Sikanen, University of Helsinki, FINLAND</td>
<td>6a – Vision Research, AMETEK HIGH-SPEED IMAGING SOLUTIONS FOR IMAGE CYTOMETRY</td>
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<td>10:45 - 11:10</td>
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<td>6b – STRATEC Consumables GmbH COLLABORATION BY DESIGN – HOW TO INTEGRATE PARTNERS IN THE</td>
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<td>DEVELOPMENT AND MANUFACTURING OF NEXT GENERATION DIAGNOSTICS</td>
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<td>11:10 - 11:15</td>
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<td>Transition Break</td>
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<td>11:15 - 12:15</td>
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<td>Presentations are listed by topic category with their assigned number starting on page 16.</td>
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<td>Transition Break</td>
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<tr>
<td>12:20 - 12:50</td>
<td>Stephen Jacobson, Indiana University, USA, Marcel Utz, University of Southampton, UK</td>
<td>Keynote Presentation V EMERGING WATER TREATMENT TECHNOLOGIES</td>
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<td>Technion - Israel Institute of Technology, ISRAEL</td>
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<td>12:20 - 12:50</td>
<td>Katherine Elvira, University of Victoria, CANADA, Han Wei Hou, Nanyang Technological University,</td>
<td>Keynote Presentation VI NANOSTRUCTURES FOR PROBING AND TRANSFECTING LIVING CELLS</td>
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<td>SINGAPORE</td>
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<td>12:20 - 12:50</td>
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<td>Christelle N. Prinz</td>
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<td>Lund University, SWEDEN</td>
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### Keynote Presentation VII

**Session Chairs**
- Lourdes Basabe, *University of the Basque Country and IKERBASQUE, SPAIN*
- Charles Henry, *Colorado State University, USA*

<table>
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<tr>
<th>Time</th>
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| 12:20 - 12:50 | EXPANDING THE (i)SIMPLE MICROFLUIDIC TOOLBOX TOWARDS ADVANCED DIAGNOSTICS AND THERAPEUTICS  

Dries Vloemans, Lorenz Van Hileghem, Henry Ordutowski, Dragana Spasic, Francesco Dal Dosso, and Jeroen Lammertyn  

*KU Leuven, BELGIUM* |

### Keynote Presentation VIII

**Session Chairs**
- Govind Kaigala, *IBM Research, Zurich, SWITZERLAND*
- Darwin Reyes, *National Institute of Standards and Technology (NIST), USA*

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<th>Time</th>
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| 12:20 - 12:50 | SQUEEZING DNA IN NANOCHANNELS  

Kevin D. Dorfman  

*University of Minnesota, USA* |

12:50 - 12:55  Transition Break

12:55 – 13:25  **Speaker Corners**
- Matthew E. Suss, Christelle N. Prinz, Jeroen Lammertyn, and Kevin D. Dorfman

13:25  **Adjourn for the Day**
Day 5 - Friday, October 9

Plenary Speaker Presentation VI
Session Chairs
Petra Dittrich, ETH Zürich, Basel, SWITZERLAND
Séverine Le Gac, University of Twente, THE NETHERLANDS

08:00 - 09:00
FP-06 WATER-REPELLENT MATERIALS: A FEW TRICKS WE LEARNT FROM NATURE, AND BEYOND
David Quéré
ESPCI-Paris, PSL Research University, FRANCE

09:00 - 09:05 Transition

09:05 - 09:35 Speaker Corner with David Quéré

Analytical Chemistry
Young Innovator Award and Presentation

09:05 - 09:25 BUILDING SYNTHETIC HUMAN EMBRYO-LIKE STRUCTURES
Jianping Fu
University of Michigan, Ann Arbor, USA

Lab on a Chip and Dolomite
Pioneers of Miniaturization Lectureship Award and Presentation

09:25 - 09:45 CLINICAL TRANSLATION OF MICROFLUIDIC SYSTEMS AND LESSONS LEARNED FROM THE COVID-19 PANDEMIC
Wilbur A. Lam1,2
1Emory University, USA and 2Georgia Technical University, USA

09:45 - 09:50 Transition

Who Wants to be a Millionthaire?
Moderator
Darius Rackus, ETH Zürich, Basel, SWITZERLAND

Join us for “Who Wants to be a Millionthaire?”, the very first MicroTAS gameshow! Twelve contestants will compete in rounds of trivia, games of skill, and silly activities all for a chance to win one free registration to MicroTAS 2021 in Palm Springs. Contestants will be selected through participation in the daily quizzes. Two lucky attendees will also have the chance to enter. There will be lots of audience participation, so join in for a little bit of fun at the end of this week!

10:50 - 11:05 Coffee Break (offline)
Award Ceremony
Session Chairs
Stephanie Descroix, Institut Curie CNRS, FRANCE
Thomas Gervais, Polytechnique Montréal, CANADA
Je-Kyun Park, Korea Advanced Institute of Science and Technology (KAIST), KOREA

11:05 – 12:15 CHEMINAS - Young Researcher Poster Awards
Lab on a Chip - Widmer Poster Award
IMT Masken und Teilungen AG - Microfluidics on Glass Poster Award
Sensors (MDPI) - Outstanding Sensors and Actuators, Detection Technologies Poster Award
National Institute of Standards and Technology (NIST) and Lab on a Chip - Art in Science Award
Microfluidics (MDPI) and CBMS - Flash Poster Presentation Awards
Biomicrofluidics (AIP) - Best Paper Awards

Closing Remarks

12:15 MicroTAS 2020 Conference Chairs
Séverine Le Gac, University of Twente, THE NETHERLANDS
Hang Lu, Georgia Institute of Technology, USA

12:35 Conference Adjourns
POSTER PRESENTATIONS

| M1 | Monday, October 5 | 09:30 - 10:30 |
| T3 | Tuesday, October 6 | 09:05 - 10:05 |
| W5 | Wednesday, October 7 | 08:35 - 09:35 |
| Th7 | Thursday, October 8 | 09:05 - 10:05 |
| M2 | Monday, October 5 | 11:40 - 12:40 |
| T4 | Tuesday, October 6 | 11:25 - 12:25 |
| W6 | Wednesday, October 7 | 10:45 - 11:45 |
| Th8 | Thursday, October 8 | 11:15 - 12:15 |

Classification Chart
(last character of poster number)

| a | Fundamentals in Microfluidics and Nanofluidics |
| b | Micro- and Nanoengineering |
| c | Sensors and Detection Technologies |
| d | Integrated Microfluidic Platforms |
| e | Cells, Organisms and Organs on a Chip |
| f | Diagnostics, Drug Testing & Personalized Medicine |
| g | Other Applications of Microfluidics |

a - Fundamentals in Microfluidics and Nanofluidics

Electrokinetic Phenomena

M2-201.a AN ELECTROKINETIC-BASED LARGE VOLUME CONCENTRATOR FOR ULTRA-LOW ABUNDANT TARGET DETECTION

Hyukjin J. Kwon, Bryan Lenneman, Timothy Lu, Kyungyong Choi, and Jongyoon Han
Massachusetts Institute of Technology, USA

