HIDEAKI TSUTSUI, Ph.D.

Associate Professor
Department of Mechanical Engineering
University of California, Riverside
Riverside, CA 92521

Tel: (951) 827-2444
Email: htsutsui@engr.ucr.edu
URL: http://www.engr.ucr.edu/~htsutsui

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APPOINTMENTS

2019 – present	**Associate Professor**, Department of Mechanical Engineering, UC Riverside
2011 – 2019	**Assistant Professor**, Department of Mechanical Engineering, UC Riverside
2011 – present	**Participating Faculty**, Department of Bioengineering, UC Riverside
2011 – present	**Faculty Member**, Stem Cell Center, UC Riverside
2009 – 2011	**Postdoctoral Scholar**, Mechanical and Aerospace Engineering Department, UCLA

EDUCATION

Ph.D. in Mechanical Engineering, **University of California - Los Angeles**, 2003–2009
Advisor: Chih-Ming Ho, Ph.D.
Dissertation: "Engineering defined embryonic stem cell culture through feedback system control"

M.S. in Mechanical Engineering, **University of California - San Diego**, 2001–2003
Advisors: Keiko K. Nomura, Ph.D. and James Rottman, Ph.D.
Thesis: "Evolution of a counter-rotating vortex pair in a stably stratified fluid"

B.S. in Mechanical Engineering, **University of Tokyo**, Japan, 1997–2001
Advisors: Nobuhide Kasagi, D-Eng. and Yuji Suzuki, D-Eng.
Thesis: "Development of electrostrictive polymer actuators for feedback control of wall turbulent flows"

AWARDS AND HONORS

2020	SLAS Reviewer Excellence Award
2019	**Global Grand Challenges Summit 2019, NAE invitee**
2018	**ACS *I&EC* Research 2018 Class of Influential Researchers**
2018	**National Academy of Engineering (NAE)'s Japan-America Frontiers of Engineering Symposium US invitee**
2017	Regents' Faculty Development Award, UC Riverside
2017	**Faculty Early Career Development (CAREER) Award, National Science Foundation**
2013	Invited attendee, Agricultural Research Connections Workshop in Nairobi, Kenya (co-hosted by the Biosciences for east and central Africa (BecA) Hub at the International Livestock Research Institute (ILRI) and the Gates Foundation)
2013	Regents' Faculty Fellowship, UC Riverside
2013	Featured Faculty, UCR Living the Promise, (promise.ucr.edu/profile-sustainability-tsutsui.html)
2012	Awardee, Bill & Melinda Gates Foundation's Grand Challenges Explorations Grant
2011	Finalist, Chancellor's Award for Postdoctoral Research, UCLA

FUNDED RESEARCH PROJECTS

11/01/2023 – 06/30/2026	**Molecular-diagnostics-ready total nucleic acid collection without a laboratory** California Department of Food and Agriculture / USDA Agricultural Marketing Service Specialty Crop Block Grant Program $ 310,543 Role: PI (Co-PIs Georgios Vidalakis, Deborah Pagliaccia, and Sohrab Bodaghi)
07/01/2023 – 06/30/2025	**Committee on Research Grant: Portable nucleic acid preparation for in-field nanopore gene sequencing** UCR Academic Senate $5,000 Role: PI
08/01/2022 – 09/30/2023	**OASIS-IFA: A portable nucleic acid extraction and collection device for citrus disease diagnosis** UCR Research and Economic Development $25,000 Role: PI (Co-PI Sohrab Bodaghi)
07/01/2018- 06/30/2019	**The Center for Innovation in Cellular Engineering (CICE): An NSF IUCRC Plan** UCR Collaborative Seed Grant Program $10,000 Role: Co-PI (PI Masaru Rao, Co-PI Robert Jinkerson)
09/01/2017 – 03/31/2023 (NCE due to pandemic)	**Understanding the role of fluidic microenvironment in stem cell suspension culture toward scalable biomanufacturing** National Science Foundation (CBET-1707190) $399,823 Role: PI (Co-PIs Marko Princevac and Nicole zur Nieden)
07/01/2017 - 06/30/2018	**Regents' Faculty Development Award: Co-rotating cylinder bioreactor for expansion and differentiation of stem cells** UCR Academic Senate $6,000 Role: PI
02/01/2017 - 06/30/2023 (NCE due to pandemic)	**CAREER: Printable and injectable chromatic nanosensor for one-step, naked-eye detection** National Science Foundation (CBET-1654010) $508,281 (including $8,000 REU supplement) Role: PI
07/01/2016 - 06/30/2020	**Label-free, chemiresistive, paper microfluidic nanobiosensor array for multiplexed detection** National Science Foundation (CBET-1606181) $406,484 (including $7,000 REU supplement) Role: PI (Co-PI Ashok Mulchandani)
07/01/2015 - 12/31/2015	**Ultrahigh throughput mechanoporation proof-of-concept study for adoptive cell transfer cancer immunotherapy** UCR Collaborative Seed Grant Program $10,000

	Role: Co-PI (PI Masaru Rao)
07/01/2015 - 12/31/2015	**Injectable colorimetric lateral flow biosensor in food crop leaves** UCR Collaborative Seed Grant Program $10,000 Role: PI (Co-PI Caroline Roper)
09/24/2014 - 10/31/2018	**Development and validation of a new diagnostic tool for detection and characterization of sweet potato viruses in East Africa using next generation sequencing** Bill & Melinda Gates Foundation (OPP1112536) $499,928 Role: Co-PI (PI Richard Echodu)
09/01/2013 - 06/30/2014	**Understanding biomechanics of pluripotent stem cells under controlled fluidic shear** UCR Collaborative Seed Grant Program $60,000 Role: Co-PI (PI Nicole zur Nieden)
07/01/2013 - 06/30/2014	**Regents' Faculty Fellowship: Impact of fluidic agitation on fate of pluripotent stem cells in suspension** UCR Academic Senate $4,400 Role: PI
07/01/2013 - 12/31/2013	**Seed grant for CIRM Tools and Technology** UCR Office of Research $30,000 Role: PI (Co-PI Nicole zur Nieden)
05/01/2012 - 04/30/2014	**A biotic stress sensor printed on maize leaves** Bill & Melinda Gates Foundation (OPP1059995) $100,000 Role: PI

TEACHING

Courses taught at Department of Mechanical Engineering, UC Riverside, 2011 – present.

