



**Acoustofluidics**  
**2021**

# Thursday 26 August

All Times U.S. Eastern Time (UTC -4 hours)

08:00 - 08:05

## Opening Remarks

Thomas Franke, *University of Glasgow, UK*

Henrik Bruus, *Technical University of Denmark, DENMARK*

## Session 1 - Acoustic Devices

08:05 - 08:10

## Session Introduction by Session Chairs

Peter Glynn-Jones, *University of Southampton, UK*

Richard Fu, *Northumbria University, UK*

## Invited Speaker

08:10 - 08:40

## PRECISE PARTICLE AND CELL SORTING USING HIGH-FREQUENCY SURFACE ACOUSTIC WAVES

[Ye Ai](#), Peixian Li, Jianwei Zhong, and Zhichao Ma

*Singapore University of Technology and Design, SINGAPORE*

## Contributed Talks

08:40 - 08:50

## NUMERICAL INVESTIGATION OF THIN-FILM TRANSDUCERS FOR EXCITING WHOLE-SYSTEM RESONANCES IN BULK ACOUSTOFLUIDICS DEVICES

[André G. Steckel](#) and Henrik Bruus

*Technical University of Denmark, DENMARK*

08:50 - 09:00

## IMPROVING ACOUSTIC ENERGY CONVERSION EFFICIENCY IN BULK WAVE ACOUSTOPHORESIS DEVICES BY SIDE ACTUATION

[Wei Qiu](#), Thierry Baasch, Lei Jiang, and Thomas Laurell

*Lund University, SWEDEN*

09:00 - 09:10

## HIGH THROUGHPUT MULTINODAL ACOUSTIC TRAPPING OF EXTRACELLULAR VESICLES FOR DOWNSTREAM MASS SPECTROMETRY ANALYSIS

[Axel Broman](#), Lotta Happonen, Frida Palm, Oonagh Shannon, Andreas Lenshof, Johan Malmström, and Thomas Laurell

*Lund University, SWEDEN*

09:10 - 09:20

## SURFACE ACOUSTIC WAVE MANIPULATION OF 100 FEMTOLITER DROPLETS IN NANOCANNELS

Naiqing Zhang, Amihai Horesh, and [James Friend](#)

*University of California, San Diego, USA*

**09:20 - 09:30**      **PHASE CONTRAST MICROSCOPY CHARACTERIZATION OF STANDING SURFACE ACOUSTIC WAVES FOR MICROFLUIDIC APPLICATIONS**  
Pierre Thibault, Ianis Bernard, and Philippe Marmottant  
*Université Grenoble Alpes, FRANCE*

**09:30 - 09:40**      **WIRELESS HIGH-FREQUENCY ACOUSTOFLUIDIC MICROPUMP FOR PORTABLE DRUG DELIVERY SYSTEMS**  
Rui You and Xuexin Duan  
*Tianjin University, CHINA*

## Flash Talks

**09:40 - 09:44**      **RAPID MICROMIXING DRIVEN BY SHARP-EDGE ACOUSTIC STREAMING IN A MICROCHANNEL**  
Chuanyu Zhang<sup>1</sup>, Geyu Zhong<sup>1</sup>, Philippe Brunet<sup>1</sup>, Laurent Royon<sup>1</sup>, and Xiaofeng Guo<sup>1,2</sup>  
<sup>1</sup>*Université de Paris, FRANCE* and  
<sup>2</sup>*Université Gustave Eiffel, ESIEE Paris, FRANCE*

**09:44 - 09:48**      **SELECTIVE EVAPORATION-INDUCED CHANGES IN THE RESONANCE BEHAVIOR OF A PIEZOACOUSTIC INKCHANNEL**  
Maaïke Rump<sup>1</sup>, Uddalok Sen<sup>1</sup>, Roger Jeurissen<sup>1</sup>, Christian Diddens<sup>1</sup>, Hans Reinten<sup>2</sup>, Detlef Lohse<sup>1</sup>, Michel Versluis<sup>1</sup>, and Tim Segers<sup>1</sup>  
<sup>1</sup>*University of Twente, NETHERLANDS* and  
<sup>2</sup>*Canon Production Printing, NETHERLANDS*

**09:48 - 09:52**      **THE ELASTIC, DIELECTRIC, AND PIEZOELECTRIC CONSTANTS OF PZT TRANSDUCERS FOR ACOUSTOFLUIDICS DETERMINED BY ELECTRICAL IMPEDANCE SPECTROSCOPY**  
William N. Bodé, Fabian Lickert, and Henrik Bruus  
*Technical University of Denmark, DENMARK*