T3-301.a CHARACTERIZING SINGLE SINONASAL SQUAMOUS CELL CARCINOMA USING DI-ELECTROPHORESIS AND ELECTROROTATION

Thao N.P. Mai\(^1\), Sakina Bensalem\(^1\), Bénédicte Thiebot\(^2\), Philippe Manivet\(^1\), Juan Pelta\(^2\), and Bruno Le Pioufle\(^1\)
\(^1\)Ecole Normale Superieure de Paris-Saclay, FRANCE, \(^2\)Université Paris-Saclay, Université Evry, FRANCE, and \(^3\)University of Paris 10, FRANCE

T4-401.a CONTROLLING AC-ELECTROOSMOTIC VORTEX FLOWS BY SHAPING THE CHANNEL CROSS SECTION

Christina Tiflidis\(^{1,2}\), Eiko Westerbeek\(^{1,2}\), Koen F.A. Jorissen\(^2\), Wouter Olthuis\(^2\), Jan Eijkel\(^2\), and Wim De Malsche\(^1\)
\(^1\)Vrije Universiteit Brussel, BELGIUM and \(^2\)University of Twente, THE NETHERLANDS

W5-501.a DIELECTROPHORETIC EQUILIBRIUM OF COMPLEX PARTICLES

Tom Elkeles\(^1\), Pablo Garcia-Sanchez\(^2\), Wu Yue\(^1\), Antonio Ramos\(^2\), and Gilad Yossifon\(^1\)
\(^1\)Technion – Israel Institute of Technology, ISRAEL and \(^2\)Universidad de Sevilla, SPAIN

W6-601.a ELECTROKINETIC WALL EFFECT MECHANISMS AND APPLICATIONS

Jason P. Beech, Bao Dang Ho, Oskar Ström, and Jonas O. Tegenfeldt
Lund University, SWEDEN
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<tr>
<td>Th7-701.a</td>
<td>N-DEP ENHANCED LATERAL DISPLACEMENT IN DLD DEVICE TO FOR HIGH EFFICIENT CELL SORTING</td>
<td>Chia-Hsin Chang¹ and Fan-Gang Tseng¹ ²</td>
<td>National Tsing Hua University, TAIWAN and Academia Sinica, TAIWAN</td>
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<td>a - Fundamentals in Microfluidics and Nanofluidics</td>
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<tr>
<td>M1-102.a</td>
<td>A NOVEL PARTITIONING PLATFORM TOWARDS THE LOW-COST, RAPIDLY DEPLOYABLE, DIGITAL DETECTION OF SARS-COV-2</td>
<td>Maria Alvarez Amador, Yuhe Jiang, Ling Li, and Eric Brouzes</td>
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<td>M1-103.a</td>
<td>DEFORMABILITY-BASED MICROFLUIDIC MICRODROPLET SORTING AS A SCREENING METHOD FOR SINGLE AGAROLYTIC BACTERIAL CELLS</td>
<td>Mikihisa Muta¹, Kai Saito¹, Ryo Iizuka¹, Wataru Kawakubo², Dong Hyun Yoon², Mei Ito³, Yuji Hatada³, Tetsushi Sekiguchi², Shuichi Shoji², and Takashi Funatsu¹</td>
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<td>M1-104.a</td>
<td>ENDOTHELIAL-CELL SPROUTING ASSAY WITH MULTIPLE INTERACTING SEEDS AS A PLATFORM TO STUDY ANGIogenesis</td>
<td>Katarzyna Rojek and Jan Guzowski</td>
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<td>M1-105.a</td>
<td>IMAGE ANALYSIS EXPLORATION: CASE FOR DROPLET MICROFLUIDICS</td>
<td>Immanuel Sanka, Simona Bartkova, Pille Pata, Olli-Pekka Smolander, and Ott Scheler</td>
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<td>M1-106.a</td>
<td>PARALLEL DROPLET GENERATION OF LINEAR CONCENTRATION GRADIENT FOR ANTIMICROBIAL SUSCEPTIBILITY TESTING OF ESCHERICHIA COLI O157:H7</td>
<td>Jae Seong Kim¹, Byungjin Lee¹, Heon-Ho Jeong², Dong-Ho Kim¹, Kyoung Han Kim¹, and Chang-Soo Lee¹</td>
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<td>M1-107.a</td>
<td>TOWARDS HIGH-THROUGHPUT SCREENING FOR DRUG DISCOVERY IN MULTI SPLITTING AND MERGING SYSTEM USING MICROVALVES</td>
<td>Sagar N. Agnihotri¹, Mohammad Reza Raveshi¹, Rajneesh Bhardwaj², and Adrian Neild¹</td>
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<td>M2-202.a</td>
<td>A SAMPLE INJECTION INTERFACE OF MASS SPECTROMETRY UTILIZING FEMTOLITER-DROPLET SHOOTER BY MICROFLUIDICS</td>
<td>Yuto Takagi¹, Yutaka Kazoe², and Takehiko Kitamori¹ ³</td>
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<td>M2-203.a</td>
<td>DROPLET GENERATOR IN A SINGLE TUBE FOR DNA AMPLIFICATION</td>
<td>Shaw-Hwa Parng, Ping-Jung Wu, Yu-Yin Tsai, Ruey-Shyan Hong, and Su-Jan Lee</td>
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Technion – Israel Institute of Technology, ISRAEL

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Dege Li¹, Yi Cao¹, Bingfang Huang¹, Chao Zheng¹, Yonghong Liu¹, and Yanzhen Zhang¹,²
¹China University of Petroleum (East China), CHINA and ²Swinburne University of Technology, AUSTRALIA

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Ilyesse Bihi, Pierre Gelin, and Wim De Malsche
Vrije Universiteit Brussel, BELGIUM

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Piangrawee Santivongskul¹, Mao Fukuyama¹,², and Akihide Hibara¹
¹Tohoku University, JAPAN and ²Japan Science and Technology Agency (JST), JAPAN

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Simon Dumas, Mathilde Richerd, Marco Serra, and Stéphanie Descroix
Institut Curie, FRANCE

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Iwona Ziemecka¹, Ilyesse Bihi¹, Pierre Gelin¹, Guy Van Assche², Suzy Vaupre¹, Roberto Teixeira¹, Dominique Maes¹, and Wim De Malsche¹
¹Vrije Universiteit Brussel, BELGIUM and ²Devan Chemicals NV, BELGIUM

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Auburn University, USA

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Gareth W.H. Evans¹, Jameelah Salahuddin¹, Wahida T. Bhuiyan¹, Brett Warren², and Xize Niu¹,²
¹University of Southampton, UK and ²SouthWestSensor Ltd., UK

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Chinese Academy of Sciences, CHINA

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Morteza Jeyhani¹,², Risavarshni Thevakumaran¹,², Niki Abbasi¹,², Dae Kun Hwang¹,², and Scott S. H. Tsai¹,²
¹Ryerson University, CANADA and ²St. Michael’s Hospital, CANADA

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Sepehr Elahi¹, Ali Kalantarifard¹, Fatemeh Kalantarifard¹, and Caglar Elbukten¹,³
¹Bilkent University, TURKEY, ²Bogazici University, TURKEY, and ³University of Oulu, FINLAND