ME10	Statics	S12, S13, S14, W16, U24
ME113	Fluid Mechanics	W13, W15, W19, U24
ME170A	Experimental Techniques	S16, S17, S18, S19, S20, S21, S22, S23, S24
ME197	Paper-based Engineering Devices	S15
ME200	Methods of Engineering Analysis	F13, F14, F15, F16, F17, F18, F19, S21, F21, F22, F23
ME240A	Fundamentals of Fluid Mechanics	F12
ME250	Seminar in Mechanical Engineering	AY16/17
ME273	Principles and Designs of Micro Transducers	W12
ME302	Apprentice Teaching	AY19/20, AY20/21, AY21/22, AY22/23, AY23/24

Courses guest-lectured, UC Riverside, 2011 - present

CMDB207	Stem Cell Biology and Medicine	S13, S14, S15, S16, S17, S18, S19, S22, S23
R'Course	Introduction to Microfluidic Instrumentation	S15

POSTDOCTORAL, GRADUATE, AND UNDERGRADUATE TRAINEES

Postdoctoral Trainees		
Brent Kalish	2024 - present	
Daniel Nampe	2017	Process Development Manager, A2 Biotherapeutics
Ph.D. Trainees		
Chia-Wei Liu	2018 - 2024	
Jenna Roper	2017 - 2024	CCST Science & Technology Policy Fellow
Carys Layton	2016 - 2024	
Sidharth Modha	2016 - 2023	Project Engineer, Concuir Consulting
Brent Kalish	2014 - 2019	Postdoctoral Scholar at UCR
Daniel Nampe	2012 - 2016	Process Development Manager, A2 Biotherapeutics
Carlos Castro	2011 - 2016	Associate Professor, Cal Poly Pomona
Jessica Wen	2013 - 2016	Resident Physician, Stanford University School of Medicine
M.S. Trainees		
Jianhou Zhang	2017 - 2020	MS ME
Brent Kalish	2012 - 2014	MS ME
Jessica Wen	2012 - 2013	MS BIEN
Daniel Nampe	2011 - 2012	MS BIEN
Undergraduate Trainees		
Sean Wurtz	2023 – 2024	BS ME
Crystal Yang	2022	BS Chemistry
Andrew Pham	2022 - 2023	BS Biology
Nicholas Lee	2019 - 2022	BS Biology
Jose Garcia	2019 - 2022	BS BIEN
Christopher Alvarez	2019 - 2020	BS ME
Hussein Chamouni	2019 - 2020	BS ME
Rei Tamaoka	2018 - 2019	BS ME
Jeanette Valencia	2018 - 2019	BS ME
Agustin Moran Carmona	2018 - 2019	BS ME
Alexandra Rodriguez	2018 - 2019	BS ME
Keith Kuboshima	2016	BS ME
Karen Bohorquez	2015 - 2017	BS ME
Ronak Joshi	2013 - 2017	BS Neuroscience
Jenna Roper	2013 - 2017	BS BIEN
James Luong	2015 - 2017	BS ME
Joshua Karam	2014 - 2016	BS BIEN
Mick Tan	2015 - 2016	BS ME
Chad Beaudette	2012 - 2015	BS ME
Cindy Rosillo	2012 - 2015	BS ME
Brent Kalish	2012 - 2013	BS ME
Veronica Boulos	2013	BS BIEN
John Yoo	2012 - 2013	BS BIEN
Exchange Students and Visitors		

Sean Connolly	2021 - 2022	CIRM Bridges Intern, California State University, San Bernardino
Jianhou Zhang	2016 - 2017	GPP-E Exchange Student, from Huazhong University of Science and Technology, China
Shuyang Fang	2015 - 2016	GPP-E Exchange Student, from Huazhong University of Science and Technology, China
Maribel Gonzalez	2015	CIRM Bridges Intern, from California State University, San Bernardino
Ricardo C. Paredes-González	2014	MSRIP Program, from Tecnológico de Monterrey, Mexico
Fernando Rivera-Servín de la Mora	2014	MSRIP Program, from Universidad Autónoma de Baja California, Mexico

OUTREACH

Hands-on workshops for K-12 educators and students hosted at following events

STEMapalooza 2019, San Bernardino, CA	2019
Educator STEPCon 2019, Riverside, CA	2019
Johns Hopkins Center for Talented Youth Family Academic Program, Riverside, CA	2016, 2017
Regional Engineering Education Learning (REEL) Conference, Riverside, CA	2015, 2016, 2017

SELECTED UNIVERSITY SERVICES

Department	
Graduate Advisor for Enrolled Students	AY21/22 - AY23/24
Graduate Advisor for Admissions	AY19/20 - AY20/21
Colloquia Coordinator	AY16/17
Member, ME Faculty Search Committee	AY12/13, AY17/18, AY23/24
Member and Chair (AY21/22-23/24), ME Graduate Committee	AY11/12 – AY23/24
College	
Member, BCOE Executive Committee	AY21/22 - AY23/24
Member, BCOE Cell Culture Facilities Oversight Committee	AY12/13 - Present
Member, BCOE Mammalian Cell Culture Committee	AY12/13 - Present
Campus	
Member, Academic Senate Graduate Council	AY22/23 - AY23/24
Member, Academic Senate Committee on Research	AY19/20 - AY21/22
Member, MRB1 Vivarium Planning Sub-Committee	08/2015 - 11/2015
Member, Stem Cell Core and Center Oversight Committee	AY17/18 - AY23/24

SELECTED EXTERNAL SERVICES

2023	Proposal reviewer, American Chemical Society Petroleum Research Fund
2023	Ad-hoc member, NIH BBBT Study Section
2021	Community Engagement Committee Member, microTAS 2021 Conference
2021	Ad-hoc member, NIH BMBI Study Section
2019 - 2020	Guest Editor, *SLAS Technology*
2019	Guest Editor, *IEEE Transactions on Nanotechnology*

