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WORK EXPERIENCE

- **University of Cambridge**, Cambridge, UK (cross appointed at the Indian Institute of Science)
Lecturer, Department of Engineering, Jan 2017-Present
- **Indian Institute of Science**, India (cross appointed at the University of Cambridge)
Assistant Professor, Department of Instrumentation and Applied Physics, Oct 2010-2016; Associate Professor,
Department of Instrumentation and Applied Physics, Oct 2016-Present;
- **openwater.in**, Bangalore, India
Founder and Director, Dec 2016-Present
- **Xerox Palo Alto Research Center**, Palo Alto, California, USA
Oct 2006-Oct 2010

EDUCATION

- **University of Waterloo**, Waterloo, Ontario, Canada
Doctorate of Philosophy, Department of Electrical and Computer Engineering, 2002-2006
- **Indian Institute of Technology**, Kharagpur, India
Bachelor of Technology, Electrical Engineering (Minor:Energy Systems), 1998-2002

AWARDS AND HONORS

- **Fellow**, St. Edmund's College, Cambridge, UK, 2017
- **DBT BIRAC Innovator of the Year**, 2017
- **DBT-Cambridge Lectureship**, 2016, (via an exceptional talent endorsement by the Royal Acad. of Eng.)
- **Golden Acorn Award**, Xerox Palo Alto Research Center, 2012
- **Special Recognition Award**, Xerox Palo Alto Research Center, 2008
- **Institute Proficiency Prize**, Indian Institute of Technology - Kharagpur, 2002
- **Recognitions of openwater.in** 1st Place Google Award@Zurich 2015, Top 10 F6S Kickstart 2016 (of 400 startups worldwide), Top 10 Hottest Startups 2016 (by GEN, of 1000+ startups from 165 countries), Elevate 100.

PATENTS

1. S. Sambandan, J. Northrup, R.A. Street, Self assembly of field emission tips by capillary bridge formations US Patent:8,430,705
2. S. Sambandan, R. A. Street, Textured gate for high current thin film transistors, US Patent: 20,130,001,689
3. S. Sambandan, A. Arias, G. Whitting, Thin film field effect transistor with dual semiconductor layers, US Patent:8,288,799.
4. S. Sambandan, R. A. Street and A. Arias, Horizontal coffee-stain method using control structure to pattern self-organized line structures, US Patent: 8,268,725.
5. S. Sambandan, R. A. Street and A. Arias, Vertical coffee-stain method for forming self-organized line structures, US Patent: 8,158,465.
6. S. Sambandan, W. S. Wong and R. A. Street, Large area electronic sheet and pixel circuits with disordered semiconductors for sensor actuator interface, US Patent: 8,411,075.
7. S. Sambandan, W. S. Wong, R. A. Lujan, S. J. Limb and R. A. Street, Structure and method for flexible sensor array, US Patent: 7,824,949.
8. W. S. Wong, M. L. Chabinyc, P. Qi, S. Sambandan, Flexible nanowire sensors and field-effect devices for testing toner, US Patent: 8,000,613.

9. W. S. Wong, S. Sambandan, T. Nga, and R. A. Street, Charge mapping memory array formed of materials with mutable electrical characteristics, US Patent: 7,679,951.
10. WS Wong, S Sambandan, TN Ng, RA Street, Memory cell, EP Patent 2,073,211
11. J. Daniel, S. Sambandan, Conformal sensor tape, US Patent: 8,047,049.
12. R. A. Street, J.P.Lu and S. Sambandan, Flexible segmented image sensor, US Patent: 7,742,090.
13. S. Sambandan, K. Sakariya, P. Servati, and A. Nathan, A pixel circuit for AMOLED displays, CA Patent: 08898614.
14. S. Sambandan, P. Servati, and A. Nathan, Method and system for calibrating a light emitting device display, CA Patent: 2,528,641.
15. S. Sambandan, K. Sakariya, P. Servati, and A. Nathan, Optimising the voltage programmed pixel driver for AMOLED displays-pixel select and drive stages, CA Patent: 2454757 A1.
16. B. K. Thakur, P. Bhattacharya, S. Sambandan, Low Power Electrostatic Discharge Protection Circuit TEMP/E-1/43747/2016-CHE (filed)
17. S. Sambandan, K. Raghunandan, A. Nair, Electrical gradient augmented fluid filtration apparatus TEMP/E-1/24825/2014-CHE (filed)
18. S. Sambandan, G. Saravanavel, K. Raghunandan A flexible profilometer TEMP/E-1/24691/2014-CHE (filed)
19. S. Sambandan, K. Prakash, A desalination device 1506/CHE/2013 (filed)