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Wayne State University, USA
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1Ryerson University, CANADA and 2St. Michael’s Hospital, CANADA

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1University of Maryland, College Park, USA and 2National Cancer Institute, USA

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1Ryerson University, CANADA and 2St. Michael’s Hospital, CANADA

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1University of Southampton, UK and 2SouthWestSensor Ltd., UK

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1Kyushu University, JAPAN and 2Tokyo Institute of Technology, JAPAN

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Mun Hong Loo¹, Yuta Nakagawa¹, Akihiro Isozaki¹,², and Keisuke Goda¹,³,⁴
¹University of Tokyo, JAPAN, ²Kanagawa Institute of Industrial Science and Technology, JAPAN, ³University of California, Los Angeles, USA, and ⁴Wuhan University, China

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Junyue Chen¹,², Weiliang Shu¹, Ying Tan², Hongtao Feng¹, Yimo Yan², and Yan Chen¹
¹Chinese Academy of Sciences, CHINA and ²Tsinghua University, CHINA

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Kaijian Zhu¹,², Wen Yue¹, and Dahai Ren²
¹China University of Geosciences, CHINA and ²Tsinghua University, CHINA

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Bruna G. Carvalho¹, Thiago B. Taketa¹, Bianca B.M. Garcia², Sang W. Han², and Lucimara G. de la Torre¹
¹University of Campinas, BRAZIL and ²São Paulo Federal University, BRAZIL

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Edo A.G. de Kruijf¹, Chris L. Kennedy², Corentin B.M. Tregouët³, Alfons van Blaaderen², Jan C.T. Eijkel¹, and Mathieu Odijk¹
¹University of Twente, THE NETHERLANDS, ²Utrecht University, THE NETHERLANDS, and ³University of Rennes, FRANCE

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Won Han and Joong Ho Shin
Pukyong National University, KOREA
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<td>$^1$Chinese Academy of Sciences, CHINA and $^2$ACXEL TECH LTD, UK</td>
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<td>$^1$University of the Basque Country, SPAIN and $^2$Basque Foundation of Science, IKERBASQUE, SPAIN</td>
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<td>$^1$University of Freiburg, GERMANY and $^2$Hahn-Schickard, GERMANY</td>
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<td>$^1$National Research Council, CANADA and $^2$Industrial Technology Research Institute, TAIWAN</td>
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<td>$^1$Hahn-Schickard, GERMANY, $^2$University Medical Center Schleswig Holstein, GERMANY, and $^3$University of Freiburg, GERMANY</td>
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<td>$^1$Ulsan National Institute of Science &amp; Technology (UNIST), KOREA and $^2$Institute for Basic Science (IBS) &lt; KOREA</td>
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\(^1\)Washington University, St. Louis, USA and \(^2\)Technical University of Munich, GERMANY

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\(^1\)Leitat Technological Center, SPAIN and \(^2\)Technical University of Catalonia, SPAIN

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University of Southampton, UK and ²University of Bradford, UK

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¹Comsats University Islamabad, PAKISTAN and ²University of Southampton, UK

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Ilhoon Jang¹,² and Charles S. Henry²
¹Hanyang University, KOREA and ²Colorado State University, USA

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Antonio J. Hijano¹, Ignacio G. Loscertales¹, and Francisco J. Higuera²
¹Universidad de Málaga, SPAIN and ²Universidad Politecnica de Madrid, SPAIN
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¹Osaka Prefecture University, JAPAN and ²Japan Science and Technology Agency (JST), JAPAN

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¹University of Toronto, CANADA and ²University of Waterloo, CANADA

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¹University of Sydney, AUSTRALIA and ²Heart Research Institute, AUSTRALIA

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1North Carolina State University, USA, 2University of North Carolina, Chapel Hill, USA, and 3Florida International University, USA

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Kirandeep K. Gill1, Patrick Hester2, Pedro Estrela1, and Nuno M. Reis1
1University of Bath, UK and 2Lamina Dielectrics Ltd., UK

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Ali C. Atik, Ender Yıldırım, and Haluk Külah
Middle East Technical University, TURKEY

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Ali C. Atik, Ender Yıldırım, and Haluk Külah
Middle East Technical University, TURKEY

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Ibragim Abu Dagga1,2 and Mohamed Abdelgawad1
1American University of Sharjah, UAE and 2Khalifa University of Science and Technology, UAE

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University of Toronto, CANADA

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Harrson S. Santana1 and João L. Silva Jr.2
1University of Campinas, BRAZIL and 2Federal University of ABC, BRAZIL
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¹National Tsing Hua University, TAIWAN and ²Academia Sinica, TAIWAN

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¹University of Rennes, FRANCE, ²École Normale Supérieure de Rennes, FRANCE, and
³Université de Paris, FRANCE

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¹Indian Institute of Technology, Madras, INDIA and ²University of Waterloo, CANADA

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¹Indian Institute of Technology, Bombay, INDIA and
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¹University of Hong Kong, HONG KONG and ²Shenzhen University, CHINA

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¹University of Southampton, UK and ²Universidad de Sevilla, SPAIN

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1Fundació Eurecat, SPAIN and 2IMB-CNMI (CSIC), SPAIN

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¹University of Idaho, USA, ²New York University Abu Dhabi, UAE, and ³New York University, USA

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¹Eindhoven University of Technology, THE NETHERLANDS, ²Trinity College Dublin, IRELAND, ³Queen Mary University of London, UK and ⁴Dublin City University, IRELAND

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\textsuperscript{1}Hitachi, Ltd., JAPAN and \textsuperscript{2}Hitachi High-Tech Corporation, JAPAN

M1-131.c  REAL-TIME STRAIN MEASUREMENT OF PIEZOELECTRICALLY ACTUATED POLYDIMETHYLSILOXANE (PDMS) BAR USING FIBRE BRAGG GRATING SENSOR FOR BIOMEDICAL APPLICATIONS
Rahul Kumar\textsuperscript{1}, Bruno Rente\textsuperscript{1}, Souvik Ghosh\textsuperscript{1}, Christabel Tan\textsuperscript{2}, Tong Sun\textsuperscript{1}, and Kenneth Grattan\textsuperscript{1}
\textsuperscript{1}City University of London, UK and \textsuperscript{2}University of Hertfordshire, UK

M2-230.c  REAL-TIME TRACKING OF PARTICLES AT >1,200 EVENTS PER SECOND USING GPU-ACCELERATED IMAGE PROCESSING
Arpith Vedhanayagam and Amar S. Basu
Wayne State University, USA

T3-329.c  FABRICATION AND CHARACTERIZATION OF AXIAL VIEW LIQUID ELECTRODE PLASMA
Yueh-Han Huang\textsuperscript{1}, Daisuke Hirose\textsuperscript{2}, Meng-Jiy Wang\textsuperscript{1}, and Yuzuru Takamura\textsuperscript{2}
\textsuperscript{1}National Taiwan University of Science and Technology, TAIWAN and \textsuperscript{2}Japan Advanced Institute of Science and Technology, JAPAN
REFERENCE PH MICROSENSR FOR FLUORESCENCE MEASUREMENT IN CELL CULTURE ENVIRONMENT WITHOUT INITIAL PH INFORMATION
Hisataka Maruyama\(^1\) and Fumihito Arai\(^2\)
\(^1\)Nagoya University, JAPAN and \(^2\)University of Tokyo, JAPAN

