

Curriculum Vitae

NAME: Ponnambalam **Ravi** Selvaganapathy

WORK ADDRESS: 212B JHE, Department of Mechanical Engineering
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EDUCATIONAL BACKGROUND:

B.Tech Chemical & Electrochemical Engineering, **Central Electrochemical Research Institute**,
India. (1998)
M.S. Electrical Engineering, **University of Michigan**, Ann Arbor, U.S.A (2001)
Ph.D. Electrical Engineering, **University of Michigan**, Ann Arbor, U.S.A (2002)

CURRENT STATUS AT McMASTER UNIVERSITY

- Professor in the Department of Mechanical Engineering
- Professor in the School of Biomedical Engineering

PROFESSIONAL ORGANIZATIONS AND INSTITUTES

- Senior Member - Institute of Electrical and Electronic Engineers (IEEE)
- Member - Professional Engineers of Ontario (PEO)

EMPLOYMENT HISTORY

Academic

- Distinguished Engineering Professor, McMaster University (Jul 2021- Jun 2026)
- Professor (Status Only), Faculty of Dentistry, University of Toronto (Jul 2021 - to date)
- Founding Director, Center of Excellence in Protective Materials and Equipment, McMaster University (Jun. 2020 – to date)
- Co-Director, School of Biomedical Engineering, McMaster University (Jul. 2020 – to date)
- Professor, Mechanical Engineering, McMaster University (Jul. 2016 – to date)
- Canada Research Chair in Biomicrofluidics (May 2011- Apr 2021)
- Associate Professor, Mechanical Engineering, McMaster University (Jul. 2010-Jun 2016)
- Assistant Professor, Mechanical Engineering, McMaster University (Jan 2005-Jun 2010)
- Post-Doctoral Researcher, Nano/Bio Sciences Division, Sandia National Laboratories, Livermore, U.S.A. (April 2003 – June 2004)

SCHOLARLY AND PROFESSIONAL ACTIVITIES

Editorship

Editorial Advisory Board – **Biomicrofluidics** (2019-2025)
Associate Editor – **Micromachines** (2019-)
Associate Editor – **Biosensors** (2019-)
Associate Editor – **Frontiers in Nanotechnology** (2019-)
Guest Editor – **Sensors** – Special Issue on Microfluidic Platforms for Environmental Monitoring and Medical Diagnostics (2019)
Guest Editor – **Micromachines** – Special Issue on Microfluidics: Tissue Chips and Microphysiological Systems (2019)

Guest Editor – **Micromachines** – Special Issue on Biomedical microdevices (2017)

Grant and Standards Committees

Member – **IEEE** Working group on Three-Dimensional (3D) Bioprinting of Tissue-Engineered Medical Products (P2864) (2020 -)

Member – **ASTM** Working group on Standard Terminology for Tissue Engineered Medical Products (F2312)

Member – Awards Committee – **Biomicrofluidics Journal**

Section Chair - **NSERC** Discovery Grant - Electrical Engineering Evaluation Group (2017-19)

Panel Member - Scalable Nanomanufacturing for Integrated Systems- **National Science Foundation**, USA (2017)

Panel Member - **NSERC** Discovery Grant - Electrical Engineering Evaluation Group (2016-19)

Panel Member - Emerging Frontiers in Research and Innovation - **National Science Foundation**, USA (2009)

Executive Positions

Technical Program Committee Member - **IEEE Transducers Conference** (2021)

Track Chair and Technical Program Committee Member - **IEEE Sensors Conference** (2020)

Selection Committee Member for Best Paper Award – **Biomicrofluidics Journal** (2020)

Track Chair and Technical Program Committee Member - **IEEE Sensors Conference** (2019)

Track Chair (Biomicrofluidics) and Organizing Committee Member - **5th European Conference on Microfluidics**, Strasbourg, France (2018)

Session Chair and Organizer – Microfluidics, **32nd International Symposium on Microscale Separations and Bioanalysis**, Niagara on the lake (2016)

Program Organizing Committee & Track Chair – Chemical Sensors – **IEEE Sensors Conference** (2013)

Session Chair – **International Smart Structures and Systems Conference** (2012)

Session Organizer – Sensors and Actuators – **CANCAM** (2011)

Session Chair and Organizer – Microfluidics - **92nd Canadian Chemistry Conference**, Hamilton (2009)

Journal Referee (~25-40 papers/year for >30 different journals)

1. Journal of Microelectromechanical Systems (IEEE/ASME) (**recognized for quality of my review**)
2. Journal of Micromechanics and Microengineering (IOP)
3. Biomedical Microdevices (Springer)
4. Transactions on Electron Devices (IEEE)
5. Transactions of Biomedical Engineering (IEEE)
6. Sensors and Actuators A&B (Elsevier)
7. Lab on a Chip (Royal Society of Chemistry) (**Adjudication reviewer**)
8. Langmuir (American Chemical Society)
9. Microsystem Technologies (Springer)
10. Microfluidics and Nanofluidics (Springer)
11. Energy and Environmental Sciences (Royal Society of Chemistry)
12. Analyst (Royal Society of Chemistry)
13. Analytical Chemistry (American Chemical Society)
14. Sensors Journal (IEEE)
15. Electrophoresis (Wiley)
16. Biomicrofluidics (AIP)
17. ACS Applied Surfaces and Interfaces (American Chemical Society)

18. ACS Biomaterials Science and Engineering (American Chemical Society)
19. ACS Nano (American Chemical Society)
20. Biomaterials (Elsevier)
21. Biofabrication (IOP)
22. Acta Biomaterialia (Elsevier)
23. Water Research (Elsevier)
24. Advanced Materials (Wiley)
25. Advanced Functional Materials (Wiley)
26. Advanced Healthcare Materials (Wiley)
27. Advanced Biosystems (Wiley)
28. Advanced Energy Materials (Wiley)
29. Advanced Science (Wiley)
30. Science Advances (AAAS)
31. Nature Reviews Drug Discovery (Springer)

External Grant Reviewer

1. New Frontiers Research Fund, Canada (2021)
2. United Kingdom Research and Innovation (UKRI) – United Kingdom (2020)
3. Institut national de la santé et de la recherche médicale (INSERM) – France (2019, 2020)
4. French National Research Agency- ANR, France (2017, 2020)
5. Al-Jalila Foundation - United Arab Emirates (2016, 2017, 2018)
6. New Zealand Ministry of Business Innovation and Employment (2012, 2013)
7. Swiss National Science Foundation (2012, 2020, 2021)
8. Hong Kong Innovation and Technology Commission (2012, 2013, 2018)
9. Austrian Science Fund (2021)
10. NSERC Strategic Grant (2007,2008, 2009, 2010, 2012, 2018,2020)
11. NSERC Discovery Grant (2008, 2012,2013,2014, 2016-2019)
12. NSERC I2I Grant (2020)
13. Canada Foundation for Innovation (CFI) (2009,2012,2013,2014, 2018)
14. British Columbia Innovation Council (2010)
15. NSERC/CIHR - CHRP Program (2011,2012,2014)
16. University of Western Ontario (2006)

External Referee for Tenure and Promotion

1. University of British Columbia (6)
2. University of Ottawa (1)
3. University of Louisville (2)
4. George Mason University (1)
5. University of Ontario Institute of Technology (2)
6. Wayne State University (1)

Reviewer for Prestigious Awards

1. Presidential Early Career Award for Scientists and Engineers -USA (PECASE) (2010)
2. Canada Research Chair Award (2011,2013)
3. NSERC Steacie Award (2012,2015, 2017, 2019)
4. NSERC Herzberg Medal (2013)