**09:52 - 09:56**      **A PIEZOELECTRIC SMART PATCH OPERATED WITH MACHINE LEARNING ALGORITHMS FOR EFFECTIVE DETECTION AND ELIMINATION OF CONDENSATION**  
Qian Zhang<sup>1,2</sup>, Yong Wang<sup>1,2,3</sup>, Tao Wang<sup>1</sup>, Dongsheng Li<sup>1</sup>, Jin Xie<sup>1</sup>, Hamdi Torun<sup>2</sup>, and Yongqing Fu<sup>1,2</sup>  
<sup>1</sup>*Zhejiang University, CHINA*, <sup>2</sup>*University of Northumbria, UK*, and  
<sup>3</sup>*Westlake University, Hangzhou, CHINA*

**09:56 - 10:00**      **HEAT TRANSFER MECHANISM DUE TO ACOUSTIC BODY FORCE UNDER ACOUSTIC FIELDS**  
Varun Kumar Rajendran, Mohammed Azharudeen, and Karthick Subramani  
*Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram, INDIA*

- 10:00 - 10:04**      **AXIAL DISPLACEMENT OF TYPICAL CELLS WITH 3D TRAPPING IN A HIGH-FREQUENCY SINGLE BEAM ACOUSTICAL TWEEZERS**  
Zhixiong Gong<sup>1</sup> and Michael Baudoin<sup>1,2</sup>  
<sup>1</sup>*University of Lille, CNRS, FRANCE* and  
<sup>2</sup>*Institut Universitaire de France, FRANCE*
- 10:04 - 10:08**      **A NUMERICAL SIMULATION OF PUMPLESS-CHAOTIC MICROMIXER UTILIZING THE VIBRATION-INDUCED FLOW**  
Kanji Kaneko<sup>1</sup>, Naoto Ujikawa<sup>1</sup>, Yosuke Hasegawa<sup>2</sup>, Takeshi Hayakawa<sup>1</sup>, and Hiroaki Suzuki<sup>1</sup>  
<sup>1</sup>*Chuo University, JAPAN* and <sup>2</sup>*University of Tokyo, JAPAN*
- 10:08 – 10:25**      **Break (offline)**

## Session 2 - Bio-Acoustic Systems

- 10:25 - 10:30**      **Session Introduction by Session Chairs**  
Maria Tenje, *Uppsala University, SWEDEN*  
Mark Meacham, *Washington University, St. Louis, USA*

### Invited Speaker

- 10:30 - 11:00**      **ACOUSTOFLUIDIC TECHNOLOGIES FOR TISSUE ENGINEERING**  
Diane Dalecki, Emma G. Norris, and Denise C. Hocking  
*University of Rochester, USA*

### Contributed Talks

- 11:00 - 11:10**      **ENABLING OFF-CHIP ANALYSIS FOR IN-DROPLET ENZYME REACTIONS USING ACOUSTOPHORESIS**  
Zhenhua Liu<sup>1</sup>, Anna Fornell<sup>1,2</sup>, and Maria Tenje<sup>1</sup>  
<sup>1</sup>*Uppsala University, SWEDEN* and <sup>2</sup>*Lund University, SWEDEN*
- 11:10 - 11:20**      **BACTERIA PRECONCENTRATION USING AN ULTRASONIC NANOSIEVE WITHIN A MICROFLUIDIC DEVICE WITH FLUORESCENCE QUANTIFICATION**  
Bryan Ang, Ruhollah Habibi, Kellie Tuck, Victor Cadarso, and Adrian Neild  
*Monash University, AUSTRALIA*
- 11:20 - 11:30**      **ACOUSTIC DEFORMATION OF RED BLOOD CELLS**  
Andreas Link, Raymond Sparrow, Esther Richter, Mustafa Zaimagaoglu, and Thomas Franke  
*University of Glasgow, UK*