HIGH RESOLUTION PATTERNING OF HYDROGEL SENSING MOTIFS WITHIN FIBROUS SUBSTRATES FOR HIGHLY SENSITIVE AND MULTIPLEXED DETECTION OF NUCLEIC ACID BIOMARKERS
Dana Al Sulaiman, Sarah J. Shapiro, Jose Gomez-Marquez, and Patrick S. Doyle
Massachusetts Institute of Technology, USA

SOLVENT-ENHANCED PHOTOTHERMAL MOLECULE DETECTION METHOD FOR NANOFUIDICS AND ITS APPLICATION TO FEMTOLITER NORMAL-PHASE CHROMATOGRAPHY
Yoshiyuki Tsuyama, Kyojiro Morikawa, and Kazuma Mawatari
University of Tokyo, JAPAN

A MODULAR SMARTPHONE-ENABLED PLATFORM TO DETECT NUCLEIC ACID TARGETS BASED ON QUANTIFICATION OF COALESCED LAMP PRECIPITATE
Manaswini Masetty, Joseph Sepate, Sanghyun Do, and Aashish Priye
University of Cincinnati, USA

INTEGRATED MICROFLUIDIC SERS CHIP FOR THE CAPTURE AND DETECTION OF PATHOGENIC BACTERIA IN THE AIR
Xi Su, Rui Ren, Shifang Li, Li Chen, and Yi Xu
Chongqing University, CHINA

SPATIOTEMPORAL MAPPING OF A HYPOXIA-FFA SYNERGY ON BETA CELL CALCIUM OSCILLATIONS
Kai Duan and Joe Fujiou Lo
University of Michigan, Dearborn, USA

ACHIEVING SUB-MICROMETER IMAGING RESOLUTION IN PDMS SOFT LITHOGRAPHY DEVICES USING MODIFIED INVERTED SELECTIVE PLANE ILLUMINATION MICROSCOPY
Tienan Xu\(^1\), Yean Jin Lim\(^1\), Yujie Zheng\(^1\), Moon Sun Jung\(^2\), Katharina Gaus\(^2\), Elizabeth E. Gardiner\(^1\), and Woei Ming Lee\(^1\)
\(^1\)Australian National University, AUSTRALIA and \(^2\)University of New South Wales, AUSTRALIA

LOW-COST AND PORTABLE PHOTONIC IMMUNO-SENSOR BASED ON GUIDED MODE RESONANCE
Alexander Drayton, Kezheng Li, Matthew Simmons, Christopher Reardon, and Thomas F. Krauss
University of York, UK

ULTRASENSITIVE PLASMONIC SENSORS ON OPTICAL FIBERS END-FACE
Alba Calatayud-Sanchez\(^1\), Angel Ortega-Gomez\(^1\), Javier Barroso\(^1\), Joseba Zubia\(^1\), Fernando Benito-Lopez\(^1\), Joel Villatoro\(^1,2\), and Lourdes Basabe-Desmonts\(^1,2\)
\(^1\)University of the Basque Country, SPAIN and \(^2\)Basque Foundation of Science, IKERBASQUE, SPAIN

DETECTION OF HYDROGEN SULPHIDE IN HUMAN BLOOD PLASMA ON A MICROFLUIDIC PLATFORM
Ravindra Gaikwad, Karunya Ramsamy, and Ashis K. Sen
Indian Institute of Technology, Madras, INDIA
Th7-729.c METAL ION ENRICHMENT USING ORGANIC NANOCRYSTAL COATED-MICROFLUIDIC PAPER ANALYTICAL DEVICES TO ACHIEVE HIGHLY SENSITIVE COLORIMETRIC DETECTION
Grasianto, Mao Fukuyama, Derrick Mott, Yoshitaka Koseki, Hitoshi Kasai, and Akihide Hibara
Tohoku University, JAPAN

Th8-828.c DEVELOPMENT OF A SCANNING PIV TECHNIQUE FOR 3D CHARACTERIZATION OF FLOWS IN MICROCHANNELS
Quentin Galand, Pierre Gelin, Ketki Srivastava, David Blinder, Peter Schelkens, and Wim De Malsche
Vrije Universiteit Brussel, BELGIUM

Th8-829.c RAPID IDENTIFICATION OF HCC SERUM BASED ON MICROFLUIDIC SERS CHIP
Xinyu He, Chuang Ge, Li Chen, and Yi Xu
Chongqing University, CHINA

**Sensors and Detection Technologies**

**M1-132.c** FLEXIBLE POLYOLEFIN-BASED DOPAMINE SENSOR WITH HIGH SELECTIVITY
Wenzheng He¹, Ruitao Liu², Peng Zhou², Qingyuan Liu¹, Tianhong Cui²
¹Tsinghua University, CHINA and ²University of Minnesota, USA

**M1-133.c** WIRELESS AND BATTERY-FREE DIGESTIBLE SENSOR FOR INTESTINAL BACTERIA MONITORING
Ayaka Inami, Erika Iyama, Shun Itai, and Hiroaki Onoe
Keio University, JAPAN

**M2-231.c** GRADIENT ELUTION MOVING BOUNDARY ELECTROPHORESIS OF HOMEMADE FUEL-OXIDIZER EXPLOSIVES
Shannon T. Krauss¹, Dillon Jobes², and Thomas P. Forbes¹
¹National Institute of Standards and Technology (NIST), USA and ²Tulane University, USA

**T3-331.c** LOW-COST LOW-MOTION ARTIFACT ON-SKIN SENSOR-SYSTEM FOR PHYSIOLOGICAL SIGNAL RECORDING
Anan Zhang, Thalia Hua, Damian Redfearn, and S.K. Ameri
Queen's University, CANADA

**T4-431.c** PAPER MICROFLUIDICS DEVICE FOR LABEL-FREE DETECTION OF MESENCHYMAL STEM CELLS SECRETED VASCULAR ENDOTHELIAL GROWTH FACTOR
Enrique Azuaje Hualde¹, Marian Martínez de Pancorbo¹, Fernando Benito Lopez¹, and Lourdes Basabe-Desmonts¹,²
¹University of the Basque Country, SPAIN and ²Basque Foundation of Science, IKERBASQUE, SPAIN

**W5-531.c** PLGA POROUS MICRONEEDLES FOR INTERSTITIAL FLUID COLLECTION AIMED FOR CONTINUOUS GLUCOSE SENSING
Gwenaël Bonfante, Hakjae Lee, Leilei Bao, Nobuyuki Takama, and Beomjoon Kim
University of Tokyo, JAPAN