HONOURS & AWARDS

- Distinguished Engineering Professor (2021)
- Dean's Honor Roll (Platinum) in Graduate Supervision (2020)

- Honorary Visiting Faculty, School of Environmental Engineering, Nankai University, China (2019)
- Editor's Pick Award, Biomicrofluidics Journal (2018)
- Dean's Honor Roll in Graduate Supervision (2018)
- Canada Research Chair Award (Tier II), Canada Research Chairs Program, (2016)
- Best Paper Award - Basic Science and Technology- Journal of Endodontics (2016)
- NSERC Discovery Accelerator Supplement Award (2015)
- Best Paper Award - Chemical Sensors - IEEE Sensors Conference (2014)
- McMaster Synergy Award for Interdisciplinary Collaboration (2014)
- Dean's Honor Roll for Teaching (2014)
- Rising Star in Global Health Award, Grand Challenges Canada, (2012)
- Canada Research Chair Award (Tier II), Canada Research Chairs Program, (2011)
- Early Researchers Award, Ontario Ministry of Research and Innovation, (2010)
- Leader's Opportunity Award, Canada Foundation for Innovation and Ontario Ministry of Research and Innovation: (2006)

LIFE TIME PUBLICATIONS (Total number of citations: ~ 4500; H-index-34)

Peer Reviewed

Contributions to Books

1. S. Damodara, S. Shariari, W.I. Wu, P. Rezai, H.H. Hsu, P. Selvaganapathy, Materials and methods for the microfabrication of microfluidic biomedical devices, in *Microfluidic devices for biomedical applications*(Eds. X.J. Li, Y. Zhou), Elsevier, Chapter (2021)
2. A. Shahid, S. Liaghat, P. Ravi Selvaganapathy, *Microfluidic devices for DNA amplification*, Bioelectronics and Medical Devices, (Eds. K. Pal, H.B. Kraatz) Elsevier, Chapter 35, 721-755, (2019)
3. A. Aryasomayajula, P. Bayat, P. Rezai, P. Ravi Selvaganapathy, Microfluidic devices and their applications, in Handbook of Nanotechnology, (Ed: B. Bhushan), Springer, Chapter 16, 487-522, (2017)
4. W.I. Wu, P. Rezai, H.H. Hsu, P. Selvaganapathy, Materials and methods for the microfabrication of microfluidic biomedical devices, in *Microfluidic devices for biomedical applications*(Eds. X.J. Li, Y. Zhou), Woodhead Publishing, Chapter 1, 3-62, (2013)
5. P. Rezai, W. Wu, P. Selvaganapathy, Polymer Microfabrication, in *MEMS for biomedical applications*, (Ed: S. Bhansali), Woodhead Publishing, Chapter 1, 3-46, (2012).
6. P. Rezai, S. Salam, P. Selvaganapathy, B.P. Gupta, Microfluidic systems to study the biology of human diseases and identify potential therapeutic targets in *C. elegans*, in *Integrated Microsystems* (Ed: Kris Iniewski), CRC Press, Chapter. 27, 581-608(2011).
7. A. Noori, S.K. Upadhyaya, P. Selvaganapathy, Materials and microfabrication processes for microfluidic devices, in *Microfluidics for Biological Applications*, E. Finehout, W.C. Tian (Eds.) Springer, Chapter 2, 35-92, (2009).
8. P. Selvaganapathy, Polymers in MEMS and microfluidics, in *Comprehensive Microsystems*, Y. Gianchandani, O. Tabata, H. Zappe (eds.) Elsevier, vol. 1, Chapter 8.05, 1-30, (2007).
9. P. Selvaganapathy, E.T. Carlen, C.H. Mastrangelo, Integrated microfabricated systems for genetic and protein analysis, in *Encyclopedia of Sensors*, C.A. Grimes, E.C. Dickey, M.V. Pishko (eds.), American Scientific Publishers, vol. X, 1-26, (2006).

International Journal Publications

1. S. Damodara, J. Arora, D.J. Dwivedi, P.C. Liaw, A.E. Fox-Robichaud, P.R. Selvaganapathy, Microfluidic device for single step measurement of protein C in plasma samples for sepsis prognosis, *Lab on a Chip*, **22**, 2566 – 2577, (2022)
2. V. Patel, P. Kruse, P.R. Selvaganapathy, Solid state sensors for phosphate detection in environmental and medical diagnostics, *Journal of the Electrochemical Society*, (2022) (**accepted**)

3. S. Angizi, X. Huang, L. Hong, M.A. Akbar, P.R. Selvaganapathy, P. Kruse, Defect density dependent pH response of graphene derivatives: towards the development of pH-sensitive graphene oxide devices, *Nanomaterials*, (2022) **(accepted)**
4. F.C. Li, H. Hussein, M. Magalhaes, P.R. Selvaganapathy, A. Kishen, Deciphering stem cell from apical papilla-macrophage choreography using a novel 3D organoid system, *Journal of Endodontics*, (2022) **(accepted)**
5. S. Angizi, P.R. Selvaganapathy, P. Kruse, Graphene-Silicon schottky devices for operation in aqueous environments: Device performance and sensing application, *Carbon*, **194**, 140-153, (2022)
6. M. Fathalla, P. R. Selvaganapathy, Colorimetric detection of heavy metal ions using super absorptive hydrogels and evaporative concentration for water quality monitoring, *ACS ES&T Water*, **2**, 658-666 (2022)
7. D. Saha, S. Angizi, M. Darestani-Farahani, J. Dalmieda, P.R. Selvaganapathy, P. Kruse, Tuning the chemical and mechanical properties of conductive MoS₂ thin films by surface modification with aryl diazonium salts, *Langmuir*, **38**, 3666-3675 (2022)
8. F.C. Li, A. Shamsabadi, P.R. Selvaganapathy, A. Kishen, Engineering a novel stem cells from apical papilla-macrophages organoid for regenerative endodontics, *Journal of Endodontics*, **48**, 741-748 (2022)
9. S. Damodara, J. Arora, P.C. Liaw, A.E. Fox-Robichaud, P. Ravi Selvaganapathy Single-step measurement of cell free DNA for sepsis prognosis using a thread-based microfluidic device, *Microchimica Acta*, **189**, 1-10, (2022)
10. I. Hassan, P.R. Selvaganapathy, Microfluidic printheads for highly switchable multimaterial 3D printing of soft materials, *Advanced Materials Technologies*, 2101709 (2022) **(accepted)**
11. V. Patel, D. Saha, P. Kruse, P.R. Selvaganapathy, Reagent-free hydrogen peroxide sensing using carbon nanotube chemiresistors with electropolymerized crystal violet, *ACS Applied Nano Materials*, **5**, 3957-3966 (2022)
12. D. Firouzi, P. Mudzi, C.Y. Ching, T. Farncombe, P.R. Selvaganapathy, Use of pressure sensitive adhesives to create flexible ballistic composite laminates from UHMWPE fabric, *Composite Structures*, **287**, 115362, (2022)
13. P. Mudzi, R. Wu, D. Firouzi, C.Y. Ching, T. Francombe, P.R. Selvaganapathy, Use of patterned thermoplastic hot film to create flexible ballistic composite laminates from UHMWPE fabric, *Materials & Design*, **214**, 110403, (2022)
14. A.Z. Laserna, S. Angizi, M. Aliakbar, R. Divigalpithiya, P.R. Selvaganapathy, P. Kruse, Detection of free chlorine in water using graphene-like carbon based chemiresistive sensors, *RSC Advances*, **12**, 2485-2496, (2022)
15. V. Patel, P. Kruse, P.R. Selvaganapathy, A xurography based rapid prototyping method to fabricate and low-cost high quality metal thin film micropatterns using metal leaves, *Materials Today Communications*, **30**, 103132, (2022)
16. D. Saha, V. Patel, P.R. Selvaganapathy, P. Kruse, Facile fabrication of conductive MoS₂ thin films by sonication in hot water and evaluation of their electrocatalytic performance in the hydrogen evolution reaction, *Nanoscale Advances*, **4**, 125-137, (2022) **(selected for Popular Advances collection)**
17. I. Hassan, P.R. Selvaganapathy, A microfluidic printhead with integrated hybrid mixing by sequential injection for multimaterial 3D printing, *Additive Manufacturing*, **50**, 102559, (2022)
18. S. Sayed, P.R. Selvaganapathy, High resolution fabrication of nano patterns by multi-step iterative miniaturization of hot embossed pre-stressed polymer films and constrained shrinking, *Microsystems and Nanoengineering*, **8**, 20, (2022)
19. Q. Zhou, E. Doman, K. Schirrmann, Q. Chen, E. Seed, E.D. Johnstone, P.R. Selvaganapathy, A. Juel, M.O. Bernabeu, T. Kruger, I.L. Chernyavsky, Micro-haemodynamics at the maternal-fetal interface: experimental, theoretical and clinical perspectives, *Current Opinion in Biomedical Engineering*, **22**, 100387 (2022)
20. A. Shamsabadi, P.R. Selvaganapathy, Engineering murine adipocytes and skeletal muscle cells in meat-like constructs using self-assembled layer-by-layer biofabrication: A platform for development of cultivated meat, *Cells Tissues Organs*, **211**, 82-90, (2022) **(invited for special issue)**
21. D. Kumbhare, S. Hassan, D. Diep, F.C.K. Duarte, J. Hung, S. Damodara, D.W.D West, P. R. Selvaganapathy, Potential role of blood biomarkers in fibromyalgia patients, *Pain*, **163**, 1232-1253 (2021)
22. M. Dabaghi, N. Tiessen, Q. Cao, A. Chandiramohan, N. Saraei, Y. Kim, T. Gupta, P.R. Selvaganapathy, J.A. Hirota, Adhesive-based fabrication technique for culture of lung airway epithelial cells with applications in cell patterning and microfluidics, *ACS Biomater. Sci. Eng.* **7**, 5301-5314 (2021) **(cover article)**