- 11:30 - 11:40**      **NON-INVASIVE NEUROMODULATION USING ULTRASOUND: MECHANISMS OF ACTION**  
Aditya Vasan and James Friend  
*University of California, San Diego, USA*
- 11:40 - 11:50**      **ENDOTHELIAL CELL BRANCH FORMATION IN HYDROGEL USING TWO DIFFERENT FREQUENCY ULTRASOUNDS FOR MICROVASCULAR NETWORKS**  
Le Thi Huong<sup>1</sup>, Andreas Lenshof<sup>2</sup>, Van Thuy Duong<sup>1</sup>, Huu Lam Phan<sup>1</sup>, Thomas Laurell<sup>2</sup>, Kyo-in Koo<sup>1</sup>  
<sup>1</sup>*University of Ulsan, KOREA (ROK)* and <sup>2</sup>*Lund University, SWEDEN*
- 11:50 - 12:00**      **USING ACOUSTOFLUIDICS TO ENGINEER SKELETAL MUSCLES**  
Dhananjay V. Deshmukh, Peter Reichert, Joel Zvick, Oksana Dudaryeva, Ori Bar-Nur, Mark W. Tibbitt, and Jurg Dual  
*ETH Zürich, SWITZERLAND*

## Flash Talks

- 12:00 - 12:04**      **ACOUSTOMICROFLUIDIC TRI-SEPARATION OF PROTEINS USING APTAMER-COATED MICROPARTICLES**  
Muhammad Afzal<sup>1</sup>, Jinsoo Park<sup>2</sup>, Jessie S. Jeon<sup>1</sup>, and Hyung Jin Sung<sup>1</sup>  
<sup>1</sup>*Korea Advanced Institute of Science and Technology (KAIST), KOREA (ROK)* and <sup>2</sup>*Chonnam National University, KOREA*
- 12:04 - 12:08**      **A BUBBLE-BASED ACOUSTOFLUIDIC DEVICE FOR THE STUDY OF ULTRASOUND THROMBOLYSIS**  
Yuan Gao<sup>1</sup>, Mengren Wu<sup>1</sup>, Bruce Gaynes<sup>2,3</sup>, and Jie Xu<sup>1</sup>  
<sup>1</sup>*University of Illinois, Chicago, USA*, <sup>2</sup>*Loyola University Medical Center, USA*, and <sup>3</sup>*Edward Hines Jr VA Medical Center, USA*
- 12:08 - 12:12**      **A SOUND IDEA TO STIMULATE CELLS: A NOVEL METHOD TO ACOUSTO-MECHANICALLY STIMULATE CELLS**  
Christopher Markwell<sup>1</sup>, Luying Feng<sup>1</sup>, Ran Tao<sup>1,2</sup>, Steven O'Reilly<sup>3</sup>, Richard Fu<sup>1</sup>, and Hamdi Torun<sup>1</sup>  
<sup>1</sup>*Northumbria University, UK*, <sup>2</sup>*Shenzhen University, CHINA*, and <sup>3</sup>*Durham University, UK*
- 12:12 - 12:16**      **NEURAL DIFFERENTIATION OF HUMAN EMBRYONIC STEM CELLS MEDIATED BY SURFACE ACOUSTIC WAVES**  
Chao Sun<sup>1</sup>, Jun Wei<sup>3</sup>, Meng Cai<sup>3</sup>, and Xin Yang<sup>2</sup>  
<sup>1</sup>*Northwestern Polytechnical University, CHINA*, <sup>2</sup>*Cardiff University, UK*, and <sup>3</sup>*iRegene Therapeutics Co., Ltd., CHINA*

- 12:16 - 12:20**      **SELF-ORGANIZATION OF HUMAN MESENCHYMAL STEM CELLS INTO SPHEROIDS TRAPPED IN ACOUSTIC LEVITATION**  
Nathan Jeger-Madiot<sup>1</sup>, Lousineh Arakelian<sup>2</sup>, Niclas Setterblad<sup>3</sup>, Patrick Bruneval<sup>4</sup>, Mauricio Hoyos<sup>1</sup>, Jérôme Larghero<sup>2</sup>, and Jean-Luc Aider<sup>1</sup>  
<sup>1</sup>*Université de Paris-1, FRANCE*, <sup>2</sup>*Université de Paris, FRANCE*, <sup>3</sup>*Université de Paris Diderot, FRANCE*, and <sup>4</sup>*INSERM, FRANCE*
- 12:20 - 12:24**      **ACOUSTIC TRAPPING OF SUB-WAVELENGTH MICROPARTICLES AND CELLS IN RESONANT CYLINDRICAL SHELLS**  
Qin Lin, Feiyan Cai, and Hairong Zheng  
*Chinese Academy of Sciences (CAS), CHINA*
- 12:24 - 12:28**      **ANALYSIS OF ACOUSTOPHORETIC FOCUSING USING THE OPEN-SOURCE 3D PARTICLE TRACKING TOOLBOX *DefocusTracker***  
Massimiliano Rossi<sup>1</sup>, Rune Barnkob<sup>2</sup>, and Henrik Bruus<sup>1</sup>  
<sup>1</sup>*Technical University of Denmark, DENMARK* and <sup>2</sup>*Technical University of Munich, GERMANY*
- 12:28**                      **Adjourn for the Day**
- 12:30 - 16:00**        **Science Pub**

