

JOURNAL PUBLICATIONS

1. Geerthy Thambiraj, Uma Gandhi, Umapathy Mangalanathan, V. Jeya Maria Jose, Manjunath Anand, "Investigation on the effect of Womersley number, ECG and PPG features for cuff less blood pressure estimation using machine learning", Biomedical Signal Processing and Control, Volume 60, July 2020.
2. Ramya Anandanatarajan, Umapathy Mangalanathan and Uma Gandhi, "Enhanced Microcontroller Interface of Resistive Sensors Through Resistance-to-Time Converter," in IEEE Transactions on Instrumentation and Measurement, vol. 69, no. 6, pp. 2698-2706, June 2020.
3. Shereen Selvaraj, Uma Gandhi, Umapathy Mangalanathan, Gopalkrishna Hegde "Magnetic Force based Resonant Magnetic Field Sensor with Piezoelectric Readout", IEEE Sensors Journal pp 1-1, June 2020.
4. Shereen Selvaraj, Uma Gandhi, L. John Berchmans, Umapathy Mangalanathan "Effect of magnetic ion substitution on the structure and temperature-dependent magnetic properties of strontium hexaferrite", Materials Technology, 2020.
5. Shereen Selvaraj, Uma Gandhi, U. Mehana Usmaniya, L. John Berchmans, Umapathy Mangalanathan "Effect of high energy ball milling on molten salt synthesized barium hexaferrite powder", IEEE Transactions on Magnetics, 2020.
6. Shereen Selvaraj, Uma Gandhi, Umapathy Mangalanathan, and L. John Berchmans "Enhancement of Saturation Magnetization and Remanence of BaFe₁₂O₁₉ Materials Prepared by NaCl–KCl and Hexamine as Flux", IEEE Magnetics Letters, Vol 11, 2020.
7. Geerthy Thambiraj, Uma Gandhi, Viji Devanand and Umapathy Mangalanathan, "Noninvasive cuffless blood pressure estimation using pulse transit time, Womersley number, and photoplethysmogram intensity ratio", Institute of Physics and Engineering in Medicine Physiological Measurement, Volume 40, Number 7, 2019.
8. Raghavendran Srinivasan, Umapathy Mangalanathan, Uma Gandhi, "Dual input buck-boost converter for hybrid Piezoelectric Energy Harvester- Supercapacitor sources", AEU - International Journal of Electronics and Communications, Volume 111, November 2019.
9. Raghavendran Srinivasan, Mangalanathan Umapathy, Uma G, Karl Marx, "Bridgeless active rectifier for piezoelectric energy harvesting", IET Circuits, Devices & Systems, Volume number 13, Issue 7, October 2019.
10. T.N. Satish, A.N.V. Rao, A.S. Nambiar, G. Uma, M. Umapathy, U. Chandrashekhar, V.U. Petley, "Investigation into the Development and Testing of a Simplex Capacitance Sensor

for Rotor Tip Clearance Measurement in Turbo Machinery”, Experimental Techniques Volume 42, Issue 6, pp 575–592, 2018.