23. S. Angizi, E. Yu, J. Dalmieda, D. Saha, P.R. Selvaganapathy, P. Kruse, Defect engineering of graphene to modulate the pH response of graphene devices, *Langmuir*, **37**, 12163-12178 (2021)
24. S. Damodara, Y. Zhu, P.R. Selvaganapathy, Patterned threads as solid-state reagent storage and delivery medium for automated periodic colorimetric monitoring of the environment, *Microfluidics Nanofluidics*, **25**, 1-13 (2021)
25. V. Patel, P. R. Selvaganapathy, Enhancing the sensitivity of cobalt based solid-state phosphate sensor using electrical pretreatment, *Sens. & Act. B: Chem.*, **349**, 130789 (2021)
26. S. Sayed, P.R. Selvaganapathy, Constrained shrinking of nanoimprinted pre-stressed polymer films to achieve programmable, high-resolution, miniaturized nanopatterns, *Nanotechnology*, **32**, 505301, (2021)
27. J. Dalmieda, A.L. Zubiarrain, D. Saha, P.R. Selvaganapathy, P. Kruse, Impact of surface adsorption on metal-ligand binding of phenanthrolines, *J. Phys. Chem. C*, **125**, 21112-21123 (2021)
28. R. Wu, M. Tauhiduzzaman, P.R. Selvaganapathy, Anisotropic wetting surfaces machined by diamond tool with tips microstructured by focused ion beam, *Materials & Design*, **210**, 110014, (2021)
29. M. Sliwiak, R. Bui, M.A. Brook, P.R. Selvaganapathy, 3D printing of highly reactive silicones using inkjet type droplet ejection and free space droplet merging and reaction, *Additive Manufacturing*, **46**, 102099, (2021)
30. C. Fusch, N. Rochow, P.R. Selvaganapathy, Reply to the “Comment on ‘A Pumpless Microfluidic Neonatal Lung Assist Device for Support of Preterm Neonates in Respiratory Distress’”, *Advanced Science*, **8**, 2100831, (2021).
31. M. Dabaghi, S. Shahriari, N. Saraei, K. Da, A. Chandiramohan, P.R. Selvaganapathy, J. Hirota, Surface Modification of PDMS-based Microfluidic devices with collagen using polydopamine as a spacer to enhance primary human bronchial epithelial cells adhesion, *Micromachines*, **12**, 132, (2021)
32. S.K.B. Taylor, M.H. Minhas, J. Tong, P.R. Selvaganapathy, R.K. Mishra, B.P. Gupta, Mitochondrial and ER stress signaling modulate electrotaxis behaviour in *C. elegans*, *Scientific Reports*, **11**, 3115, (2021)
33. V. Patel, P. Kruse, P.R. Selvaganapathy, Solid state sensors for hydrogen peroxide detection, *Biosensors*, **11**, 9, (2021)
34. S. Damodara, D.J. Dwivedi, P.C. Liaw, A.E. Fox-Robichaud, P. Ravi Selvaganapathy, Single step separation and concentration of biomarker proteins using agarose based miniaturized isoelectric gates for point of care diagnostics, *Sens. & Act. B: Chem.*, **330**, 129265, (2021)
35. J. Dalmieda, A. Zubiarrain-Laserna, D. Ganepola, P.R. Selvaganapathy, P. Kruse, Chemiresistive detection of silver ions in aqueous media, *Sens. & Act. B: Chem.*, **328**, 129023, (2021)
36. S. Sayed, P.R. Selvaganapathy, Multi-step proportional miniaturization to nanoscale dimensions using pre-stressed polymer films, *Nanoscale Advances*, **2**, 5461 - 5467 (2020)
37. D. Saha, P.R. Selvaganapathy, P. Kruse, Peroxide-Induced Tuning of the Conductivity of Nanometer-Thick MoS₂ Films for Solid State Sensors, *ACS Applied Nano Materials*, **3**, 10864-10877, (2020)
38. A. Shamsabadi, P.R. Selvaganapathy, π -SACS: pH induced self-assembled cell sheets without the need for modified surfaces, *ACS Biomaterials Science and Engineering*, **6**, 5346-5356, (2020)
39. M. Dabaghi, N. Rochow, N. Saraei, G. Fusch, S. Monkman, K. Da, A. Shamsabadi, J.L. Brash, D. Predescu, K. Delaney, C. Fusch, P. R. Selvaganapathy, A pumpless microfluidic neonatal lung assist device for support of preterm neonates in respiratory distress, *Advanced Science*, **7**, 2001860 (2020)
40. A. Shamsabadi, P.R. Selvaganapathy, Tissue in a Tube: 3D In vitro tissue constructs with integrated multimodal environmental stimulation, *Materials Today Bio*, **7**, 100070, (2020)
41. A. Ahmed, Y.-S. Guan, I. Hassan, C. Ling, Z. Li, I. Mosa, G. Phadke, P. R. Selvaganapathy, S. Chang, S. Ren, Multifunctional smart electronic skin fabricated from two-dimensional like polymer film, *Nano Energy*, **75**, 105044, (2020)
42. J. Elango, P. R. Selvaganapathy, G. Lazzari, B. Bao, W. Wenhui, Biomimetic collagen-sodium alginate-titanium oxide (TiO₂) 3D matrix supports differentiated periodontal ligament fibroblasts growth for periodontal tissue regeneration, *International Journal of Biological Macromolecules*, **163**, 9-18, (2020)
43. M. Dabaghi, N. Rochow, N. Saraei, R.K. Mahendran, G. Fusch, A.K. Chan, J.L. Brash, C. Fusch, P. R. Selvaganapathy, Miniaturization of artificial lungs towards portability, *Advanced Materials Technologies*, **5**, 2000136, (2020) (**highlighted by an invited article in Advanced Science News**)
44. D.A. Ionescu, D.J. Harris, P.R. Selvaganapathy, A. Kishen, Electrokinetic transport and distribution of antibacterial nanoparticles for endodontic disinfection, *Int. Endodontic Journal*, **53**, 1120-1130 (2020)