# Friday 27 August

All Times U.S. Eastern Time (UTC -4 hours)

07:00 - 08:00 **Science Pub**

08:00 - 08:05 **Opening Remarks**

Thomas Franke, *University of Glasgow, UK*

Henrik Bruus, *Technical University of Denmark, DENMARK*

## Session 3 - Physical Acoustics

08:05 - 08:10 **Session Introduction by Session Chairs**

Glauber T. Silva, *Universidade Federal de Alagoas, BRAZIL*

Feiyan Cai, *Shenzhen Institute of Advanced Technology, CHINA*

### Invited Speaker

08:10 - 08:40 **EXPLOITING PHASE SINGULARITIES TO STABLY TRAP INDIVIDUAL MICROBUBBLES**

[Diego Baresch](#)

*Université de Bordeaux, FRANCE*

### Contributed Talks

08:40 - 08:50 **SELF-ORGANIZATION BY ACOUSTIC CONTRAST FACTOR IN ACOUSTICALLY PACKED BEDS OF WHOLE BLOOD AND IN-LINE REMOVAL OF RED BLOOD CELLS**

[Richard Soller](#), Ola Jakobsson, and Per Augustsson

*Lund University, SWEDEN*

08:50 - 09:00 **MEAN ACOUSTIC FIELDS IN ACOUSTOFLUIDICS: RADIATION FORCE AND TORQUE ON SUBWAVELENGTH AXISYMMETRIC PARTICLES**

Everton B. Lima, Giclênio C. Silva, Marcos Sales, Ana Leite,

Ueslen Rocha, and [Glauber T. Silva](#)

*Federal University of Alagoas, BRAZIL*

09:00 - 09:10 **SUPPRESSION OF ACOUSTIC STREAMING BY AC ELECTROOSMOSIS: THEORY AND SIMULATION**

[Björn G. Winckelmann](#) and Henrik Bruus

*Technical University of Denmark, DENMARK*

09:10 - 09:20 **EFFECTS OF A LASER-INDUCED THERMAL GRADIENT ON THE ACOUSTIC STREAMING FIELD**

[Franziska Martens](#), Wei Qiu, Andreas Ehn, and Per Augustsson

*Lund University, SWEDEN*

**09:20 - 09:30**      **QUALITATIVE CHANGES IN THE STREAMING PATTERN AT HIGH ACOUSTIC ENERGY DUE TO FRICTION-INDUCED HEATING IN THE VISCOUS BOUNDARY LAYERS**  
Jonas H. Joergensen<sup>1</sup>, Wei Qiu<sup>2</sup>, and Henrik Bruus<sup>1</sup>  
<sup>1</sup>*Technical University of Denmark, DENMARK and*  
<sup>2</sup>*Lund University, SWEDEN*

**09:30 - 09:40**      **MEASURING THE TEMPORAL DIFFERENCE IN BUILD UP BETWEEN THE ACOUSTIC RADIATION FORCE AND ACOUSTIC STREAMING WITH AN OPTICAL TWEEZER**  
Christoph Goering and Jürg Dual  
*ETH Zürich, SWITZERLAND*

## Flash Talks

**09:40 - 09:44**      **EFFECTS OF SHAPE AND WILLIS COUPLING ON ACOUSTIC RADIATION FORCE AND TORQUE**  
Shahrokh Sepehrirahnama<sup>1</sup>, Sebastian Oberst<sup>1,2</sup>, Yan Kei Chiang<sup>1,2</sup>, and David A. Powell<sup>1,2</sup>  
<sup>1</sup>*University of Technology Sydney, AUSTRALIA and*  
<sup>2</sup>*University of New South Wales, AUSTRALIA*

**09:44 - 09:48**      **EFFECT OF AXIAL PRIMARY RADIATION FORCE ON THE DYNAMICAL MOTION OF A PAIR OF MICROPARTICLES ALONG THE PRESSURE NODAL PLANE**  
Sazid Z. Hoque, Amal Nath, and Ashis K. Sen  
*Indian Institute of Technology (IIT), Madras, INDIA*