BOOKS AND BOOK CHAPTERS

1. Circuit Techniques for Non Crystalline Semiconductors, Taylor Francis-CRC, 2012.

JOURNAL PUBLICATIONS

1. A. Nair, P. Bhattacharya and S. Sambandan, "Modulating Thin Film Transistor Characteristics by Texturing the Gate Metal," *Scientific Reports*, vol. 7, no. 1, pp. 17932, 2017.
2. O. Prasad, P. Jha, S. Pillai, M. Prasad, B. Amrutur and S. Sambandan, "Interconnects on elastomers: optimizing for stretchability, speed and layout area," *IOP Flexible and Printed Electronics*, vol. 2, no. 4, pp. 045007, 2017.
3. P. Kodali and S. Sambandan, "Crumpling for Energy: modeling generated power from the crumpling of polymer piezoelectric foils for wearable electronics," *IOP Flexible and Printed Electronics*, vol. 2, no. 3, pp. 035005, 2017.
4. V. Yaswanth, A. Kumar and S. Sambandan, "Self Healing of Open Circuit Faults: With Active Reconfigurability and mimicry of synaptic plasticity," *Appl. Phys. Letts.*, vol. 109, no. 2, pp. 024101, 2016.
5. S. R. Udata, A. Ruhela, G. Saravanavel, V. Yaswant, J. Singh and S. Sambandan, "Design Optimization of Thin-Film Transistors Based on a Metal Substrate Semiconductor Architecture for High DC Voltage Sensing," *IEEE Trans. Electron Devices*, vol. 63, no. 4, pp. 1696-1703, 2016.
6. G. Saravanavel, K. Raghunandan and S. Sambandan, "Soft and Morphable Displays and Profilometers: Self-Assembled Out-of-Plane by Capillary Pressure Acting on a Gel," *IEEE Trans. on Electron Devices*, vol. 63, no. 5, pp. 2023-2028, 2016.
7. A. Nair, K. Raghunandan, V. Yaswant, S. S. Pillai and S. Sambandan, "Maze solving automatons for self-healing of open interconnects: Modular add-on for circuit boards," *Applied Physics Letts.*, Vol. 106, pp. 123103, 2015.
8. S. Mazumdar, M. Nyaypati, S. Sambandan and A. J. Bhattacharyya, "Cadmium Sulfide Nanocrystal Sensitized Vertically Aligned Titanium Dioxide Rods for Large Area Image Sensors on 3-D Substrates," *ECS J. Solid State Sci. Tech.*, vol. 4, no. 12, pp. 119, 2015.
9. R. Amalraj and S. Sambandan, "Influence of curvature on the device physics of thin film transistors on flexible substrates," *J. of Applied Physics*, vol. 116, no. 16, pp. 164507, 2014.
10. M. Raghuraman and S. Sambandan, "AIM-Spice Integration of a Recursive Model for Threshold Voltage Shift in Thin Film Transistors," *IEEE Journal of Display Technology*, vol. 10, no. 6, pp. 508-513, 2014.
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13. K. Prakash, R. Mahidhar, S. Sambandan, "Harvesting Energy at Resonance from Standing Waves on Polymer Piezoelectric Ribbon-like Membrane." *Electronic Letts.*, Vol. 49, No. 20, pp. 1294-1296, 2013

14. R. Mahidhar, K. Prakash, R.N. Aswathi, M.V.N. Prasad and S. Sambandan, "Vibration spectrum analyzer using stretched membranes of polymer piezoelectrics for sensor networks," *Measurement Science and Technology*, vol. 24, no. 5, pp. 055108, 2013.
15. S. Sambandan, "Self Repair in Circuits Automating Open Fault Repair in Integrated Circuits Using Field-Induced Aggregation of Carbon Nanotubes," *IEEE Trans. Electron Devices*, vol. 59, no. 6, pp. 1773, 2012.
16. S. Sambandan, "Influence of Gate Corrugations on the Performance of Thin-Film Transistors," *IEEE Electron Device Letts.*, vol. 33, no. 1, pp. 56-58, 2012.
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18. W. Wong, T.N. Ng, S. Sambandan and M. Chabinye, "Materials, Processing, and Testing of Flexible Image Sensor Arrays," *IEEE Design and Test of Computers*, vol. 8, no. 6, pp. 16-23, 2011.
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20. T. Ng, S. Sambandan, J. Daniel and A. C. Arias, "Inkjet-Patterned Organic Complementary Circuits and Non-Volatile Memory Arrays Based on Ferroelectric Field-Effect Transistors," *Electrochemical Society*, vol. 33, no. 5, pp. 239-243, 2010.
21. S. Sambandan, G. Whiting, A. Arias and R. Street, "Fast polymer transistors by nanoparticle self assembly", *Organic Electronics*, vol. 11, no. 12, pp. 1935-1941, 2010.
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24. S. Sambandan, R. B. Apte, W. S. Wong, R. Lujan, M. Young, B. Russo, S. Ready and R. A. Street, "Defect Identification in Large Area Electronic Backplanes," *IEEE J. Display Technology*, vol. 5, no. 1, pp. 27-33, 2009.
25. T. Ng, S. Sambandan, R. Lujan, A. Arias, C.R. Newman, H. Yan and A. Facchetti, "Electrical Stability of Inkjet-patterned Organic Complementary Inverters Measured in Ambient Conditions", *Applied Physics Letts.*, vol. 94, no. 23, pp. 233307, 2009.
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31. S. Sambandan and A. Nathan, "Single-Technology-Based Statistical Calibration for High-Performance Active-Matrix Organic LED Displays", *IEEE J. Display Technology*, vol. 3, no. 3, pp. 284-294, 2007.
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33. S. Sambandan and A. Nathan, "Stable Organic LED Displays Using RMS Estimation of Threshold Voltage Dispersion," *IEEE Circuits and Systems II: Express Briefs*, vol. 53, no. 9, pp. 941-945, 2006.
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37. S. Sambandan, L. Zhu, D. Striakhilev, P. Servati and A. Nathan, "Markov Model for Threshold-voltage Shift in Amorphous Silicon TFTs for Variable Gate Bias", *IEEE Electron Device Letts.*, vol. 26, no. 6, pp. 375-377, 2005.