45. M.K. Wong, E.W. Li, M. Adam, P.R. Selvaganapathy, S. Raha, Establishment of an in vitro placental barrier model cultured under physiologically relevant oxygen levels, *Molecular Human Reproduction*, **26**, 353-365, (2020)
46. A. Shamsabadi, P.R. Selvaganapathy, A 3D self assembled in vitro model to simulate direct and indirect interactions between adipocytes and skeletal muscle cells, *Advanced Biosystems*, **4**, e2000034, (2020)
47. N. Xiao, R. Wu, J.J Huang, P.R. Selvaganapathy, Anode surface modification regulates biofilm community population and the performance of micro-MFC based biochemical oxygen demand sensor, *Chem. Engg. Sci.*, **221**, 115691, (2020)
48. R. Ghaemi, J. Tong, B. Gupta, P. R. Selvaganapathy, Microfluidic device for microinjection of *Caenorhabditis elegans*, *Micromachines*, **11**, 295, (2020) **(invited)** (10th Anniversary special issue)
49. A. Mohammadzadeh, A. Fox-Robichaud, P. R. Selvaganapathy, Electroplating of multiple materials in parallel using patterned gels with applications in electrochemical sensing, *Sensors*, **20**, 886, (2020) **(invited)**
50. N. Xiao, P.R. Selvaganapathy, R. Wu, J.J Huang, Influence of wastewater microbial community on the performance of miniaturized microbial fuel cell biosensor, *Bioresour Technol*, **302**, 122777, (2020)
51. M. Dabaghi, N. Saraei, G. Fusch, N. Rochow, J.L. Brash, C. Fusch, P. R. Selvaganapathy, Microfluidic blood oxygenators with integrated hollow chambers for enhanced air exchange from all four sides, *J. Membrane Sci.*, **596**, 117741, (2020)
52. N. Xiao, R. Wu, J.J. Huang, P.R. Selvaganapathy, Development of a xurographically fabricated miniaturized low-cost, high-performance microbial fuel cell and its application for sensing biological oxygen demand, *Sensors & Actuators B: Chem.*, **304**, 127432, (2020)
53. B. Lee, A. Shamsabadi, P.R. Selvaganapathy, K. Grandfield, A bioprinted in vitro model for osteoblast to osteocyte transformation by changing mechanical properties of the ECM, *Advanced Biosystems*, **3**, 1900126, (2019) **(featured on the cover)**
54. E. Mahoney, H.H. Hsu, F. Du, B. Xiong, P.R. Selvaganapathy, Q. Fang, Optofluidic dissolved Oxygen sensing with sensitivity enhancement through multiple reflections, *IEEE Sensors*, **19**, 10452-10460, (2019)
55. M. Dabaghi, N. Saraei, G. Fusch, N. Rochow, J. Brash, C. Fusch, P. R. Selvaganapathy, An ultra-thin, all PDMS-based microfluidic lung assist device with high oxygenation capacity, *Biomicrofluidics*, **13**, 034116 (2019)
56. A. Shahin-Shamsabadi, P. Ravi Selvaganapathy, A rapid fabrication technique for self-assembled collagen-based multicellular heterogeneous 3D tissue constructs, *Acta Biomaterialia*, **92**, 172-183, (2019)
57. D. Cevik, M. Acker, R. Ghaemi, P. Arefi, J. Zhang, P.R. Selvaganapathy, I. Dworkin, R. Jacobs, Chloroform and Desflurane immobilization with recovery of viable *Drosophila* larvae for confocal imaging, *J. Insect Physiology*, **117**, 103900, (2019)
58. D. Firouzi, C.Y. Ching, P.R. Selvaganapathy, Development of oxygen-plasma-surface-treated UHMWPE fabric coated with a mixture of SiC/polyurethane for protection against puncture and needle threats, *Fibers*, **7**, 46, (2019) **(invited)**
59. A. Mohammadzadeh, A. Fox-Robichaud, P.R. Selvaganapathy, Rapid and inexpensive method for fabrication and integration of electrodes in microfluidic devices, *J. MEMS*, **28**, 597-605, (2019)
60. A. Ahmed, I. Hassan, M. El-Kady, A. Radhi, C.K. Jeong, P.R. Selvaganapathy, S. Ren, Q. Wang, R.B. Kaner, Integrated Triboelectric Nanogenerators in the Era of Internet of Things: A review, *Advanced Science*, **6**, 1802230, (2019)
61. C. Guo, P. Koshy, F. Coelho, P.R. Selvaganapathy, Sink electrical discharge machining of hydrophobic surfaces, *CIRP annals – Manufacturing Technology*, **68**, 185-188, (2019)
62. A. Ahmed, I. Hassan, I.M. Mosa, E. Elsanadidy, G.S. Phadke, M.F. El-Kady, J.F. Rusling, P.R. Selvaganapathy, R.B. Kaner, All printable snow-based triboelectric nanogenerator, *Nano Energy*, **60**, 17-25, (2019)
63. A. Ahmed, M.F. El-Kady, I. Hassan, A. Negm, A.M. Pourrahimi, M. Muni, P.R. Selvaganapathy, R.B. Kaner, Fire-Retardant, Self-Extinguishing Triboelectric Nanogenerators, *Nano Energy*, **59**, 336-345, (2019)
64. M. Osborne, A. Aryasomayajula, A. Shakeri, P.R. Selvaganapathy, T. Didar, Suppression of Biofouling on a Permeable Membrane for Dissolved Oxygen Sensing using a Lubricant-Infused Coating, *ACS Sensors*, **4**, 687-693, (2019)
65. A. Shahin-Shamsabadi, P. Ravi Selvaganapathy, ExCeL: Combining Extrusion Printing on Cellulose Scaffolds with Lamination to Create In Vitro Biological Models, *Biofabrication*, **11**, 035002, (2019)