**09:48 - 09:52**      **GENERALIZED POTENTIAL FOR ACOUSTIC INTERACTION FORCE**  
Shahrokh Sepehrirahnama<sup>1</sup>, and Kian-Meng Lim<sup>2</sup>  
<sup>1</sup>*University of Technology Sydney, AUSTRALIA and*  
<sup>2</sup>*National University of Singapore, SINGAPORE*

**09:52 - 09:56**      **MICROSTREAMING AND ACOUSTIC INTERACTION FORCES BETWEEN TWO PARTICLES IN A STANDING WAVE WITHIN A VISCOUS FLUID**  
Alen Pavlic, Lorenzo Ermanni, and Jürg Dual  
*ETH Zürich, SWITZERLAND*

**09:56 - 10:00**      **3D3C FLOW MEASUREMENTS OF THE ACOUSTICALLY INDUCED VORTEX STRUCTURES IN A STANDING SURFACE ACOUSTIC WAVE FIELD**  
Sebastian Sachs, Christian Cierpka, and Jörg König  
*Technische Universität Ilmenau, GERMANY*

**10:00 - 10:04**      **BURGERS-RICCATI PHYSICS OF FAST BULK ACOUSTIC STREAMING**  
Jeremy Orosco and James Friend  
*University of California, San Diego, USA*



**10:04 - 10:08**      **SPECULAR-REFLECTION CONTRIBUTIONS TO DYNAMIC RADIATION FORCES ON HIGHLY REFLECTING SPHERES AND CYLINDERS: SIMPLIFIED ANALYSIS**  
Philip L. Marston<sup>1</sup>, Timothy D. Daniel<sup>1,2</sup>, and Auberry R. Fortuner<sup>1</sup>  
<sup>1</sup>*Washington State University, USA* and  
<sup>2</sup>*Naval Surface Warfare Center Panama City Division, USA*

**10:08 – 10:25**      **Break (offline)**

## Session 4 - Acoustic Manipulation

**10:25 - 10:30**      **Session Introduction by Session Chairs**  
Jikui (Jack) Luo, *Zhejiang University, USA*  
Ashis Kumar Sen, *Indian Institute of Technology, Madras, INDIA*

### Invited Speaker

**10:30 - 11:00**      **INTELLIGENT ACOUSTOFLUIDICS FOR ENGINEERING HUMAN BRAIN ORGANIDS**  
Hongwei Cai, Zheng Ao, and [Feng Guo](#)  
*Indiana University, USA*

### Contributed Talks

**11:00 - 11:10**      **ACOUSTICALLY EXCITED CHANNEL WALLS FOR MICROBIOLOGICAL APPLICATIONS**  
Michael Gerlt, Nino Läubli, Peter Ruppen, Moritz Leuthner, Michel Manser, Alexander Wüthrich, Bradley Nelson, Sven Panke, and Jürg Dual  
*ETH Zürich, SWITZERLAND*

**11:10 - 11:20**      **SELECTING THE OPTIMAL BUFFER FOR ACOUSTIC PARTICLE SEPARATION**  
Thierry Baasch and Thomas Laurell  
*Lund University, SWEDEN*

**11:20 - 11:30**      **ACOUSTIC RADIATION FORCE ON ELASTIC MICROBEADS EXPERIENCING RESONANT SPHEROIDAL VIBRATIONS IN A VISCOUS FLUID**  
Amir Tahmasebipour, Matthew R. Begley, and Carl D. Meinhart  
*University of California, Santa Barbara, USA*

**11:30 - 11:40**      **CONTACTLESS ADDITIVE MANUFACTURING USING ACOUSTIC LEVITATION**  
Iñigo Ezcurdia<sup>1</sup>, Rafael Morales<sup>2</sup>, Marco A.B. Andrade<sup>3</sup>,  
and Asier Marzo<sup>1</sup>  
<sup>1</sup>*Public University of Navarre, SPAIN*, <sup>2</sup>*UltraLeap Ltd., UK*, and  
<sup>3</sup>*University of São Paulo, BRAZIL*

**11:40 - 11:50**      **ON-DEMAND DROPLET GENERATION USING BULK ACOUSTIC WAVE**  
E. Hemachandran<sup>1</sup>, Thomas Laurell<sup>2</sup>, and Ashis Kumar Sen<sup>1</sup>  
<sup>1</sup>*Indian Institute of Technology, Madras, INDIA* and  
<sup>2</sup>*Lund University, SWEDEN*