2019	Program Committee, IEEE International Conference on Nano/Micro Engineered and Molecular Systems (NEMS)
2017 -	Editorial Board Member, *SLAS Technology*
2015 - 2024	Grant Panel Reviewer, NSF ENG Directorate
2015	Technical Committee and Session Chair, IEEE Nano/Molecular Medicine and Engineering
2015 - 2016	Editorial Board Member, *Journal of Laboratory Automation*
2013	External Proposal Reviewer, Human Frontier Science Program
2013	Session Chair, ASME International Mechanical Engineering Congress & Expo
2013 - 2014	Co-Guest Editor, Journal of Laboratory Automation
2012	Technical Committee and Session Chair, IEEE Nano/Molecular Medicine and Engineering
2011	External Proposal Reviewer, UK Medical Research Council

PROFESSIONAL MEMBERSHIPS

2011 -	American Society of Mechanical Engineers (ASME)
2008 -	Biomedical Engineering Society (BMES)
2012 -	Institute of Electrical and Electronics Engineers (IEEE)
2010 -	Sigma Xi
2015 -	Society for Laboratory Automation and Screening (SLAS)

SELECTED INVITED TALKS (AFTER APPOINTMENT AT UCR)

02/2024	Department of Microbiology and Plant Pathology, UC Riverside, Riverside, CA
10/2023	Department of Mechanical Engineering, Rice University, Houston, TX
07/2022	Department of Precision Mechanics, Chuo University, Tokyo, Japan
04/2022	The 17th IEEE International Conference on Nano/Micro Engineered & Molecular Systems, Virtual
11/2021	The 15th IEEE International Conference on Nano/Molecular Medicine & Engineering, Virtual
02/2019	Centre for Business Innovation (CfBI) Microfluidics Consortium, Riverside, CA
12/2018	The 12th IEEE International Conference on Nano/Molecular Medicine and Engineering (NANOMED 2018), Waikiki Beach, HI
06/2018	Department of Bioengineering, University of California Los Angeles, Los Angeles, CA
04/2018	Department of Biomedical Engineering, University of Southern California, Los Angeles, CA
02/2018	Department of Bioengineering, UC Riverside, Riverside CA
12/2017	Research Center for Advanced Science and Technology, University of Tokyo, Japan
12/2017	Department of Mechanical Engineering, University of Tokyo, Japan
09/2017	Weldon School of Biomedical Engineering, Purdue University, West Lafayette, IN
12/2014	Center for Plant Cell Biology Annual Symposium, UC Riverside, Riverside, CA
11/2012	Department of Mechanical Engineering, Chulalongkorn University, Bangkok, Thailand
11/2012	The 6th IEEE International Conference on Nano/Molecular Medicine and Engineering (NANOMED 2012), Bangkok, Thailand

JOURNAL PUBLICATIONS

J31 Liu, CW., Bodaghi, S., Keremane, M.L., Kalish, B., Vidalakis, G., and **Tsutsui, H.** Rapid colorimetric detection of *citrus tristeza virus* combining portable sample preparation and reverse transcription-loop mediated isothermal amplification. (*In preparation as of 09/30/2024*)

Preprint available at https://www.biorxiv.org/content/10.1101/2024.11.09.622765v1

J30 Liu, CW., Kalish, B., Bodaghi, S., Vidalakis, G., and **Tsutsui, H.** (2024) A 3D-printed handheld device for quick citrus tissue lysis and nucleic acid extraction. (*Submitted to Biosensors and Bioelectronics as of 09/30/2024*)

Preprint available at https://www.biorxiv.org/content/10.1101/2024.08.26.609775v1

J29 Liu, CW., Bodaghi, S., Vidalakis, G., and **Tsutsui, H.** (2024) Quick plant sample preparation methods using a micro-homogenizer for the detection of multiple citrus pathogens. *Chemosensors*. 12(6):105. doi.org/10.3390/chemosensors12060105.

J28 Liu, CW., and **Tsutsui, H.** (2023) Sample–to-answer sensing technologies for nucleic acid preparation and detection in the field. *SLAS Technology*. 28(5):302-323. doi.org/10.1016/j.slast.2023.06.002

J27 Modha, S.*, Shen, Y.*, Chamouni, H., Mulchandani, A., and **Tsutsui, H.** (2021) Laser-etched grooves for rapid fluid delivery for a paper-based chemiresistive biosensor. *Biosensors and Bioelectronics*. 180: 113090. doi.org/10.1016/j.bios.2021.113090.

J26 Roper, J., Garcia, J., and **Tsutsui, H.** (2021) Emerging technologies for monitoring plant health in vivo. *ACS Omega*. doi.org/10.1021/acsomega.0c05850.

J25 Modha, S., Castro, C., and **Tsutsui, H.** (2021) Recent developments in flow modeling and fluid control for paper-based microfluidic biosensors. *Biosensors and Bioelectronics*. 178:113026. doi.org/10.1016/j.bios.2021.113026.

J24 Shen, Y., Modha, S., **Tsutsui, H.**, and Mulchandani, A. (2021) An origami electrical biosensor for multiplexed analyte detection in body fluids. *Biosensors and Bioelectronics*. 171:112721. doi:10.1016/j.bios.2020.112721.

J23 Kalish, B., Tan, M.K., and **Tsutsui, H.** (2020) Modifying wicking speeds in paper-based microfluidic devices by laser-etching. *Micromachines*. 11(8):773. doi:10.3390/mi11080773.

J22 Ghasemian, M., Layton, C., Nampe, D., zur Nieden, N.I., **Tsutsui, H.**, and Princevac, M. (2020) Hydrodynamic characterization within a spinner flask and a rotary wall vessel for stem cell culture. *Biochemical Engineering Journal*. 157:107533. doi:10.1016/j.bej.2020.107533.