66. R. Attalla, E. Puersten, N. Jain, P.R. Selvaganapathy, 3D Bioprinting of Heterogeneous Bi- and Tri-layered Hollow Channels within Gel Scaffolds using Scalable Multi-Axial Microfluidic Extrusion Nozzle, *Biofabrication*, **11**, 015012, (2019)
67. A. Mohammadzadeh, A. Fox-Robichaud, P.R. Selvaganapathy, Rapid and inexpensive method for fabrication of multi-material multi-layer microfluidic devices, *J. Micromech. Microeng.*, **29**, 015013, (2019)
68. M. Dabaghi, N. Saraei, G. Fusch, N. Rochow, J.L. Brash, C. Fusch, P.R. Selvaganapathy, An ultra-thin highly flexible microfluidic device for blood oxygenation, *Lab on a Chip*, **18**, 3780 - 3789 (2018) **(featured on the cover)**
69. S. Zheng, M. Zlatin, P. Ravi Selvaganapathy, M.A. Brook, Multiple modulus silicone elastomers using 3D extrusion printing of low viscosity inks, *Additive Manufacturing*, **24**, 86-92, (2018)
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17. H. Matharooet et al., “Stainless Steel Reinforced Composite Silicone Membrane and Its Integration Into Microfluidic Oxygenators for High Performance Gas Exchange,” in *International Conference on Miniaturized Systems for Chemistry and Life Sciences*, 2017, pp. 425–426.
18. R. Attalla, C. Ling, P.R. Selvaganapathy, Lamination-Based Assembly of Hydrogels with Integrated Channels Using Nanoparticle Adhesives, in *39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, (July 2017)
19. S. Banik, J. Mahony, P.R. Selvaganapathy, Magnetically actuated physical impingement for elution of artificial mucous from a swab, in *The 20th International Conference on Miniaturized Systems for Chemistry and Life Sciences*, Dublin, Ireland, 703-705, (2016)
20. J. Liu, J.B. Mahony, P.R. Selvaganapathy, Low cost integration of microwire electrodes into silicone elastomeric devices using modified xurographic methods, in *The 20th International Conference on Miniaturized Systems for Chemistry and Life Sciences*, Dublin, Ireland, 1035-1037, (2016)
21. R. Attalla, P.R. Selvaganapathy, Microfluidic vascular channels in gels using commercial 3D printers, in *Proc. SPIE 9705, Microfluidics, BioMEMS, and Medical Microsystems XIV, 97050J* (2016)
22. R. Ghaemi, B. Iyengar, P.R. Selvaganapathy, A microfluidic microinjection of drosophila embryo in a format using compliant mechanism and electrokinetic dosage control, , in *The 19th International Conference on Miniaturized Systems for Chemistry and Life Sciences*, Gyeongju, Korea, 710-713, (2015)
23. H.H. Hsu, E. Hoque, P. R. Selvaganapathy, P. Kruse, A carbon nanotube based resettable sensors for measuring free chlorine in drinking water, *Proc. of IEEE Sensors Conference*, Spain, 1042-1045, (2014).
24. H.H. Hsu, P.R. Selvaganapathy, Stable and reusable electrochemical sensor for continuous monitoring of phosphate in water, *Proc. of IEEE Sensors Conference*, Spain, 1423-1426, (2014)
25. R. Ghaemi, P. Rezai, B. Iyengar, F. Rafiei Nejad, P.R. Selvaganapathy, A microfluidic chip for investigating auditory responses in the larval stage of the fruit fly, , in *The 18th International Conference on Miniaturized Systems for Chemistry and Life Sciences*, San Antonio, USA, 273-275, (2014)
26. R. Attalla, P.R. Selvaganapathy, 3D printing of gels with integrated vascular channels for cell culture using a microfluidic printhead, in *The 18th International Conference on Miniaturized Systems for Chemistry and Life Sciences*, San Antonio, USA, 479-481, (2014)

27. J. Yang, P.R. Selvaganapathy, D. Dwivedi, A. Fox-Robichaud, P.C. Liaw, Microfluidic device for clinical outcome prediction of severe sepsis, in *The 18th International Conference on Miniaturized Systems for Chemistry and Life Sciences*, San Antonio, USA, 1036-1038, (2014)
28. S. Ayyash, W.-I. Wu, P. Ravi Selvaganapathy, Fast and inexpensive detection of bacterial viability and drug resistance through metabolic monitoring, in *The 2014 IEEE Healthcare Innovation Conference (HIC)*, Seattle, USA, 22 - 25, (2014)
29. M. K. Russel, P. R. Selvaganapathy, C. Y. Ching, Ion drag EHD Micropump with Single Walled Carbon Nanotube Electrodes, *4th Micro and Nano Flows Conference*, London, U.K. (2014)
30. R. Ghaemi, J. Tong, P. R. Selvaganapathy, B.P. Gupta, Microfluidic device for microinjection of *Caenorhabditis elegans*, in *The 17th International Conference on Miniaturized Systems for Chemistry and Life Sciences*, Freiburg, Germany, 1821-1823, (2013)
31. M.S. Islam, K. Kuryllo, P. R. Selvaganapathy, Y. Li, M.J. Deen, A microfluidic sample preparation device for pre-concentration and cell lysis using a nanoporous membrane, in *The 17th International Conference on Miniaturized Systems for Chemistry and Life Sciences*, Freiburg, Germany, 1105-1107, (2013)
32. H.H. Hsu, P. Selvaganapathy, Development of a low cost hemin based dissolved oxygen sensor with anti-biofouling coating for water monitoring, In *IEEE Sensors Conf.*, Baltimore, USA, (2013). (DOI: 10.1109/ICSENS.2013.6688588) (**Best student paper award in chemical sensors**)
33. P. Rezaei, S.-C. A. Yeh, S. Salam, Q. Fang, B. P. Gupta, and P. R. Selvaganapathy, Co-relation of cellular and behavioral responses of *C.elegans* to pulse DC electric fields, in *The 16th international Conference on Miniaturized Systems for Chemistry and Life Sciences, Okinawa, Japan*, 1609-1612, (2012).
34. S. Shinwary, C. Y. Ching, and P. R. Selvaganapathy, Monodisperse droplet generation using electrical pulses, in *The 16th international Conference on Miniaturized Systems for Chemistry and Life Sciences, Okinawa, Japan*, 1523-1525, (2012).
35. W.-I. Wu, G. Layton, A. Kishen, P.R. Selvaganapathy, Characterization of irrigation dynamics in passive ultrasonic and pressurized irrigation methods in a root canal using microfluidic device, in *The 16th international Conference on Miniaturized Systems for Chemistry and Life Sciences, Okinawa, Japan*, 1390-1392, (2012).
36. N. Rochow, W.-I. Wu, E. Chan, D. Nagpal, G. Fusch, P.R. Selvaganapathy, S. Monkman, C. Fusch, Integrated microfluidic oxygenator bundles for blood gas exchange in premature infants, in *The 25th International Conference on Micro Electro Mechanical Systems, Paris, France*, 957-961, (2012).
37. P. Rezaei, S. Salam, B.P. Gupta, P.R. Selvaganapathy, Electrical sorting of *Caenorhabditis elegans*, in *The 15th international Conference on Miniaturized Systems for Chemistry and Life Sciences, Seattle, USA*, 723-725, (2011).
38. W.-I. Wu, K. N. Sask, P. R. Selvaganapathy, and J. L. Brash, Fabrication of polyurethane microfluidic channels and their surface modification for blood contacting applications, in *The 15th international Conference on Miniaturized Systems for Chemistry and Life Sciences, Seattle, USA*, 1140-1142, (2011).
39. W.-I. Wu, N. Rochow, G. Fusch, R. Kusdaya, A. Choi, P. R. Selvaganapathy, and C. Fusch, Development of microfluidic oxygenators as lung assisting devices for preterm infants, in *The 15th international Conference on Miniaturized Systems for Chemistry and Life Sciences, Seattle, USA*, 550-552, (2011).
40. P. Rezaei, S. Salam, P.R. Selvaganapathy, B. Gupta, Separation of *Caenorhabditis elegans* by electrotaxis in a microdevice, in *The 16th International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers 2011), Beijing, China*, 2766-2769, (2011). (**Oral Presentation, top 12% of 1600 papers**).
41. P. Rezaei, P.R. Selvaganapathy, G.R. Wohl, (2011), Plasma enhanced bonding of PDMS with parylene, *The 16th International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers 2011), Beijing, China*, 1340-1343, (2011).
42. M.J. Deen, M.M.R. Howlader, P.R. Selvaganapathy, T. Suga, Nanobonding technologies for emerging applications, in *Proc. of International Conference on Electronic Packaging*, Kyoto, Japan, (2011) (**invited**)
43. S. Loane, P. R. Selvaganapathy, C. Y. Ching, Development and characterization of an electroplated copper nickel alloy-platinum micro-thermocouple, *ASME/JSME 2011 8th Thermal Engineering Joint Conference (AJTEC2011), Honolulu, Hawaii, USA*, T30016-T30016-7, (2011).
44. P. Rezaei, S. Salam, B. Gupta, P.R. Selvaganapathy, Transport, localization and separation of *C.elegans* using electrotaxis for movement based behavioral assays in drug discovery, *The 14th International Conference on Miniaturized Systems for Chemistry and Life Sciences (μ TAS 2010), Groningen, Netherlands*, 160-163, (2010)