**11:50 - 12:00**      **SWARMING BEHAVIORS OF MICROMOTORS POWERED BY BUBBLE OSCILLATION**  
Xiaolong Lu<sup>1</sup>, Ying Wei<sup>1</sup>, Hui Shen<sup>1</sup>, and Wenjuan Liu<sup>2</sup>  
<sup>1</sup>*Nanjing University of Aeronautics and Astronautics, CHINA* and  
<sup>2</sup>*Nanjing Tech University, CHINA*

## Flash Talks

**12:00 - 12:04**      **CONTROLLED TRANSPORT AND MERGING OF INDIVIDUAL DROPS IN CLOSED CHANNEL ACOUSTOFLUIDIC DEVICES**  
Kyriacos Yiannacou and Veikko Sariola  
*Tampere University, FINLAND*

**12:04 - 12:08**      **PARTICLE TRAPPING IN MICROFLUIDIC SHAPED TRAPS EXPOSED TO BULK ACOUSTIC STANDING WAVES**  
Lokesh Malik, Amal Nath, and Ashis Kumar Sen  
*Indian Institute of Technology, Madras, INDIA*

**12:08 - 12:12**      **PARTICLE FOCUSING IN POLYMER-BASED ACOUSTOFLUIDIC DEVICES: AN EXPERIMENTAL AND NUMERICAL STUDY**  
Fabian Lickert<sup>1</sup>, Mathias Ohlin<sup>2</sup>, Henrik Bruus<sup>1</sup>, and Pelle Ohlsson<sup>2</sup>  
<sup>1</sup>*Technical University of Denmark, DENMARK* and  
<sup>2</sup>*AcouSort AB, SWEDEN*

**12:12 - 12:16**      **CELL-BASED MICROROBOT MANIPULATION BY MULTIELEMENT FOCUSED ULTRASOUND PHASED ARRAY**  
Hiep Xuan Cao, Van Du Nguyen, Daewon Jung, Han-Sol Lee,  
Byungjeon Kang, Jong-Oh Park, and Chang-Sei Kim  
*Chonnam National University, KOREA (ROK)*

**12:16 - 12:20**      **FOURIER ACOUSTICAL TWEEZERS: SYNTHESIZING ARBITRARY RADIATION FORCE USING NON-MONOCHROMATIC WAVES ON DISCRETE-FREQUENCY BASIS**  
Yu Zhang and Xiasheng Guo  
*Nanjing University, CHINA*

**12:20 - 12:24**      **GENERATION AND TRANSFER OF POLYDISPERSE DROPLETS USING LOW POWER SURFACE ACOUSTIC WAVES**  
Krishnadas N. Nampoothiri, Niladri S. Satpathi, and Ashis K. Sen  
*Indian Institute of Technology, Madras, INDIA*

**12:24 - 12:28**      **DROPLET IMPACT DYNAMICS ON HYDROPHOBIC AND SLIPPERY LIQUID-INFUSED POROUS SURFACES CONTROLLED BY PROPAGATING SURFACE ACOUSTIC WAVES**  
Luke Haworth<sup>1</sup>, Mehdi H. Biroun<sup>1,2</sup>, Prashant Agrawal<sup>1</sup>, Bethany Orme<sup>1</sup>, Glen McHale<sup>3</sup>, Mohammad Rahmati<sup>1</sup>, Hamdi Torun<sup>1</sup>, and Richard YongQing Fu<sup>1</sup>  
<sup>1</sup>*Northumbria University, UK*, <sup>2</sup>*University College London, UK*, and <sup>3</sup>*University of Edinburgh, UK*

## Closing Remarks and Announcement of Acoustofluidics 2022

**12:28 -12:40**      Thomas Franke, *University of Glasgow, UK*  
Henrik Bruus, *Technical University of Denmark, DENMARK*

**12:40**              **Conference Adjourns**

**12:40 - 16:00**      **Science Pub**

## Abstract-Only Presentations

### Acoustic Devices

#### **AN EASY AND ACCESSIBLE MANUFACTURING METHOD FOR RECONFIGURABLE SAW DEVICES**

Roman Mikhaylov<sup>1</sup>, Mercedes S. Martin<sup>1</sup>, Povilas Dumcius<sup>1</sup>, Hanlin Wang<sup>1</sup>, Fangda Wu<sup>1</sup>, Xiaoyan Zhang<sup>2</sup>, Fahad Alghamdi<sup>1</sup>, Victory Akhimien<sup>1</sup>, Chao Sun<sup>3</sup>, Aled Clayton<sup>1</sup>, Yongqing Fu<sup>4</sup>, Lin Ye<sup>5</sup>, Zhiqiang Dong<sup>6</sup>, and Xin Yang<sup>1</sup>