**W6-631.c** RAPID LABEL-FREE DNA QUANTIFICATION BY MULTI-FREQUENCY IMPEDANCE SENSING ON A CHIP
Jianye Sui¹, Neeru Gandotra², Curt Scharfe², and Mehdi Javanmard¹
¹Rutgers University, USA and ²Yale University, USA
AN ULTRASENSITIVE SURFACE ACOUSTIC WAVE SENSOR BASED ON Ti3C2Tx/Au NPS COMPOSITE FOR THE DETECTION OF ENDOTOXIN
Xiao Li Wang, Chuang Ge, Li Chen, and Yi Xu
Chongqing University, CHINA

SHAKE IT OR SHRINK IT: MASS TRANSPORT AND KINETICS IN SURFACE BIOASSAYS USING AGITATION AND MICROFLUIDICS
Anna Fomitcheva Khartchenko, Iago Pereiro, and Govind V. Kaigala
IBM Research - Europe, SWITZERLAND

DETECTION OF PROTEOFORMS FROM SINGLE CELLS BY MULTIPLEXED ION BEAM IMAGING
Gabriela Lomeli1, Marc Bosse2, Sean Bendall2, Michael Angelo2, and Amy E. Herr3
1UC Berkeley – UCSF Graduate Program in Bioengineering, USA,
2University of California, Berkeley, USA, and 3Stanford University, USA

STIMULI-RESPONSIVE HYDROGELS EMBEDDING MECHANICAL METAMATERIALS FOR HIGH SENSITIVE BIOCHEMICAL SENSORS
Shota Yamawaki, Mio Tsuchiya, and Hiroaki Onoe
Keio University, JAPAN

NOVEL IMAGING BASED HIGH-SPEED, HIGH-THROUGHPUT ANALYSIS AND CONTROL SYSTEM FOR MICROFLUIDICS
Daniel Geiger1, Jonas Pfeil1, Tobias Neckermuss1, Lisa Kwapič2, Patricia Schwilling2, and Othmar Marti2
1Sensific GmbH, GERMANY and 2University of Ulm, GERMANY

FAST ELECTRICAL IMPEDANCE SPECTROSCOPY FOR CELL CHARACTERIZATION AND COUNTING
Meng Li
Zurich Instruments AG, SWITZERLAND

PARALLELIZED FLOW CYTOMETRY REALIZED BY ARRAY OF TIME-GATED SINGLE PHOTON AVALANCHE DIODES
Camille Trzeciakowski1, Daiki Sato2, Takahiro Shindo2, Takeshi Mitsunaka2, Yoshihisa Fujimoto2, Kunihiko Iizuka2, Saori Tago1, Teruo Fujii1, and Soo Hyeon Kim1,3
1University of Tokyo, JAPAN, 2Sharp Corporation, JAPAN, and 3Japan Science and Technology Agency (JST), JAPAN

PHOTONIC SENSOR TO DETECT OF SARS-COV-2
Binh T.T. Nguyen1, Zhenyu Li1, Yuzhi Shi1, Patricia Y. Liu1, Hongwei Zhao2, Xiaohong Zhou1, Eric P.H. Yap1, and Ai Qun Liu1
1Nanyang Technological University, SINGAPORE, 2Hainan University, CHINA, and 3Tsinghua University, CHINA

ELECTROCHEMICAL DNA SENSING ENHANCED BY ELECTRIC FIELD USING CRISPR-CAS12A
Ziyue Li1,2, Xiong Ding1, Kun Yin1, and Changchun Liu1
1University of Connecticut Health Center, USA and 2University of Connecticut, USA
RAPID ANTIFUNGAL SUSCEPTIBILITY TESTING ON SILICON MICROWELLS
Christopher Heuer1,2, Heidi Leonard1, Nadav Nitzan1, Ariella Lavy-Alperovitch1, Naama Massad-Ivanir1, Janina Bahnemann2, Thomas Scheper2, and Ester Segal1
1Technion - Israel Institute of Technology, ISRAEL and 2Leibniz University Hannover, GERMANY

AN IMPROVED ACETYLCHOLINESTERASE INHIBITION ASSAY UTILIZING ORGANIC SOLVENT EXTRACTION FOR FOOD ANALYSIS
Lili Jin1, Zhenxia Hao1,2, Qingin Zhang1, Hongping Chen1,2, and Chengxin Lu1,2
1Chinese Academy of Agricultural Sciences, CHINA and 2Ministry of Agriculture and Rural Affairs, CHINA

FLEXIBLE DOPAMINE SENSOR WITH ELECTROPHORETIC DEPOSITED GRAPHENE OXIDE/PEDOT:PSS COMPOSITE FOR BRAIN DISORDER MONITORING
Seung Hyeon Ko1,2, Seung Wook Kim2, and Yi Jae Lee1
1Korea Institute of Science and Technology (KIST), KOREA and 2Korea University, KOREA

ANALYSIS OF ELECTRICAL PROPERTIES OF THE CELLS USING ELECTROROTATION AND LENS-FREE IMAGE DETECTION
Camila D.M. Campos1,2, Yuqian Li1, Ziduo Lin1, Geert Vanmeerbeeck1, Pawel Barmuta2,3, Tomislav Markovic1,2, Rahul Yadav1,2, Giovanni Mangraviti1, Willem Van Roy1, Ilja Ocket1, Yao Hong Liu1, Tim Stakenborg2, Richard Stahl1, Liesbet Lagae1,2, Jan Genoe1,2, and Chengxun Liu1
1Imec, BELGIUM, 2KU Leuven, BELGIUM, and 3Warsaw University of Technology, POLAND

MICROFLUIDIC CHIP FOR THE ELECTROCHEMICAL DETECTION OF MICRORNAs: STUDY OF THE SPECIFICITY
Claire Poujouly1, Pedro Gonzalez Losada1, Sébastien Banzet2, and Jean Gamby1
1Université Paris-Saclay, FRANCE and 2Institut de Recherche Biomédicale des Armées, FRANCE

A MINIATURE ON-CHIP MICROSCOPE
Ekta Prajapati and Shishir Kumar
Indian Institute of Technology, Hyderabad, INDIA

CAN WE MAKE POROUS SILICON BIOSENSORS MORE SENSITIVE? MODELING AND LIMITATIONS
Sofia Arshavsky-Graham1,2, Evgeniy Boyko1, Rachel Salama1, and Ester Segal1
Technion-Israel Institute of Technology, ISRAEL

INTEGRATION OF PLASMONICS AND ELECTRONICS FOR DYNAMIC TRAPPING AND SENSING OF BIOMOLECULES
Daehan Yoo1, Avijit Barik1, Fernando de Léon-Pérez2,3, Daniel A. Mohr1, Matthew Pelton4, Luis Martín-Moreno3, and Sang-Hyun Oh1
1University of Minnesota, Minneapolis, USA, 2Centro Universitario de la Defensa de Zaragoza, SPAIN, 3Universidad de Zaragoza, SPAIN, and 4University of Maryland, Baltimore County, USA

MIXED-SCALE FLUIDIC SYSTEM FOR POINT-OF-CARE TESTING
Steven A. Soper1, Michael C. Murphy2, and Sunggook Park3
1University of Kansas, USA and 2Louisiana State University, USA