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39. K. Sakariya, S. Sambandan, P. Servati and A. Nathan, "Analysis and Characterization of Self-compensating Current Programmed a-Si:H Active Matrix Organic Light-emitting Diode Pixel Circuits", *J. Vacuum Science and Technology A: Vacuum, Surfaces, and Films*, vol. 22, no. 3, pp. 1001-1004, 2004.
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CONFERENCE PROCEEDINGS

1. V. Yaswant, A. Kumar, V. Parab and S. Sambandan "Self Healing Interconnects for Reliable Flexible Electronics" in *233rd Meeting of ECS*, Seattle, US, May 2018 (*Invited*).
2. M. Raghuraman, S. Sambandan and S. Yadav, "Large Area Flexible Electronics for Analog Mode Continuous Time Applications," in *Proc. Electronics, Computing and Communication Technologies (CONECCT)*, 2015.
3. A. Dutta and S. Sambandan, "Android based EEG speller for the disabled," in *Proc. Intl. Conf. Electrical, Electronics, Signals, Communication and Optimization*, 2015.
4. S. Sambandan, "Self Healing of Open Interconnects for Large Area Flexible Electronics Using Field Based Aggregation of Carbon Nanotubes," *55th Electronics Materials Conference*, 2013.
5. A. Dutta and S. Sambandan, "Limitations of Integrating Field Induced Aggregation based Fault Repair Automaton with Integrated Circuits," in *Proc. IEEE Systems on Chip*, pp. 100-103, 2012.
6. P. Kodali, M. Mahidhar, N. Lokesh, M. Prasad and S. Sambandan, "Vibration energy harvesting," in *Proc. IEEE Intl. Conf. on Emerging Electronics*, 2012.
7. S. Sambandan, "Thin film transistors with buckled gate," *International Semiconductor Device Research Symposium*, 2011.
8. S. Sambandan, "Sharp tips from crumples and capillary bridges," in *Proc. Materials Research Symposium Fall Meeting*, vol. 7, pp. 1301, 2010.
9. G. L. Whiting, R.J.P. Kist, T.N. Ng, S. Sambandan, B. Russo, B.S Krusor and A.C Arias, "Ink-jet printed electrodes for organic field-effect transistors," vol. 238, in *Proc. American Chemical Soc. Meeting*
10. S. Sambandan, "Compact Model for Sub-Threshold Operation in Polymer Semiconductor Thin Film Transistors," *Electronic Materials Conference*, 2009.
11. S. Sambandan, "Self Organised Electrodes Using Controlled Coffee Stain Phenomena for High Aspect Ratio Polymer Field Effect Transistors on 3D Substrates," *Electronic Materials Conference*, 2009.
12. W.S. Wong, T.N. Ng, M.L. Chabinye, R.A. Lujan, R.B. Apte, S. Sambandan, S. Limb and R. A. Street, "Flexible a-Si:H based image sensors fabricated by digital lithography," in *Proc. Materials Research Society*, vol. 989, 2007.
13. S. Sambandan and A. Nathan, "Adaptive Estimation of Device Parameters for Pixel Calibration in Large Area Display Systems," in *Proc. IEEE North-East Workshop on Circuits and Systems*, pp. 257-260, 2006.
14. S. Sambandan and A. Nathan, "Circuit techniques for organic and amorphous semiconductor based field effect transistors," in *Proc. 36th European Solid-State Device Research Conference*, pp. 69-72, 2006.
15. S. Sambandan and A. Nathan, "A stable n-channel mirrorable current source for versatile analog design with thin film transistors," in *Proc. 48th Midwest Symposium on Circuits and Systems*, pp. 836-839, 2005.
16. S. Sambandan and A. Nathan, "Fuzzy current control using current mode WTA-LTA circuits in flexible organic displays," in *Proc. 48th Midwest Symposium on Circuits and Systems*, vol. 2, pp. 1609, 2005.
17. S. Jafarabadiashtiani, G. Chaji, S. Sambandan, D. Striakhilev, A. Nathan and P. Servati, "A New Driving Method for aSi AMOLED Displays Based on Voltage Feedback," in *Proc. SID Symposium Digest*, vol. 36, no. 1, pp. 316-319, 2005.
18. S. Sambandan, K. Sakariya, P. Servati, A. Kumar and A. Nathan, "Voltage programmed pixel driver circuits for AMOLED applications: design optimization of pixel select and drive stages," in *Proc. SPIE*, vol 5363, pp. 16-26, 2004. (*Invited*)