<sup>1</sup>*Cardiff University, UK*, <sup>2</sup>*Huazhong Agricultural University, CHINA*,

<sup>3</sup>*Northwestern Polytechnical University, CHINA*,

<sup>4</sup>*Northumbria University, UK*, <sup>5</sup>*Cardiff University School of Medicine*, and

<sup>6</sup>*Huazhong Agricultural University, CHINA*

#### **LAMB WAVE COUPLED RESONANCE FOR SAW ACOUSTOFLUIDICS**

Junjie Huang and Xiasheng Guo  
*Nanjing University, CHINA*

#### **A NUMERICAL INVESTIGATION OF THE MIXING ENHANCEMENT IN A Y-JUNCTION MICROCHANNEL INDUCED BY ACOUSTIC STREAMING**

Sintayehu Assefa Endaylalu, and Wei-Hsin Tien  
*National Taiwan Science and Technology University, TAIWAN*

## Bio-Acoustic Systems

### ACOUSTIC DROPLET PRINTING TUMOR ORGANOID FOR MODELING BLADDER TUMOR IMMUNE MICROENVIRONMENT

Zhiyi Gong, Yongchang Wei, Fubing Wang, and Shishang Guo  
*Wuhan University, CHINA*

### ACOUSTIC FIBROBLAST CELL PATTERNING IN HYDROGEL FOR THREE-DIMENSIONAL CELL NETWORK FORMATION

Le Thi Huong<sup>1</sup>, Andreas Lenshof<sup>2</sup>, Thomas Laurell<sup>2</sup>, and Kyo-in Koo<sup>1</sup>  
<sup>1</sup>*University of Ulsan, KOREA (ROK)* and <sup>2</sup>*Lund University, SWEDEN*

### STUDY OF THE RAYLEIGH LIMIT BY ACOUSTIC FORCE IN MICROGRAVITY

Chloé Dupuis, Xavier Mousset, Lucile Rabiet, Xavier Benoit-Gonin, Mauricio Hoyos, and Jean-Luc Aider  
*ESPCI, Université de Paris, FRANCE*

### ACOUSTO-PI: AN INTEGRATED OPTO-ACOUSTOFLUIDIC SYSTEM WITH OPEN-SOURCE ELECTRONICS FOR IN-FIELD DIAGNOSTICS

Jethro Vernon<sup>1</sup>, Pep Canyelles-Pericas<sup>2</sup>, Hamdi Torun<sup>1</sup>, and Richard Yong-Qing<sup>1</sup>  
<sup>1</sup>*University of Northumbria, UK* and <sup>2</sup>*University of Twente, NETHERLANDS*

## Physical Acoustics

### PARTICLE CHAIN FORMATION IN ACOUSTOPHORESIS

Thierry Baasch, Wei Qiu, and Thomas Laurell  
*Lund University, SWEDEN*

### NUMERICAL SIMULATIONS OF RELOCATION MECHANISM OF COFLOWING IMMISCIBLE FLUIDS EXPOSED TO BULK ACOUSTIC WAVE

Sazid Z. Hoque and Ashis K. Sen  
*Indian Institute of Technology (IIT), Madras, INDIA*

### TRAPPING AND “BOUNCING” OF WATER DROPLETS IN OIL-FILLED MICROWELLS UNDER SAW-INDUCED STREAMING

Amal Nath and Ashis K. Sen  
*Indian Institute of Technology, Madras, INDIA*

### MODULATED ACOUSTIC RADIATION FORCE IN A CARRIER STANDING WAVE

Mehdi Akbarzadeh, Sebastian Oberst, Shahrokh Sepehrirahnama, and Ben Halkon  
*University of Technology Sydney, AUSTRALIA*

### EFFECT OF VIBRATION VELOCITY ON LOW-FREQUENCY SHARP-EDGE ACOUSTIC STREAMING PATTERN

Geyu Zhong<sup>1,2</sup>, Chuanyu Zhang<sup>1</sup>, Philippe Brunet<sup>1</sup>, Laurent Royon<sup>1</sup>, YingWen Liu<sup>3</sup>, and Xiaofeng Guo<sup>1,2</sup>  
<sup>1</sup>*Université de Paris, FRANCE*, <sup>2</sup>*Université Gustave Eiffel, FRANCE*, and <sup>3</sup>*Xi'an Jiaotong University, CHINA*

### **3D MODEL OF THE PARTICLE ACOUSTOPHORETIC MOTION IN A RECTANGULAR DEVICE**

Abelino Vargas<sup>1,2</sup>, Marcela Camacho<sup>1,2</sup>, J.D. Muñoz<sup>1</sup>, and Itziar González<sup>3</sup>