J21 Dixit, H.G., Starr, R., Dundon, M.L., Pairs, P.I., Yang, X., Zhang, Y., Nampe, D., Ballas, C.B., **Tsutsui, H.**, Forman, S.J., Brown, C.E., and Rao, M.P. (2020) Massively-parallelized, deterministic mechanoporation for intracellular delivery. *Nano Letters*. 20(2):860-867. doi:10.1021/acs.nanolett.9b03175. (Selected as a supplemental cover art)

J20 **Tsutsui, H.**, and Lillehoj, P.B. (2020) Flexible analytical devices for point-of-care testing. *SLAS Technology*. 25(1):6-8. doi:10.1177/2472630319896762. (Guest Editors' Column)

J19 Kalish, B., Zhang, J., Edema, H., Luong, J., Roper, J., Beaudette, C., Echodu, R., and **Tsutsui, H.** (2020) Distance and microsphere aggregation-based DNA detection in a paper-based microfluidic device. *SLAS Technology*. 25(1):58-66. doi:10.1177/2472630319887680.

J18 Shen, Y., Thien, T.T., Modha, S., **Tsutsui, H.**, and Mulchandani, A. (2019) A paper-based single-walled carbon nanotubes chemiresistive biosensor for low-cost, point-of-care detection. *Biosensors and Bioelectronics*. 130:367-373. doi:10.1016/j.bios.2018.09.041.

J17 Peck, R.A, Bahena, E., Jahan, R., Aguilar, G., **Tsutsui, H.**, Princevac, M., Wilhelmus, M.M., and Rao, M.P. (2018) Meso-scale particle image velocimetry studies of neurovascular flows in vitro. *Journal of Visualized Experiments*. 142:e58902. doi:10.3791/58902.

J16 Wen, J.T., Roper, J.M., and **Tsutsui, H.** (2018) Polydiacetylene supramolecules: Synthesis, characterization, and emerging applications. *Industrial and Engineering Chemistry Research*. 57(28):9037-9053. doi:10.1021/acs.iecr.8b00848. (Contribution to the 2018 Class of Influential Researchers Special Issue)

J15 Nampe, D., Joshi, R., Keller, K., zur Nieden, N., and **Tsutsui, H.** (2017) Impact of fluidic agitation on human pluripotent stem cells in stirred suspension culture. *Biotechnology and Bioengineering*. 114(9):2109-2120. doi:10.1002/bit.26334.

J14 Castro, C., Rosillo, C., and **Tsutsui, H.** (2017) Characterizing effects of humidity and channel size on imbibition in paper-based microfluidic channels. *Microfluidics and Nanofluidics*. 21:21. doi:10.1007/s10404-017-1860-4.

J13 Wen, J., Viravathana, P., Ingel, B., Roper, C., and **Tsutsui, H.** (2017) Polydiacetylene-coated sensor strip for immunochromatic detection of Xylella fastidiosa subsp. fastidiosa. *SLAS Technology*. 22(4):406-412. doi:10.1177/2472630316689286.

J12 Wen, J., Bohorquez, K., and **Tsutsui, H.** (2016) Polydiacetylene-coated polyvinylidene fluoride strip aptasensor for colorimetric detection of zinc(II). *Sensors and Actuators B: Chemical*. 232:313–317. doi:10.1016/j.snb.2016.03.118.

J11 Kalish, B. and **Tsutsui, H.** (2016) Using adhesive patterning to construct 3D paper microfluidic devices. *Journal of Visualized Experiments*. 110:e53805. doi:10.3791/53805.

J10 Wen, J., Castro, C., and **Tsutsui, H.** (2015) In planta microsphere-based lateral flow leaf biosensor in maize. *Journal of Laboratory Automation*. 20(4):500-505. doi:10.1177/2211068214551826.

J9 Kalish, B., and **Tsutsui, H.** (2014) Patterned adhesive enables construction of nonplanar three-dimensional paper microfluidic circuits. *Lab on a Chip*. 14:4354-4361. doi:10.1039/C4LC00730A. (Selected as a back cover)

J8 Nampe, D., and **Tsutsui, H.** (2013) Engineered micromechanical cues affecting human pluripotent stem cell regulations and fate. *Journal of Laboratory Automation*. 18(6):482-493. doi:10.1177/2211068213503156

J7 Chiou, E.P.-Y., and **Tsutsui, H.** (2013) Advancements in biomedical micro/nano tools and technology. *Journal of Laboratory Automation*. 18(6):425-426. doi:10.1177/2211068213505834. (Guest Editors' Column)

J6 Valamehr, B., **Tsutsui, H.**, Ho, C.M., and Wu, H. (2011) Developing defined culture systems for human pluripotent stem cells. *Regenerative Medicine*. 6:623-634. doi:10.2217/rme.11.54

J5 **Tsutsui, H.***, Valamehr, B.*, Hindoyan, A., Qiao, R., Ding, X., Guo, S., Witte, O.N., Liu, X., Ho, C.M., and Wu, H. (2011) An optimized small molecule inhibitor cocktail supports long-term maintenance of human embryonic stem cells. *Nature Communications*. 2:167. doi:10.1038/ncomms1165.

J4 **Tsutsui, H.**, Yu, E., Marquina, S., Valamehr, B., Wong, I., Wu, H., and Ho, C.M. (2010) Efficient dielectrophoretic patterning of embryonic stem cells in energy landscapes defined by hydrogel geometries. *Annals of Biomedical Engineering*. 38:3777-3788. doi:10.1007/s10439-010-0108-1.

J3 Lillehoj, P.B., **Tsutsui, H.**, Valamehr, B., Wu, H., and Ho, C.M. (2010) Continuous sorting of heterogeneous-sized embryoid bodies. *Lab on a Chip*. 10:1678–1682. doi:10.1039/C000163E.

J2 **Tsutsui, H.**, and Ho, C.M. (2009) Cell separation by non-inertial force fields in microfluidic systems *Mechanics Research Communications*. 36:92-103. doi:10.1016/j.mechrescom.2008.08.006.

J1 Nomura, K.K., **Tsutsui, H.**, Mahoney, D., and Rottman, J.W. (2006) Short-wavelength instability and decay of a vortex pair in a stratified fluid. *Journal of Fluid Mechanics.* 553:283-322. doi:10.1017/S0022112006008883.

CONFERENCE PROCEEDINGS AND PRESENTATIONS

C83 Rallabandi, B., Mohda, S., and **Tsutsui, H.** Imbibition in paper channels with engineered surface grooves. 75th Annual Meeting of the Division of Fluid Dynamics, American Physical Society,

November 20–22, 2022, Indianapolis, Indiana.