45. S. Safari-Mohsenabad, P.R. Selvaganapathy, M.J. Deen, Microfluidic reference electrode for applications in biosensing, *The 14th International Conference on Miniaturized Systems for Chemistry and Life Sciences (μTAS 2010)*, Groningen, Netherlands, 596-599, (2010)
46. Wen-I Wu, D. Ewing, C.Y. Ching, P. R. Selvaganapathy, Phase mapping technique for periodic electroosmotic flow measurements in micro particle image Velocimetry, *The 14th International Conference on Miniaturized Systems for Chemistry and Life Sciences (μTAS 2010)*, Groningen, Netherlands, 914-917, (2010)
47. Wen-I Wu, C.Y. Ching, P. R. Selvaganapathy, Particle transportation by using rectified AC electroosmotic flows in open microfluidic channels, *The 14th International Conference on Miniaturized Systems for Chemistry and Life Sciences (μTAS 2010)*, Groningen, Netherlands, 1952-1955, (2010)
48. P. Zangeneh Kazemi, P. R. Selvaganapathy, C. Y. Ching, Development of Electrohydrodynamic Micropumps with Micropillar Electrodes, *Proc. of The 2nd Micro/Nanoscale Heat & Mass Transfer International Conference (MNHMT2009)*, Shanghai, China, 1818, (2009)
49. P. Rezai, A. Siddiqui, P. Selvaganapathy, B. Gupta, Electric field control of *C.elegans* movement in microfluidic channels, *The 13th International Conference on Miniaturized Systems for Chemistry and Life Sciences (μTAS 2009)*, Jeju, Korea, 1270-1272, (2009)
50. S. SafariMohsenabad, P.R. Selvaganapathy, M.J. Deen, Microfabricated true reference electrode for sensing applications, *14th Canadian Semiconductor Technology Conference*, Hamilton, Canada, 284-285, (2009)
51. P. Selvaganapathy, C.Y. Ching, Electrohydrodynamic pumping for electronic cooling applications, in *Proc. of International Conference on Electronic Packaging*, Kyoto, Japan, (2009) (**invited**)
52. A.Noori, P. Selvaganapathy, Electroosmotic dosage control for microinjection in a lab-on-a-chip format, in *Proc. of International Conference on Microtechnologies in Medicine and Biology*, Quebec City, Canada, 142-143, (2009).
53. W.I Wu, P. Selvaganapathy, C.Y. Ching, Zeta potential modulation and synchronization with AC electric field for rectified electroosmotic flow, in *Proc. of International Conference on Microtechnologies in Medicine and Biology*, Quebec City, Canada, 68-69, (2009).
54. A. Noori, P. Selvaganapathy, Single cell microinjection using compliant fluidic channels, in *Proc. of the 12th International Conference on Miniaturized Systems for Chemistry and Life Sciences (μTAS 2009)*, San Diego, U.S.A, 1971-1973, (2008). (**top 6% of submitted papers**)
55. S. Upadhyaya, P. Selvaganapathy, Nanoporous device for accurate dose control in high throughput screening, in *Proc. of ASME/IEEE MEMS 2008 Conference*, Tucson, Arizona, U.S.A, 583-586, (2008)
56. G. Mahadevan, P. Selvaganapathy, H. Sheardown, Integrated microneedle arrays and assembly techniques for drug delivery applications, in *Proc. of Smart Systems Integration Conference*, Barcelona, Spain, 483-486, (2008)
57. M. J. Deen, M.W. Shinwari, P. R. Selvaganapathy, Towards low-cost, high-sensitivity, integrated biosensors, in *Proc. of 26th International Conference on Microelectronics (MIEL 2008)*, Nis, Serbia, 307-314 (2008).
58. P. Zangeneh, P. Selvaganapathy, C.Y. Ching, Microfabricated EHD pumps with high aspect ratio electrodes, in *Proc. of International Conf. on Microchannels and Minichannels*, Puebla, Mexico, ICNMM2007-30140, 253-259 (June 2007).
59. B. Subramani, P. Selvaganapathy, Surface micromachined PDMS microchannels, in *Proc. of International Conf. on Microchannels and Minichannels*, Puebla, Mexico, ICNMM2007-30169, 587-593 (June 2007).
60. L.L. Chu, K. Takahata, P. Selvaganapathy, J.L. Shohet, Y.B. Gianchandani, A micromachined kelvin probe for surface potential measurements in microfluidic channels and solid-state applications, *Proc. of the 12th International Conference on Solid-State Sensors, Actuators and Microsystems (TRANSDUCERS)* 384 -387, (2003).
61. L. Que, P. Selvaganapathy, B. Mitra, C.G. Wilson, Y.B. Gianchandani, Dye fluorescence LED-SPEC: A battery operated on-chip wavelength tunable optical source for detection of biochemicals, *Proc. of the 7th International Conference on Micro Total Analysis Systems*, 1251-1255, (2003).
62. S. Mutlu, C. Yu, P. Selvaganapathy, F. Svec, C.H. Mastrangelo, J.M.J. Frechet, Micromachined porous polymer for bubble free electro-osmotic pump, *Proc. of the 15th IEEE International Conference on MicroElectroMechanical Systems (MEMS)*, 19 -23, (2002).
63. P. Selvaganapathy, E.T. Carlen, C.H. Mastrangelo, Batch fabricated inline microfluidic valve, *Proc. of the Solid State Sensors and Actuators Workshop*, Hilton Head Conference, 317-320, (2002).

64. P. Selvaganapathy, M.A. Burns, D.T. Burke, C.H. Mastrangelo, Inline electrochemical detection for capillary electrophoresis, *Proc. of the 14th IEEE International Conference on MicroElectroMechanical Systems (MEMS)*, 451 -454, (2001).