<sup>1</sup>National University of Colombia, COLOMBIA, <sup>2</sup>International Physics Center (CIF), Biophysics Laboratory, COLOMBIA, and <sup>3</sup>CSIC Spanish National Research Council, SPAIN

### **MULTIPHYSIC MODEL BASED ON SAW-LIQUID INTERACTION FOR THE PREDICTION OF PHYSICAL STRESSES EXERTED ON CELLS AND TISSUES: SIMULATION VERSUS EXPERIMENT**

D.S. Bidouba Sanvany, Francis Kosior, Denis Beyssen, Aude Gigodot, Elisabeth Gaudion, and Frederic Sarry

*Université de Lorraine, FRANCE*

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### **BINARY ACOUSTIC PARTICLE TRAPPING IN GLASS CAPILLARIES**

Thierry Baasch<sup>1</sup>, Anna Fornell<sup>1,2</sup>, Carl Johannesson<sup>1</sup>, Johan Nilsson<sup>1</sup>, and Maria Tenje<sup>2</sup>

<sup>1</sup>Lund University, SWEDEN and <sup>2</sup>Uppsala University, SWEDEN

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Andreas Link, Raymond Sparrow, Esther Richter, Mustafa Zaimagaoglu, John McGrath, and Thomas Franke

*University of Glasgow, UK*

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Ludovic Alhàitz, Diego Baresch, Thomas Brunet, Christophe Aristégui, and Olivier Poncelet

*University of Bordeaux, FRANCE*

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Hanlin Wang<sup>1</sup>, Joe Boardman<sup>1</sup>, Xiaoyan Zhang<sup>1</sup>, Chao Sun<sup>2</sup>, Meng Cai<sup>3</sup>, Jun Wei<sup>3</sup>, Zhenlin Wu<sup>4</sup>, Yongqing Fu<sup>5</sup>, and Xin Yang<sup>1</sup>

<sup>1</sup>Cardiff University, UK, <sup>2</sup>Northwestern Polytechnical University, CHINA, <sup>3</sup>iRegene Pharmaceutical Technology Co., Ltd., CHINA, <sup>4</sup>Dalian University of Technology, CHINA, and <sup>5</sup>Northumbria University, UK

### **KINETIC AND THERMAL CHARACTERISTICS OF MICRO-DROPLET DRIVEN BY RAYLEIGH SURFACE ACOUSTIC WAVE**

Mubbashar Mehmood, Baixin Chen, and Richard Yongqing Fu

*Heriot-Watt University, UK*

### **LYOPHILISED MONODISPERSE MICROBUBBLES AS ULTRASOUND CONTRAST AGENT**

Ugur Soysal<sup>1</sup>, Pedro N. Azevedo<sup>1,2,3</sup>, Flavien Bureau<sup>2</sup>, Alexandre Aubry<sup>2</sup>, Marcio S. Carvalho<sup>3</sup>, Amanda C.S.N. Pessoa<sup>4</sup>, Lucimara G. de la Torre<sup>4</sup>, Olivier Couture<sup>5</sup>, Arnaud Tourin<sup>2</sup>, Mathias Fink<sup>2</sup>, and Patrick Tabeling<sup>1</sup>

<sup>1</sup>ESPCI Paris, FRANCE, <sup>2</sup>Université PSL, CNRS, FRANCE, <sup>3</sup>Pontifical Catholic University of Rio de Janeiro, BRAZIL, <sup>4</sup>University of Campinas, BRAZIL, and

<sup>5</sup>Sorbonne Université, CNRS, INSERM, FRANCE

**MICROPARTICLE PATTERNING INSIDE CAPILLARY TUBES ON BENDABLE THIN FILM SAW DEVICES**

Sadaf MaramiZonouz<sup>1</sup>, Mohammad Rahmati<sup>1</sup>, Changfeng Jia<sup>2</sup>, Tengfei Zheng<sup>2</sup>, and Richard Yongqing Fu<sup>1</sup>

<sup>1</sup>*Northumbria University, UK and* <sup>2</sup>*Xian Jiaotong University, CHINA*

**THREE-DIMENSIONAL STANDING SURFACE ACOUSTIC WAVE SIMULATION MODEL FOR EFFICIENT PARTICLE SEPARATION**

Lizhu Liu, Jian Zhou, Dinghong Zhang, and Zhengjia Zhan

*Hunan University, CHINA*