C82 **Tsutsui, H.** Modifying paper's wicking properties for microfluidic paper-based sensors. The 17th IEEE International Conference on Nano/Micro Engineered & Molecular Systems, April 14-17, 2022. (Virtual Conference due to COVID-19).

C81 Connolly, S., Layton, C., Sparks, N.R.L., Williams, D., Lee, N., zur Nieden, N.I., and **Tsutsui, H.** Shear dependent effects on human pluripotent stem cells in stirred spinner flasks. California Institute of Regenerative Medicine Bridges 2021 Meeting, July 12, 2021 (Virtual Meeting due to COVID-19)

C80 **Tsutsui, H.** Microengineering paper's wicking properties for rapid flow and automation in microfluidic paper-based devices. The 15th IEEE International Conference on Nano/Molecular Medicine & Engineering, November 15-17, 2021. (Virtual Conference due to COVID-19)

C79 Liu, C.W., Bodaghi, S., Vidalakis, G., and **Tsutsui, H.** 2021. Quick sample preparation for the detection of *Citrus tristeza virus* using reverse transcription quantitative PCR. The 25th International Conference on Miniaturized Systems for Chemistry and Life Sciences. October 10-14, 2021. Palm Springs, CA.

C78 Mohda, S., Rallabandi, B., and **Tsutsui, H.** 2021. Modeling wicking through laser-etched grooves in paper. The 25th International Conference on Miniaturized Systems for Chemistry and Life Sciences. October 10-14, 2021. Palm Springs, CA.

C77 Liu, C.W., Bodaghi, S., Vidalakis, G., and **Tsutsui, H.** Quick sample preparation and colorimetric detection of *Citrus tristeza virus* by one-step RT-LAMP assay. 2020 BMES Annual Meeting, October 14-17, 2020. (Virtual Conference due to COVID-19).

C76 Layton, C., Sparks, N.R.L, Ghasemian, M., Nampe, D., Lee, N., Princevac, M., zur Nieden, N.I., **Tsutsui, H.** Human pluripotent stem cell aggregates produced in stirred suspension demonstrate improved pluripotency compared to static suspension and monolayer cultures. 2020 BMES Annual Meeting, October 14-17, 2020. (Virtual Conference due to COVID-19).

C75 Modha, S., Shen, Y., Chamouni, H., Mulchandani, A., and **Tsutsui, H.** Using laser-etched grooves for sequential fluid delivery on a paper-based chemiresistive sensor. 2020 BMES Annual Meeting, October 14-17, 2020. (Virtual Conference due to COVID-19).

C74 Modha, S., Chamouni, H., Shen, Y., Mulchandani, A., and **Tsutsui, H.** Laser-etched grooves for sequential fluid delivery in a paper-based microfluidic device. The 15th IEEE International Conference on Nano/Micro Engineered & Molecular Systems, San Diego, CA, September 27-30, 2020. (Virtual Conference due to COVID-19)

C73 Liu, C.W., and **Tsutsui, H.** Rapid and sensitive detection of citrus tristeza virus by using micro-homogenizer and reverse transcriptase-loop mediated isothermal amplification (RT-LAMP). 2020 SLAS Annual International Conference & Exhibition, San Diego, CA, January 25-29, 2020.

C72 Modha, S., Charmouni, H., Shen, Y., Mulchandani, A., and **Tsutsui, H.** Investigation into the use of laser-etched grooves for rapid sample delivery on paper-based analytical devices. 2020 SLAS Annual International Conference & Exhibition, San Diego, CA, January 25-29, 2020.

C71 Modha, S., Shen, Y., Chamouni, H., Mulchandani, A., and **Tsutsui, H.** Rational design of laser-etched grooves on paper to improve wicking performance. 2019 ASME International Mechanical Engineering Congress and Exposition (IMECE 2019). Salt Lake City, UT. Nov. 11-14, 2019.

C70 Lee, N., Layton, C., and **Tsutsui, H.** Human pluripotent stem cell expansion in stirred suspension culture. The 8th Annual Inland Empire Stem Cell Consortium Symposium. Riverside, CA, Nov. 1, 2019.

C69 Layton, C., Sparks, N., Lee, N., zur Nieden, N., and **Tsutsui, H.** Comparison of adherent culture to 3D suspension culture with and without stirring. The 8th Annual Inland Empire Stem Cell Consortium Symposium. Riverside, CA. Nov. 1, 2019.

C68 Kalish, B., Tan, M.K., and **Tsutsui, H.**, Modifying wicking speeds in single-and double-sided laser-etched paper-based microfluidic channels. The 19th UC Systemwide Bioengineering Symposium, Riverside, CA, June 21-23, 2018.

C67 Dixit, H.G., Starr, R., Nampe, D., Zhang, Y., Ballas, C.B., **Tsutsui, H.**, Brown, C., Forman, S.J., and Rao, M.P., Ultrahigh throughput mechanoporation for cell delivery and cell therapy applications. 2018 ASME NanoEngineering for Medicine and Biology Conference, Los Angeles, CA, Aug. 21-24, 2018.

C66 Kalish, B., Tan, M.K., and **Tsutsui, H.**, Modifying wicking speeds in single-and double-sided laser-etched paper-based microfluidic channels. The 19th UC Systemwide Bioengineering Symposium, Riverside, CA, June 21-23, 2018.

C65 Roper, J.M., Viravathana, P., Roper, C., and **Tsutsui, H.**, Injectable polydiacetylene biosensors for disease detection in food crops. The19th UC Systemwide Bioengineering Symposium, Riverside, CA, June 21-23, 2018.

C64 Modha, S., Shen, Y., Mulchandani, A., and **Tsutsui, H.**, Towards the development of a multiplexed paper-based biosensor. The 19th UC Systemwide Bioengineering Symposium, Riverside, CA, June 21-23, 2018.

C63 Zhang, J., Kalish, B., and **Tsutsui, H.**, Effect of hybridization time and concentration of DNA linker on aggregate size of DNA-conjugated microspheres. The 19th UC Systemwide Bioengineering Symposium, Riverside, CA, June 21-23, 2018.