Patents

1. **US Patent** 10,514,351, P.R. Selvaganapathy, P. Kruse, E. Hoque, H.H. Hsu, Sensors and methods for detecting an oxidant (2019)
2. **US Patent** 9,841,381: P.R. Selvaganapathy, W.I. Wu, Temperature change indicator and methods of making the same (2017)
3. **Canadian Patent** 2,619,000: M.J. Deen, P.R. Selvaganapathy, M.W. Shinwari, BioFET based microfluidic systems (2017)
4. **US Patent** 9,492,603: C. Fusch, L. Berry, A. Chan, N. Rochow, P.R. Selvaganapathy, J. Brash, G. Fusch, Artificial placenta, (2016)
5. **US Patent** 8,702,939: P.R. Selvaganapathy, B. Gupta, P. Rezai, Electrotaxis methods and devices (2014)
6. **US patent**: 8,173,415: P. Selvaganapathy, A. Noori, Single cell microinjection using compliant fluidic channels (2012)
7. **US Patent** 7,125,478: P. Selvaganapathy, M.A. Burns, D.T. Burke, C.H. Mastrangelo; Microscale electrophoresis devices for biomolecule separation and detection, (2006).
8. **US Patent** 7,142,303: Y.B. Gianchandani, C.G. Wilson, L. Que, B. Mitra, P. Selvaganapathy; Microdischarge optical source apparatus and method and system for analyzing a sample, (2006).
9. **US Patent** 7,116,115: Y.B. Gianchandani, L.L. Chu, K. Takahata, P. Selvaganapathy, J.L. Shohet; Micromachined probe apparatus and methods for making and using same to characterize liquid in a fluidic channel and map embedded charge in a sample on a substrate, (2006).

PRESENTATIONS AT MEETINGS

Invited

1. P.R.Selvaganapathy, Chemiresistive peroxide sensor fabricated using xurography and its applications in biosensing, Canadian Chemical Engineering Conference, Montreal, Oct 2021 (**invited**)
2. P.R. Selvaganapathy, Microfluidic devices for handling small organisms, Canadian Association of Physicists Annual Conference, Jun 2021 (**invited**)
3. P.R. Selvaganapathy, Cultivating whole muscle cuts without scaffolds, Good Food Institute Seminar, Jan 2021 (**keynote**)
4. P.R. Selvaganapathy, Biofabrication techniques for tissue engineering and cultivated meat, International virtual conference on Biomedical materials innovation, Dec 2020 (**keynote**)
5. P.R. Selvaganapathy, Center of excellence in protective equipment and materials, WFI 2020 Virtual Conference, Dec 2020 (**invited**)
6. P.R. Selvaganapathy, Microfluidic technologies for additive manufacturing in tissue engineering, 103rd Canadian Chemistry Conference, Winnipeg, May 2020 (**invited**)
7. P.R. Selvaganapathy, Solid state sensors for environmental monitoring, International Forum on Green Development and Engineering Innovation, Nankai University, Nov 2019 (**invited**)
8. P.R. Selvaganapathy, Smart Sensor technologies for Aging in Place, Disruptive Technology & Digital Cities Summit, Stanford University, Jun 2019 (**invited**)
9. P.R. Selvaganapathy, A. Shahid, S. Chong, J. Mahony, M.J. Deen, Electrical Methods for simple sample preparation, Canadian Chemistry Conference, May 2018 (**invited**)
10. P.R. Selvaganapathy, Rana Attalla, Michael Zlatin, Monika Sliwiak, Microfluidic nozzles for additive manufacturing of gels and soft materials, 5th International Conference on Fluid Flow and Heat and Mass Transfer, June 2018 (**keynote**)
11. P.R. Selvaganapathy, Rana Attalla, Erin Puersten, Nidhi Jain, Simple low cost methods to build perfusable 3D structures composed of gels and cells, Ontario on a Chip Conference, May 2018 (**keynote**)

12. P.R. Selvaganapathy, A. Mohammadzadeh, A. Fox-Robichaud, A fast and inexpensive method for fabrication and integration of electrodes in microfluidic devices, 5th European Conference on Microfluidics, Strasbourg, France, March 2018 **(invited)**
13. P.R. Selvaganapathy, Additive manufacturing methods for integration of electrodes in flexible devices, Canada-China Symposium on flexible electronics, London, Canada, (Sep 2017) **(invited)**
14. P.R. Selvaganapathy, Electrifying Microfluidics, International Symposium on Electrohydrodynamics, Ottawa, Canada (June 2017) **(keynote)**
15. P.R. Selvaganapathy, Biomedical microdevices for diagnostics, drug discovery and artificial organs, Firestone Institute, St. Joseph's Hospital, Hamilton, Canada, (June 2017) **(invited)**
16. P.R. Selvaganapathy, Microfabricated sensors for environmental monitoring, Nankai University, Tianjin, China, (Nov 2016) **(invited)**
17. P.R. Selvaganapathy, Fast bacterial culture using microfluidics, Jiangsu Industrial Technology Research Institute, (Sep 2016) **(invited)**
18. P.R. Selvaganapathy, Printed gel platforms with integrated microfluidic channels for perfusion and cell culture, Canadian Chemistry Conference, Halifax, Canada, (Jun 2016) **(invited)**
19. P.R. Selvaganapathy, Simple sample preparation for bioassays, 229th Electrochemical Society Conference, San Diego, USA, (May 2016) **(invited)**
20. P.R. Selvaganapathy, A frequency domain optofluidics dissolved oxygen sensor with enhanced sensitivity for water monitoring, 229th Electrochemical Society Conference, San Diego, USA, (May 2016) **(invited)**
21. P.R. Selvaganapathy, 3D printing of microfluidic vascular channels in gels using commercial 3D printers, SPIE Photonics West, BIOS, San Francisco, USA, (Feb 2016) **(invited)**
22. P.R. Selvaganapathy, Sensors exploiting the nanoscale phenomena for environmental and medical monitoring, Indo-Canadian Symposium on Nanotechnology, Mysore, India, (Feb 2016) **(invited)**
23. P.R. Selvaganapathy, Microfluidic sample preparation for handling raw biological samples – examples of urine and plasma, Canadian Chemistry Conference, Vancouver, Canada, (Jun 2014) **(invited)**
24. P.R. Selvaganapathy, Simple microfluidic sample preparation for point of care diagnostics, Ontario on a Chip Conference, Toronto, Canada, (May 2014) **(invited)**
25. P.R. Selvaganapathy, Advanced functional materials for biomicrofluidics, Thermec Conference, Las Vegas, USA, (Dec 2013) **(invited)**
26. C.Fusch, P. R. Selvaganapathy, Development Of Microfluidic Oxygenators As Lung Assisting Devices For Term And Preterm Newborn Infants, 9th Int. Conf. on Pediatric Mechanical Circulatory Support Systems & Pediatric Cardiopulmonary Perfusion, Hershey, PA, USA, (May 2013) **(invited)**
27. P.R. Selvaganapathy, Microfluidics and its application in drug discovery, drug delivery and diagnostics, Department of Chemistry and Chemical Engineering, Soochow University, Suzhou, China, (Nov 2012) **(invited)**
28. P.R. Selvaganapathy, Integration of functional materials into microfluidic devices, Canadian Materials Science Conference, London, Canada, (Jun 2012)
29. P.R. Selvaganapathy, Electrical control of fluid flow and transport at the microscale, Center for Nanoscience and Engineering , Indian Institute of Science, Bangalore, India (Mar 2012) **(invited)**
30. P.R. Selvaganapathy, Microfluidics and how does it relate to wood and its products?, Institute of Wood Science and Technology , Bangalore, India (Feb 2012)
31. P.R. Selvaganapathy, What is MEMS and microfluidics, National Institute of Engineering , Mysore, India (Feb 2012) **(invited)**
32. P.R. Selvaganapathy, Electrifying microfluidics – A few examples of using electric fields and forces to control microfluidic components and a few applications, Materials Research Center , Indian Institute of Science, Bangalore, India (Feb 2012)
33. P.R. Selvaganapathy, Smart materials and surfaces in microfluidics – a few examples, Sixth International Conference , Bangalore, India (Jan 2012) **(invited)**
34. P.R. Selvaganapathy, Electrifying Microfluidics, Brockhouse Institute of Materials Research, McMaster University, (Nov 2011)
35. P.R. Selvaganapathy, Electrical methods for transport of particles, cells, organisms and generation of droplets in microfluidic systems, 2011 CMOS Emerging Technologies Workshop, Whistler, British Columbia, (June 2011)