3D PRINTING FOR ENHANCED FABRICATION OF MICROFLUIDIC FREE-FLOW ELECTROPHORESIS
John-Alexander Preuss and Janina Bahnemann
Leibniz Universität, Hannover, GERMANY
OVERCOMING MASS TRANSFER LIMITATIONS BY INTRODUCING VORTEX CHROMATOGRAPHY
Eiko Y. Westerbeek\textsuperscript{1,2}, Guillermo Gonzalez Amaya\textsuperscript{1}, Wouter Olthuis\textsuperscript{2}, Jan C.T. Eijkel\textsuperscript{2}, and Wim de Malsche\textsuperscript{1}
\textsuperscript{1}Vrije Universiteit Brussel, BELGIUM and \textsuperscript{2}University of Twente, THE NETHERLANDS

A MEDIUM THROUGHPUT SYSTEM FOR MEASUREMENT OF ISLET SECRETIONS
Yao Wang, Weijia Leng, and Michael G. Roper
Florida State University, USA

SUMMIT: A SEMI-AUTOMATED PROTEIN PEAK QUANTIFICATION ALGORITHM FOR HIGH-THROUGHPUT SINGLE-CELL ELECTROPHORESIS
Julea Vlassakis\textsuperscript{1}, Kevin A. Yamauchi\textsuperscript{1,2}, and Amy E. Herr\textsuperscript{1}
\textsuperscript{1}University of California, Berkeley, USA and
\textsuperscript{2}Friedrich Miescher Institute for Biomedical Research, SWITZERLAND

A MICROFLUIDIC IN-SITU SAMPLING PROBE INTEGRATED WITH LIQUID CHROMATOGRAPHIC SEPARATION CAPACITY FOR MASS SPECTROMETRY ANALYSIS
Di-Qiong Jin, Shao-Wen Shi, Yan Ma, and Qun Fang
Zhejiang University, CHINA

A MONOLITHIC 3D PRINTED µFFE DEVICE WITH INTEGRATED SWAB RECEPTACLE FOR ENRICHMENT OF MULTIDRUG-RESISTANT PATHOGENS
Christian Neubert\textsuperscript{1}, Ole Behrmann\textsuperscript{1}, Denny Maaz\textsuperscript{2}, Frank T. Hufert\textsuperscript{1}, and Gregory Dame\textsuperscript{1}
\textsuperscript{1}Brandenburg Medical School Theodor Fontane, GERMANY and
\textsuperscript{2}German Federal Institute for Risk Assessment, GERMANY

DETECTING CELL DEATH BY ELECTROPHORETIC CYTOMETRY
Ana E. Gomez Martinez and Amy E. Herr
University of California, Berkeley, USA

DEVELOPMENT OF A NOVEL MICROFLUIDIC APPROACH FOR RAPID AND CONTINUOUS DETECTION OF PATHOGENS IN FOOD AND WATER SAMPLES
Gurpreet Klar, Crystal M. Han, and Liat Rosenfeld
San Jose State University, USA

INTEGRATED SAMPLE PREPARATION FOR HIV MOLECULAR TESTING IN A PAPER-BASED DEVICE
Andrew T. Bender\textsuperscript{1}, Benjamin P. Sullivan\textsuperscript{1}, Jane Y. Zhang\textsuperscript{1}, Lorraine Lillis\textsuperscript{2}, David S. Boyle\textsuperscript{2}, and Jonathan D. Posner\textsuperscript{1}
\textsuperscript{1}University of Washington, USA and \textsuperscript{2}PATH, USA

HIGH THROUGHPUT EXTRACELLULAR VESICLE SORTING USING ELECTROKINETIC DETERMINISTIC LATERAL DISPLACEMENT
Bao D. Ho, Jason P. Beech, and Jonas O. Tegenfeldt
Lund University, SWEDEN

PARTICLE MANIPULATION USING PROGRAMMABLE HYDRODYNAMIC FORCES
Ankur Kislaya, Daniel S.W. Tam, and Jerry Westerweel
Delft University of Technology, THE NETHERLANDS
M2-234.d  HIGH THROUGHPUT ISOLATION OF SMALL EXTRACELLULAR VESICLES FROM WHOLE BLOOD USING MULTIPLEXED SPIRAL MICROFLUIDICS (ExoDFFHT)
Sheng Yuan Leong1, Hui Min Tay1, Megha Upadya1, Fang Kong1, Rinkoo Dalan2, Dao Ming1,3, and Han Wei Hou1
1Nanyang Technological University, SINGAPORE, 2Tan Tock Seng Hospital, SINGAPORE, and 3Massachusetts Institute of Technology, USA

M2-235.d  POROUS PDMS SUBSTRATE-ASSISTED PARTICLE SORTING BASED ON HYDRODYNAMIC CROSS-FLOW MICROFLUIDIC FILTRATION
Yurika Sakurai, Takeru Sato, Masumi Yamada, and Minoru Seki
Chiba University, JAPAN

T3-335.d  HIGH-THROUGHPUT CONTINUOUS INERTIAL FOCUSING OF MICROALGAE IN ASYMMETRIC SERPENTINE CHANNELS
Mohammad Al-Hurani, Rodney Forster, Nicole Pamme, and Alex Iles
University of Hull, UK

T3-336.d  SCALING OF DLD DEVICES FOR CELL FRACTIONATION DOWN TO A SINGLE COLUMN FOR ULTRAHIGH THROUGHPUT PER AREA
Weibin Liang, Robert H. Austin, and James C. Sturm
Princeton University, USA

T4-434.d  DETERMINISTIC LATERAL DISPLACEMENT OCCURS WITHOUT CONTACT AT INERTIAL FLOW RATES
William J. Monck1, Calum P. Mallorie2, Rohan R. Vernekar2, Timm Krüger2, and David W. Inglis1
1Macquarie University, AUSTRALIA and 2University of Edinburgh, UK

T4-435.d  MANIPULATION OF BIOMOLECULES USING A 3D-PRINTED INSULATOR-BASED DIELECTROPHORESIS DEVICE
Mohammad Towshif Rabbani, Mukul Sonker, Jorvani Cruz Villarreal, and Alexandra Ros
Arizona State University, USA

T4-436.d  SHAPE BASED CHROMOSOME SEPARATION IN THE INERTIAL FOCUSING DEVICE
Haidong Feng, Bruce Gale, Himanshu Sant
University of Utah, USA

W5-533.d  DETERMINISTIC LATERAL DISPLACEMENT SYSTEMS WITH ARRAYED THREE-DIMENSIONAL ELECTRODES FOR TUNABLE PARTICLE SORTING
Gloria Porro1, Kevin Keim1, Giovanni Cappai1, Jason P. Beech2, Jonas O. Tegenfeldt2, and Carlotta Guiducci1
1École Polytechnique Fédérale de Lausanne (EPFL), SWITZERLAND and 2Lund University, SWEDEN

W5-534.d  OPERATING SPIRAL INERTIAL MICROFLUIDICS AT CONCENTRATIONS UP TO 3.4X109 CELLS/ML FOR HIGH-CONCENTRATION DEWATERING OF CHLORELLA VULGARIS
Catherine Hill, Nik Willoughby, and Helen Bridle
Heriot-Watt University, UK