C62 Dixit, H.G., Starr, R., Nampe, D., Zhang, Y., Ballas, C.B., **Tsutsui, H.**, Brown, C., Forman, S.J., and Rao, M.P., Achieving cell delivery of exogenous molecules via ultrahigh throughput mechanoporation. The 19th UC Systemwide Bioengineering Symposium, Riverside, CA, June 21-23, 2018.

C61 **Tsutsui, H.**, Low-cost biosensors for medical and agricultural applications, 2018 Japan-America Frontiers of Engineering Symposium, Tsukuba, Japan, June 18-20, 2018.

C60 Kalish, B., Tan, M.K., and **Tsutsui, H.**, Controlling wicking speeds in laser-etched paper-based microfluidic channels, The 28th Anniversary World Congress on Biosensors (Biosensors 2018), Miami, FL, June 12-15, 2018.

C59 Shen, Y., Tran, T.T., Modha, S., **Tsutsui, H.**, and Mulchandani, A., Paper-based single-walled carbon nanotubes chemiresistive biosensors for low cost, point-of-care microfluidic biosensing, The 28th Anniversary World Congress on Biosensors (Biosensors 2018), Miami, FL, June 12-15, 2018.

C58 Ghasemian, M., **Tsutsui, H.**, and Princevac, M., Large eddy simulation of fluid flow in the stem cell stirred bioreactor, 2018 AAAS Pacific Division Annual Meeting, Pomona, CA, June 12-15, 2018.

C57 **Tsutsui, H.**, Scalable biomanufacturing of stem cells and therapeutic derivatives using fluid engineering, Stem Cell Therapies and You: A Special Patient Advocate Event (by CIRM), Riverside, CA, April 16, 2018.

C56 Nampe, D., Joshi, R., Karam, J., Keller, K., zur Nieden, N., and **Tsutsui, H.**, Use of hydrodynamic force in stirred suspension culture of human pluripotent stem cells to regulate expansion and differentiation, Stem Cell Therapies and You: A Special Patient Advocate Event (by CIRM), Riverside, CA, April 16, 2018.

C55 Ghasemian, M., **Tsutsui, H.**, and Princevac, M., Hydrodynamic characterization within a spinner flask for stem cell culture application, The 12th Southern California Flow Physics Symposium, Los Angeles, CA, April 14, 2018.

C54 Nampe, D., Joshi, R., Karam, J., Keller, K., zur Nieden, N., and **Tsutsui, H.**, Use of hydrodynamic force in stirred suspension culture of human pluripotent stem cells to regulate expansion and differentiation, 2018 SLAS 7th Annual International Conference & Exhibition. San Diego, CA, Feb. 3-7, 2018.

C53 Nampe, D., Joshi, R., Karam, J., Keller, K., zur Nieden, N., and **Tsutsui, H.**, Impact of fluidic agitation on human pluripotent stem cells in stirred suspension culture, The 6th Annual Inland Empire Stem Cell Consortium Symposium, San Bernardino, CA, Nov. 20, 2017.

C52 Dixit, H.G., Starr, R., Zhang, Y., Nampe, D., Ballas, C.B., **Tsutsui, H.**, Brown, C., Forman, S.J., and Rao, M.P., Intracellular delivery via ultrahigh throughput mechanoporation for cell therapy applications, The 18th UC Systemwide Bioengineering Symposium, Los Angeles, CA, June 28-30, 2017.

C51 Kalish, B., Tan, M.K., and **Tsutsui, H.**, Faster wicking in laser-etched paper-based microfluidic channels, The 18th UC Systemwide Bioengineering Symposium, Los Angeles, CA, June 28-30, 2017.

C50 Dixit, H.G., Starr, R., Nampe, D., Zhang, Y., Ballas, C. B., **Tsutsui, H.**, Forman, S. J., and Rao, M.P. Recent progress towards ultrahigh throughput microinjection, The 12th Annual IEEE International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS), Los Angeles, CA, Apr. 9-12, 2017.

C49 Kalish, B., Luong, J., Roper, J., Beaudette, C., and **Tsutsui, H.**, Distance-based quantitative DNA detection in a paper-based microfluidic device, The 12th Annual IEEE International Conference on Nano/Micro Engineered and Molecular Systems (IEEE-NEMS), Los Angeles, CA, Apr. 9-12, 2017.

- *Selected as one of five finalists for Chih-Ming Ho Best Paper Award. Did not win.*

C48 Dixit, H.G., Starr, R., Zhang, Y., Nampe, D., Ballas, C. B., **Tsutsui, H.**, Brown, C., Forman, S. J., and Rao, M.P. Intracellular delivery via ultrahigh throughput mechanoporation for cell therapy applications, 2017 MRS Spring Meeting & Exhibit, Phoenix, AZ, Apr. 17-21, 2017.

C47 Dixit, H.G., Nampe, D., **Tsutsui, H.**, and Rao, M.P., Intracellular delivery of exogenous molecules via ultrahigh throughput mechanoporation, 2016 MRS Spring Meeting. Phoenix, AZ, Mar. 28 - Apr. 1, 2016.

C46 Wen, J., Bohorquez, K., and **Tsutsui, H.**, Polydiacetylene-coated polyvinylidene fluoride strip aptasensor for chromatic detection of zinc(II), 2016 SLAS 5th Annual International Conference & Exhibition. San Diego, CA, Jan. 23-27, 2016.

C45 Castro, C., Rosillo, C., and **Tsutsui, H.**, New model to accurately predict fluid wicking in paper microfluidic devices, 2016 SLAS 5th Annual International Conference & Exhibition. San Diego, CA, Jan. 23-27, 2016.

C44 Nampe, D., Joshi, R., Karam, J., Gonzalez, M., and **Tsutsui, H.**, Controlling agitation for expansion and differentiation of human pluripotent stem cells in suspension culture, 2016 SLAS 5th Annual International Conference & Exhibition. San Diego, CA, Jan. 23-27, 2016.