36. M.J. Deen, M.M.R. Howlader, P.R. Selvaganapathy, T. Suga, Nanobonding technologies for emerging applications, in *Proc. of International Conference on Electronic Packaging*, Kyoto, Japan, (2011) (**invited**)
37. S. Safari, P.R. Selvaganapathy, M.J. Deen, Microfluidic reference electrode and its application in BioFET, Pacificchem 2010, Honolulu, Hawaii, (Dec 2010)
38. B.G. Gupta, P. Rezai, P.R. Selvaganapathy, Microfluidic systems for chemical screening and drug discovery, 2010 CMOS Emerging Technologies Workshop, Whistler, British Columbia, (May 2010)
39. P. Selvaganapathy, Microfluidics for optoelectronic applications, 217th Electrochemical Society Meeting, Vancouver, (April 2010).

Contributed

1. V. Patel, P. Kruse and P. R. Selvaganapathy, Hydrogen peroxide chemiresistive detection platform with wide range of detection, in *IEEE Sensors Conference*, Montreal, QC, Canada, (Oct 2019)
2. A. Mohammadzadeh, A.E. Fox-Robichaud, P. R. Selvaganapathy, Parallel Multimaterial Electroplating Using Patterned Gels and Integration into Microfluidic Devices, IEEE Sensors Conference, Montreal, Canada, (Oct 2019)
3. A. Shamsabadi, P. R. Selvaganapathy, ExCeL: Combining Extrusion Bioprinting on Cellulose Scaffolds with Lamination for Perfusable Tissue Constructs, *TERMIS EU Conference*, Rhodes, Greece, (May 2019)
4. E. Hoque, L. H-H. Hsu, A. Aryasomayajula, P. R. Selvaganapathy, and P. Kruse, Pencil-Drawn Chemiresistive Sensor for Free Chlorine in Water, *IEEE Sensors Conference*, Glasgow UK, (Oct – Nov 2017)
5. R. Attalla, C. Ling, P.R. Selvaganapathy, Lamination-Based Assembly of Hydrogels with Integrated Channels Using Nanoparticle Adhesives, in *39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, (July 2017)
6. H.H. Hsu, P. R. Selvaganapathy, Development of all solid state sensors for environmental water monitoring: dissolved oxygen and free chlorine, in *ECS Conference*, San Diego, USA, (May 2016)
7. H.H. Hsu, E. Hoque, P. R. Selvaganapathy, P. Kruse, A carbon nanotube based resettable sensors for measuring free chlorine in drinking water, In *IEEE Sensors Conference*, Spain, (Nov 2014).
8. H.H. Hsu, P.R. Selvaganapathy, Stable and reusable electrochemical sensor for continuous monitoring of phosphate in water, In *IEEE Sensors Conference*, Spain, (Nov 2014)
9. P. Madadkar, P.R. Selvaganapathy, R. Ghosh, Protein PEGylation using microreactors, In *2014 AIChE Annual Meeting*, , Atlanta, USA, (Nov. 2014)
10. R. Ghaemi, P. Rezai, B. Iyengar, F. Rafiei Nejad, P.R. Selvaganapathy, A microfluidic chip for investigating auditory responses in the larval stage of the fruit fly, , in *The 18th International Conference on Miniaturized Systems for Chemistry and Life Sciences*, San Antonio, USA, (Oct 2014)
11. S.B. Campbell, J. Yang, W.I. Wu, P.R. Selvaganapathy, T.R. Hoare, Design of a Microinjection Device for Injection of in Situ Gelling Hydrogels for Ophthalmic Drug Delivery, *AIChE Annual Meeting*, San Francisco, USA, (Nov 2013)
12. A.S. Jawed, W. Syed, W.I. Wu, S.B. Campbell, T.R. Hoare, P.R. Selvaganapathy, Wirelessly Controlled Microfluidic Actuators Using Radiofrequency Electromagnetic Induction, *AIChE Annual Meeting*, San Francisco, USA, (Nov 2013)
13. H.H. Hsu, P. Selvaganapathy, Development of a low cost haemin based dissolved oxygen sensor with anti-biofouling coating for water monitoring, In *IEEE Sensors conference*, Baltimore, USA, (Oct 2013). (**Best student paper award in chemical sensors**)
14. H-H. Hsu, P.R. Selvaganapathy, Q. Fang, C.Q. Xu, Development of a miniaturized dissolved oxygen sensor for water monitoring, in *221st Electrochemical Society Meeting*, Seattle, WA, USA, (May 2012)
15. P. Rezai, S. Salam, P.R. Selvaganapathy, B. Gupta, Separation of *Caenorhabditis elegans* by electrotaxis in a microdevice, in *The 16th International Conference on Solid-State Sensors, Actuators and Microsystems (Transducers 2011)*, Beijing, China, 2766-2769, (2011).
16. S. Salam, P. Rezai, P.R. Selvaganapathy, R.K. Mishra, B.P. Gupta, Microfluidics approach to study neurodegeneration in a *Caenorhabditis elegans* Parkinson's disease model, in 18th International C. elegans meeting, Los Angeles, USA. (June 2011)
17. W.I. Wu, D. Ewing, P.R. Selvaganapathy, C.Y. Ching, Periodic flow measurement using micro particle image Velocimetry, in 5th Ontario on a Chip Conference, Toronto, Canada, (May 2010)

18. P. Rezai, B.P. Gupta, P.R. Selvaganapathy, Application of *Caenorhabditis elegans*' Electrosensory Response in Drug Discovery Assays for Movement Disorder Diseases, in 5th Ontario on a Chip Conference, Toronto, Canada, (May 2010)
19. S. Safari-Mohsenabad, P.R. Selvaganapathy, M.J. Deen, Microfluidic Reference Electrode for Lab-on-Chip Sensing Application, in 5th Ontario on a Chip Conference, Toronto, Canada, (May 2010)
20. S. Safari-Mohsenabad, P.R. Selvaganapathy, A. Derardja, M.J. Deen, Nanosheetformation by electrodeposition and its application to miniaturized reference electrodes, in 217th Electrochemical Society Meeting, Vancouver, BC, Canada, (Apr 2010)
21. W. Shinwari, P.R. Selvaganapathy, M.J. Deen, Geometric and conformational considerations in biotransistors, in 217th Electrochemical Society Meeting, Vancouver, BC, Canada, (Apr 2010)
22. A. Noori, P. Selvaganapathy, Single cell microinjection using compliant fluidic channels, in *Proc. of the 12th International Conference on Miniaturized Systems for Chemistry and Life Sciences (μ TAS 2009)*, San Diego, U.S.A, 1971-1973, (2009)