W5-535.d  STREAM BIFURCATION INDUCED BLOOD CELL SEPARATION IN SEMI-DILUTED VISCOELASTIC FLOW
Haidong Feng, Jules Magda, and Bruce K. Gale
University of Utah, USA

W6-633.d  DEVELOPING MICROFLUIDIC DEVICES AND TECHNIQUES FOR ISOLATION AND DETECTION OF EXTRACELLULAR VESICLES (EVS)
Himayasri Rao Lekkala1, Ian Johnston1, Nikolay Dimov1, and Jameel Inal2,3
1University of Hertfordshire, UK, 2School of Life and Medical Sciences, UK, and 3London Metropolitan University, UK
W6-634.d  PAPER-BASED PUMP-FREE MAGNETOPHORESIS
Zachary D. Call, Cody S. Carrell, Ilhoon Jang, Brian J. Geiss, David S. Dandy, and Charles S. Henry
Colorado State University, USA

W6-635.d  UPSCALING OF DIELECTROPHORETIC CONTINUOUS-FLOW DNA SEPARATION IN A
MICROFLUIDIC SYSTEM
Jakob Derksen, Dario Anselmetti, and Martina Viefhues
Bielefeld University, GERMANY

Th7-733.d  FLOW FIELD-ASSISTED MICROFLUIDIC CHIP FOR THE SHEATHLESS SEPARATION OF
MICROPARTICLES AND CELLS
Shitao Shen1, Mingliang Jin1, Zichuan Yi1, Xing Li1, Zhibin Yan1, Guofu Zhou1, and Lingling Shui1,2
1South China Normal University, CHINA and
2University of Electronic Science and Technology of China, CHINA

Th7-734.d  PARTICLE AND PATHOGEN FOCUSING AND PRE-ENRICHMENT IN ASYMMETRICALLY
curved winding channels via inertial microfluidics
Pablo Rodriguez-Mateos, Charlotte E. Dyer, Alexander Iles, and Nicole Pamme
University of Hull, UK

Th8-833.d  HIGH THROUGHPUT CLOGGING-FREE MICROFLUIDIC PARTICLE FILTER BY
FEMTOSECOND LASER MICROMACHINING
Filippo Storti1,2, Silvio Bonfadini1, and Luigino Criante1
1Istituto Italiano di Tecnologia, ITALY and 2Politecnico di Milano, ITALY

Th8-834.d  PARTICLE MIGRATION IN SHEAR THINNING VISCOELASTIC FLUID
Shamik Hazra1, Sushanta K. Mitra2, and Ashis Kumar Sen1
1Indian Institute of Technology, Madras, INDIA and 2University of Waterloo, CANADA

d - Integrated Microfluidic Platforms
Micromixers & Microreactors

M1-137.d  HIGH-THROUGHPUT 3D GLASS MICROMIXER WITH AN IMPELLER MONOLITHICALLY
FABRICATED USING SELECTIVE LASER-INDUCED ETCHING (SLE)
Sungil Kim1,2, Jeongtae Kim1, Yeun-Ho Joung1, Sanghoon Ahn2, Jiyeon Choi2, and Chiwan Koo1
1Hanbat National University, KOREA and 2Korea Institute of Machinery and Materials (KIMM), KOREA

M2-236.d  STUDY OF LIQUID PHASE OXIDATIVE DEGRADATION OF LIGNIN IN MICROFLUIDIC AND
BATCH REACTOR
Niloofar Manafi and Neda Nazemifard
University of Alberta, CANADA

T3-337.d  THE INFLUENCE OF SHEAR ON THE POLYMORPHISM OF ROY UNDER CONSTANT SHEAR
CONDITIONS
Sander Stroobants, Marzena Krezcket, Pierre Gelin, Iwona Ziemecka, Yousef Pourvais, Heidi Ottevaere,
Wim De Malsche, and Dominique Maes
Vrije Universiteit Brussel, BELGIUM

T4-437.d  THERMAL MANIPULATION FOR A SINGLE CELL UTILIZING AREA COOLING
Yigang Shen1,2, Yaxiaer Yalikun1,2, Yusufu Aishan1,2, and Yo Tanaka1,2
1RIKEN, JAPAN, 2Osaka University, JAPAN, and 3Nava Institute of Science and Technology, JAPAN

Th7-735.d  DEVELOPMENT OF A PILLAR ARRAY MIXER FOR POST-COLUMN DERIVATIZATION ON A
CHIP
Makoto Tsunoda, Muneki Isokawa, and Takashi Funatsu
University of Tokyo, JAPAN
ENHANCEMENT OF PHOTOCATALYTIC REACTION ASSISTED BY NANOELECTROKINETICS
Cong Wang and Jungyul Park
Sogang University, KOREA

**d - Integrated Microfluidic Platforms**

**Chemical & Particle Synthesis**

**M1-138.d**
PHOTOCHEMISTRY IN AN ASSEMBLY OF 108 MICROMETRIC CAPILARIES (id 3.65µm) GRAFTED WITH A PHOTOSENSITIZER
Christian Rolando, Fabien Gelat, Christophe Penverne, Maël Penhoat, Géraud Bouwmans, and Laëtitia Chausset-Boissarie
Université de Lille, FRANCE

**W5-536.d**
A BOLT-NUT MICREOREACTOR FOR THE SYNTHESIS OF CuInS₂/ZnS QUANTUM DOTS
Hyunbin Kim and Do Hyun Kim
Korea Advanced Institute of Science and Technology (KAIST), KOREA

**W6-636.d**
A CONTINUOUS PLATFORM FOR EMBEDDED DROPLET PRINTING OF PHARMACEUTICAL PARTICLES
Arif Z. Nelson¹, Jiaxun Xie², Saif A. Khan³, and Patrick S. Doyle³
¹Singapore-MIT Alliance for Research and Technology (SMART) Centre, SINGAPORE,
²National University of Singapore, SINGAPORE, and ³Massachusetts Institute of Technology, USA

**Th7-736.d**
CHEMOENZYMATIC MICROFLUIDIC CASCADE REACTION: COUPLING OF A DIELS-ALDER REACTION WITH A TRANSKETOLASE-CATALYZED REACTION
Mariana Santos¹, Brian O'Sullivan¹, Sarah Müller², Alina Bunescu², Frank Baganz¹, Marco P.C. Marques¹, Helen Hailes¹, Nicolas Szita¹, and Roland Wohlgemuth³
¹University College London, UK, ²Sigma-Aldrich, GERMANY, and ³Technical University, Lodz, GERMANY

**Th8-836.d**
DEVELOPMENT OF SYNTHESIS ROUTES TO HUMAN DRUG METABOLITES USING IMMOBILISED ENZYMATIC REACTIONS WITHIN MICROFLUIDIC REACTORS
Bradley Doyle¹, Leigh A. Madden¹, Nicole Pamme¹, and Huw S. Jones²
¹University of Hull, UK and ²University of Bradford, UK