C43 **Tsutsui, H.**, Low-cost point-of-use diagnostics: Paper- and plant-based microfluidics, The 9th IEEE International Conference on Nano/Molecular Medicine and Engineering, Waikiki Beach, HI, Nov. 15-18, 2015. (in special symposium session)

C42 Gonzalez, M., Karam, J., Nampe, D., and **Tsutsui, H.**, Stirred suspension culture for scalable production and differentiation of human pluripotent stem cells, The 4th Annual Inland Empire Stem Cell Consortium Symposium, Riverside, CA, Nov. 4, 2015. (CIRM Bridges Student Poster Presentation)

C41 Nampe, D., Joshi, R., Gonzalez, M., Karam, J., and **Tsutsui, H.**, Stirred suspension culture for scalable production and differentiation of human pluripotent stem cells, The 4th Annual Inland Empire Stem Cell Consortium Symposium, Riverside, CA, Nov. 4, 2015.

C40 **Tsutsui, H.,** Development of colorimetric lateral flow leaf biosensor, UCR Center for Plant Cell Biology Annual Symposium, Riverside, CA, Dec. 12, 2014.

C39 Nampe, D., Joshi, R., Beaudette, C., and **Tsutsui, H.**, Decoupling the influence of fluidic agitation and

aggregate size on human pluripotent stem cells in dynamic suspension, The 3rd Annual Inland Empire Stem Cell Consortium Symposium, San Bernardino, CA, Nov. 7, 2014.

C38 Kalish, B. and **Tsutsui, H.**, Origami-inspired nonplanar three-dimensional paper microfluidic circuits, The 18th International Conference on Miniaturized Systems for Chemistry and Life Sciences (μTAS2014), Austin, TX, Oct. 26-30, 2014, pp.1598-1600.

C37 Castro, C., Rosillo, C., and **Tsutsui, H.**, Predicting wicking in wax-bound paper microfluidic channels, BMES 2014 Annual Fall Meeting, San Antonio, TX, Oct. 23-25, 2014.

C36 Nampe, D., Joshi, R., Beaudette, C., Liew, C., and **Tsutsui, H.**, Influence of agitation rate and aggregate size on human pluripotent stem cells in dynamic suspension, BMES 2014 Annual Fall Meeting, San Antonio, TX, Oct. 23-25, 2014.

C35 Kalish, B., and **Tsutsui, H.**, Nonplanar three-dimensional paper microfluidic circuits constructed with patterned adhesive, BMES 2014 Annual Fall Meeting, San Antonio, TX, Oct. 23-25, 2014.

C34 Nampe, D., Joshi, R., Beaudette, C., Liew, C.G., and **Tsutsui, H.**, Investigating the impact of fluidic agitation on human pluripotent stem cells in dynamic suspension, The 12th Annual Meeting of International Society for Stem Cell Research (ISSCR 2014), Vancouver, Canada, June 18-21, 2014.

C33 Nampe, D., Joshi, R, Beaudette, C., and **Tsutsui, H.**, Decoupling the influence of fluidic agitation and aggregate size on human pluripotent stem cells in dynamic suspension. The 15th UC Systemwide Bioengineering Symposium, Irvine, CA, June 18-20, 2014.

C32 Kalish, B., and **Tsutsui, H.**, Patterned adhesive construction of nonplanar three-dimensional paper microfluidic circuits. The 15th UC Systemwide Bioengineering Symposium, Irvine, CA, June 18-20, 2014.

C31 Wen, J., Castro, C., and **Tsutsui, H.**, Developing an optical biosensor in plant leaves. The 15th UC Systemwide Bioengineering Symposium, Irvine, CA, June 18-20, 2014.

C30 Castro, C., Rosillo, C., and **Tsutsui, H.**, Characterizing wicking under non-ideal conditions in paper analytical devices. The 15th UC Systemwide Bioengineering Symposium, Irvine, CA, June 18-20, 2014.

C29 Dixit, H.G., Nampe, D., **Tsutsui, H.**, and Rao, M.P. Optimizing the performance of a MEMS- based mechanoporation device for ultrahigh throughput cellular manipulation. The 15th UC Systemwide Bioengineering Symposium, Irvine, CA, June 18-20, 2014.

C28 Castro, C., Rosillo, and **Tsutsui, H.**, Characterizing wicking for development of paper-based analytical devices, 2014 AAAS Pacific Division Annual Meeting, Riverside, CA, June 17-20, 2014.

C27 Nampe, D., Joshi, R., Beaudette, C., Liew, C.G., and **Tsutsui, H.**, Understanding how fluidic agitation impacts human pluripotent stem cells in dynamic suspension, Clinical Translation of Stem Cells, Palm Desert, CA, April 21-22, 2014.

C26 Dixit, H.G., Nampe, D., **Tsutsui, H.**, and Rao, M.P., Optimizing performance of MEMS-based mechanoporation devices for ultrahigh throughput cellular manipulation, 2014 ASME 3rd Global Congress on Nanoengineering for Medicine and Biology (NEMB 2014), San Francisco, CA, Feb. 2-5, 2014.

C25 Castro, C., Rosillo, C., and **Tsutsui, H.**, Manipulating channel properties in paper-based microfluidic devices to control fluid transport, 2013 ASME International Mechanical Engineering Congress and Exposition (IMECE 2013), San Diego, CA, Nov. 15-21, 2013.

C24 Dixit, H.G., Nampe, D., Zhang, Y., Ballas, C.B., **Tsutsui, H.**, and Rao, M.P., Optimizing performance of MEMS-based mechanoporation devices for ultrahigh throughput cellular manipulation, 2013 ASME International Mechanical Engineering Congress and Exposition (IMECE 2013), San Diego, CA, Nov. 15-21, 2013.

C23 Dixit, H.G., Nampe, D., Zhang, Y., Ballas, C.B., **Tsutsui, H.**, and Rao, M.P., Operational factors affecting performance of MEMS-based ultrahigh throughput mechanoporation devices, BMES 2013 Annual Meeting, Seattle, WA, September 25–28, 2013.

C22 **Tsutsui, H.**, Low-cost agricultural and medical diagnostics, Agricultural Research Connections 2013, Naivasha, Kenya, Aug. 25-30, 2013.

C21 Castro, C., Rosillo, C., and **Tsutsui, H.**, Effects of channel geometries on fluid transport in paper-based microfluidics, The 14th UC Systemwide Bioengineering Symposium, San Diego, CA, June 19-21, 2013.

C20 Kalish, B., and **Tsutsui, H.**, Origami-inspired design of 3D paper-based microfluidic devices, The14th UC Systemwide Bioengineering Symposium, San Diego, CA, June 19-21, 2013.

C19 Nampe, D., Beaudette, C., Joshi, R., Boulos, V, Liew, C.G., and **Tsutsui, H.**, Characterizing self-renewal of human pluripotent stem cells in dynamic suspension culture, The 14th UC Systemwide Bioengineering Symposium, San Diego, CA, June 19-21, 2013.

C18 Dixit, H.G., Nampe, D., Zhang, Y., Ballas, C.B., **Tsutsui, H.**, and Rao, M.P. Operational factors affecting performance of MEMS-based ultrahigh throughput mechanoporation devices, The 14th UC Systemwide Bioengineering Symposium, San Diego, CA, June 19-21, 2013.

C17 Nampe, D., Beaudette, C., Liew, C.G., and **Tsutsui, H.**, Characterizing self-renewal of human pluripotent stem cells in dynamic suspension culture, The 11th Annual Meeting of International Society for Stem Cell Research (ISSCR 2013), Boston, MA, June 12-15, 2013.

C16 Nampe, D., Joshi, R., Beaudette, C., Boulos, V., Liew, C.G., and **Tsutsui, H.**, Propagation of human pluripotent stem cells in dynamic suspension culture, The 2nd Annual Inland Empire Stem Cell Consortium Symposium, Loma Linda, CA, Apr. 17, 2013.

C15 Castro, C., Rosillo, C., Yoo, J., and **Tsutsui, H.**, Characterization of wax expansion and capillary wicking for paper-based microfluidics, The 7th International Conference on Microtechnologies in Medicine and Biology (MMB 2013), Marina Del Rey, CA, April 10-12, 2013.

C14 Zhang, Y., Nampe, D., Dixit, H.G., Ballas, C.B., **Tsutsui, H.**, and Rao, M.P., Operational factors affecting performance of MEMS-based ultrahigh throughput mechanoporation devices, The 7th International Conference on Microtechnologies in Medicine and Biology (MMB 2013), Marina Del Rey, CA, April 10-12, 2013.

C13 Castro, C., Wen, J., and **Tsutsui, H.**, Developing biotic stress sensor on plant leaves, Grand Challenges Explorations Agriculture & Nutrition Grantee Meeting, Seattle, WA, Mar. 13-15, 2013.

C12 Nampe, D., and **Tsutsui, H.**, Understanding the intercellular mechanical cues of embryonic stem cells to enhance survival and self-renewal, The 1st Annual Inland Empire Stem Cell Consortium Symposium, Riverside, CA, Apr. 25, 2012.

C11 Nampe, D., Beaudette, C., Liew, C.G., and **Tsutsui, H.**, Optimization of chemical and physical factors toward clinically enabling culture of pluripotent stem cells, The 6th IEEE International Conference on Nano/Molecular Medicine and Engineering (NANOMED 2012), Bangkok, Thailand. November 4-7, 2012, pp.41-46.

C10 Hsu, N., Latterman, P., Tong, M., Tran, C., Wu, A., Ziv, M., and **Tsutsui, H.**, Self-assembled organic microwires as a new biosensor platform, BMES 2011 Annual Fall Meeting, Hartford, CN, October 12–15, 2011.

C9 **Tsutsui, H.**, Valamehr, B., Wu, H., and Ho, C.M., Stochastic optimization of small molecule inhibitor cocktails for human embryonic stem cell culture, BMES 2009 Annual Fall Meeting, Pittsburgh, PA, October 7-10, 2009.

C8 **Tsutsui, H.**, Yu, E., Marquina S., and Ho, C.M., Dielectrophoretic patterning and assembly of

mammalian cells using inert microstructure templates, BMES 2009 Annual Fall Meeting, Pittsburgh, PA, October 7-10, 2009.

C7 Lillehoj, P., Li, N., **Tsutsui, H.**, and Ho, C.M., A compact microfluidic continuous flow separator for particle and cell sorting, Proceedings of the 21st Annual IEEE International Conference on Micro-Electro-Mechanical Systems (MEMS'08), Tucson, AZ, January 13 -17, 2008, pp.292-295.

C6 **Tsutsui, H.**, Valamehr, B., Wu, H., and Ho, C.M., Development of embryoid body array toward systematic study of stem cell differentiation, BMES 2007 Annual Fall Meeting, Los Angeles, CA, September 26-29, 2007.

C5 **Tsutsui, H.**, Wu, H., and Ho, C.M., Stable poly(ethylene glycol) microwell arrays for long-term cell patterning, The 10th International Conference on Miniaturized Systems for Chemistry and Life Sciences (μTAS2006), Tokyo, Japan, November 5-9, 2006, pp. 242-244.

C4 **Tsutsui, H.**, Wu, H., and Ho, C.M., Directed differentiation of mouse embryonic stem cells in patterned microchannels, The 1st International Conference on Bio-Nano-Informatics (BNI) Fusion, Marina del Rey, USA, July 2005.

C3 Nomura, K.K., **Tsutsui, H.**, Mahoney, D., Crockett, J., and Rottman, J.W., Evolution of a counter-rotating vortex pair in a stably stratified fluid, Proc. of 3rd International Symposium on Turbulence and Shear Flow Phenomena, Sendai, June, 2003. pp. 769-774.

C2 Nomura, K.K., Mahoney, D., **Tsutsui, H.**, Crockett, J., and Rottman, J.W., Effects of stable stratification on the short wave instability in a vortex pair, Bull. Am. Phys. Soc., Vol. 46, No. 10, 2002.

C1 **Tsutsui, H.**, Suzuki, Y., and Kasagi, N., Development of electrostrictive polymer actuators for active control of turbulence, Proc. Meeting of Japan Society of Fluid Mechanics, July-August, 2001, pp.441-442. (in Japanese)