**d - Integrated Microfluidic Platforms**

**Other Applications in Chemistry**

**M1-139.d**
DEVELOPMENT OF AN OPTIC MICRO-RHEOMETER USING MULTILAYER PMMA CARTRIDGES AND MODULAR POLYMERIC MICROPUMPS
Yara Alvarez-Braña¹, Josep Ferre-Torres², Andreu Benavent-Claro², Francisco Palacio-Bonet², Fernando Benito-Lopez¹, Mauricio Moreno-Sereno², Aurora Hernandez-Machado², and Lourdes Basabe-Desmonts¹,³
¹University of the Basque Country, SPAIN, ²University of Barcelona, SPAIN, and ³Basque Foundation of Science, IKERBASQUE, SPAIN

**M2-237.d**
A DEVICE FOR URINE CELL CONCENTRATION, LYSIS AND NUCLEIC ACID AMPLIFICATION FOR CHLAMYDIA DETECTION AT THE POINT OF CARE
Steven Bennett, Sujatha Kumar, Erin Heiniger, and Paul Yager
University of Washington, USA

**M2-238.d**
HYBRID MONOLITHS SUPPORTED ON FDM-BASED 3D-PRINTED SCAFFOLDS
Marcella E.P. Schmidt, Lucas P. Bressan, José A.F. da Silva, and Carla B.G. Bottoli
State University of Campinas, BRAZIL
A DISPOSABLE INTEGRATED DIAGNOSTIC DEVICE FOR BLOOD ACQUISITION, SAMPLE PROCESSING, LYSIS, AND DETECTION OF EBOLA VIRUS MARKERS
Sujatha Kumar, Steven Bennett, Shichu Huang, Joshua Buser, and Paul Yager
University of Washington, USA

PRE-CONCENTRATION WITH ELECTROSPUN MEMBRANES COUPLED WITH PAPER-BASED ASSAYS TOWARDS ONSITE MONITORING OF HEAVY METALS IN WATER
Bongkot Ngamsom, Samantha Richardson, Mila Sari, Alexander Iles, Mark Lorch, Will M. Mayes, and Nicole Pamme
University of Hull, UK

A MONOLITHIC WEARABLE SYSTEM DESIGN METHODOLOGY FOR PHYSIOLOGICAL ACTUATION AND ELECTROCHEMICAL SENSING
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1Polytechnique Montréal, CANADA and 2Centre Hospitalier de l’Université de Montréal, CANADA

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¹University of Roma "La Sapienza", ITALY, ²University of Twente, THE NETHERLANDS, and ³Eindhoven University of Technology, THE NETHERLANDS
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¹Wyss Institute for Biologically Inspired Engineering, USA and ²US Army CCDC - Soldier Center, USA

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¹Hahn-Schickard, GERMANY and ²University of Freiburg, GERMANY

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¹CREA-DC Research Centre for Plant Protection and Certification, ITALY and ²Sapienza University of Rome, ITALY

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¹Draper Laboratory, USA and ²Brown University, USA

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¹AiCuris Anti-infective Cures GmbH, GERMANY, ²Institute of Chemical Research of Catalonia (ICIQ), SPAIN, and ³Leibniz Institute of Photonic Technology (IPHT), GERMANY

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¹University of Leeds, UK and ²St James' University Hospital, UK

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¹Toyohashi University of Technology, JAPAN, ²University of Cambridge, UK, and ³Indian Institute of Technology Madras, INDIA
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¹University of Hull, UK and ²Mount Kenya University, KENYA

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¹Shanghai Jiao Tong University School of Medicine, CHINA and ²Xiamen University, CHINA

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¹University of Tokyo, JAPAN and ²Tokai University, JAPAN

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¹Kyoto Institute of Technology, JAPAN, ²Kyoto University, JAPAN, and ³Niigata University, JAPAN

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Massachusetts General Hospital, Harvard Medical, Shriners Hospital for Children, USA
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### Microfluidics for X-Ray and e-Beam Applications

**T4-472.g** THREE DIMENSIONAL HYDRODYNAMIC FOCUSING IN A MONOLITHIC FUSED SILICA MICROFLUIDIC DEVICE  
Diego A. Huyke\(^1\), Ashwin Ramachandran\(^1\), Thomas Kroll\(^2\), Daniel P. DePonte\(^2\), and Juan G. Santiago\(^1\)  
\(^1\)Stanford University, USA and \(^2\)SLAC National Accelerator Lab, USA

### Others

**W5-571.g** AEROSOLIZED DROPLETS AND OPEN MICROFLUIDICS FOR CAPTURING AT-HOME AIRBORNE EXPOSURES  
Ulri N. Lee, Tammi L. van Neel, Fang Yun Lim, Jean Berthier, Erwin Berthier, and Ashleigh B. Theberge  
University of Washington, USA

**W6-672.g** REPROGRAMMABLE FERROMAGNETIC DOMAINS FOR RECONFIGURABLE SOFT MAGNETIC ACTUATORS  
Hyeonseo Song, Hajun Lee, Jaeyeong Lee, Jun Kyu Cheo, Suwoo Lee, Jee Yoon Yi, Sunghoon Park, Jung-Woo Yoo, Min Sang Kwon, and Jiyun Kim  
\(^1\)Ulsan National Institute of Science & Technology (UNIST), KOREA and \(^2\)Seoul National University, KOREA

**Th7-771.g** TOWARDS ASTROBIOLOGICAL NANOSATELLITE MISSION – LOC INSTRUMENTATION FOR CELL CULTIVATION RESEARCH IN SPACE  
Agnieszka Podwin\(^1\), Patrycja Śniadek\(^1\), Adrianna Graja\(^1,2\), Bartosz Kawa\(^1\), Marcin Bialas\(^1\), Wojciech Kubicki\(^1\), Marta Jurga\(^1\), Agata Kaczmarek\(^1\), Krzysztof Matkowski\(^3\), Rafal Walczak\(^1\), and Jan Dziuban\(^1\)  
\(^1\)Wroclaw University of Science and Technology, POLAND, \(^2\)SatRevolution S.A., POLAND, and \(^3\)Wroclaw University of Environmental and Life Sciences, POLAND

### Industrial Benefactor

**W5-572.g** A COMPARISON OF CYCLO OLEFIN POLYMER WITH GLASS AND OTHER PLASTICS FOR THE CONSTRUCTION OF MOLECULAR DIAGNOSTIC CONSUMABLE DEVICES  
Tachi Sawaguchi, Shota Suzuki, Hiro Fujiki, Toshiro Katayama, and Larry Atupem  
Zeon Specialty Materials Inc., USA

### Late News

**Th7-781.g** A KINETIC MATCHING APPROACH ON MICROFLUIDIC PAPER-BASED ANALYTICAL DEVICES FOR RAPID ASSESSMENT OF TOTAL POLYPHENOL CONTENT IN TEA  
Qinqin Zheng\(^1,3\), Zhenxia Hao\(^1,2\), Lili Jin\(^1\), Hongping Chen\(^1,2\), and Chengyin Lu\(^1,2\)  
\(^1\)Chinese Academy of Agricultural Sciences, CHINA, \(^2\)Ministry of Agriculture and Rural Affairs, CHINA, and \(^3\)Graduate School of Chinese Academy of Agricultural Sciences, CHINA