11. M. S. Manjunath, N. Nagarjuna, G Uma, M. Umapathy, M. M. Nayak, K. Rajanna, "Design, fabrication and testing of reduced graphene oxide strain gauge based pressure sensor with increased sensitivity", Microsystems Technologies, Vol 24, Issue 7, pp 2969–2981, 2018.
12. R Usharani, G Uma, M Umapathy, Seung-Bok Choi, “A Novel Piezoelectric Energy Harvester Using Multi-Stepped Beam with Rectangular Cavities” Applied Sciences, 2018. [Accepted]
13. V. Partha Sarathi, G. Uma, M. Umapathy, “Realization of Fractional order Inductive Transducer”, IEEE SENSORS JOURNAL, vol. 18, issue no. 21, pp. 8803-8811, 2018 .
14. Srinivasulu Raju, S., M. Umapathy and G. Uma Design and analysis of high output piezoelectric energy harvester using non-uniform beam. Journal of Mechanics of Advanced Materials and Structures, pp. 1-10, 2018.
15. PalaniKumar Gurusamy , Uma Gandhi , Umapathy Mangalanathan and Arunshankar Jayabalan "Higher order sliding mode controller for urea-SCR system", Turkish Journal of Electrical Engineering and computer sciences, vol. 26, issue. 3, pp. 1505-1514, 2018.
16. Pandiyan, P., G. Uma, and M. Umapathy "Design and simulation of electro-thermal compliant MEMS logic gates." COMPEL: International journal for computation and mathematics in electrical and electronic engineering 37(2), pp. 868-889, 2018.
17. Pandiyan P, Uma G, Umapathy M, " Design and Simulation of MEMS Electro-thermal complaint Actuator based Logic Gates" COMPEL - The International Journal for Computation and Mathematics in Electrical and Electronics Engineering pp.1-9.
18. Parthasarathi Veeraian, Uma Gandhi, Umapathy Mangalanathan, " Analysis of Fractional order Inductive Transducers", The European Physical Journal Special Topics (EPJ ST), vol 226, pp. 3851-3873, 2017.
19. PalaniKumar Gurusamy , Uma Gandhi , Umapathy Mangalanathan, Karl Marx LR, "Electrical conductivity based quality measurement of diesel exhaust fluid", Journal of Analytical Chemistry, vol. 73, issue. 11, 2018.
20. Parthasarathi Veeraian, Uma Gandhi, Umapathy Mangalanathan, "Design and Analysis of Fractional order Seismic Transducer for Displacement and Acceleration Measurements", Journal of Sound and Vibration, Vol.419(C), pp.123-139, 2018.
21. MS Manjunath, G Uma, M Umapathy, MM Nayak, "Design, fabrication and testing of fiber bragg grating based fixed guided beam pressure sensor", Optik-International Journal for Light and Electron Optics,2018.

22. PK Gurusamy, U Gandhi and U Mangalanathan, "A study on optical characteristics and quality monitoring of diesel exhaust fluid", Optik-International Journal for Light and Electron Optics, Vol.155, pp.31-35, 2018.
23. Pandiyan P, Uma G, Umapathy M, "Design And Simulation Of Electrostatic NEMS Logic Gates " COMPEL-The International Journal for Computation and Mathematics in Electrical and Electronics Engineering 37 (1), pp.2-28, 2017.
24. Ramalingam Usharani, Gandhi Uma, Mangalanathan Umapathy and Seung-Bok Choi, " A new piezoelectric-patched cantilever beam with a step section for high performance of energy harvesting", Sensors and Actuators A : Physical, Vol.265, pp.47-61, 2017.
25. S Srinivasulu Raju, M Umapathy , G Uma , " High-output piezoelectric energy harvester using tapered beam with cavity", Journal of Intelligent Material Systems and Structures, 29(5), pp. 800-815. 2017.
26. PalaniKumar Gurusamy , Uma Gandhi , Umapathy Mangalanathan, Karl Marx LR, " Measurement of Diesel Exhaust Fluid Concentration in Urea-SCR after-Treatment System", International Journal of Precision Engineering and Manufacturing, Vol.18 , No.8, pp.1085-1092, August 2017.
27. Parthasarathi Veeraian, Uma Gandhi, Umapathy Mangalanathan, "Fractional order Linear Variable Differential Transformer: Design and analysis", International Journal of Electronics and Communications, Vol.79, pp.141-150, May 2017.
28. Sujan Yenuganti, Uma Gandhi, Umapathy Mangalanathan, "Piezoelectric microresonant pressure sensor using aluminium nitride", Journal of Micro/Nanolithography, MEMS, and MOEMS, Vol.16, No.2, 2017.
29. P. Pandiyan, G. Uma & M. Umapathy, " Design and Simulation of MEMS-Based Digital-to-Analog Converters for In-plane Actuation", Arabian Journal for Science and Engineering 42(12), pp. 4991-5001, 2017.
30. Ramalingam Usharani, Gandhi Uma, Mangalanathan Umapathy and Seung-Bok Choi," A new broadband energy harvester using propped cantilever beam with variable overhang", Journal of Smart Structures and Systems, Vol.19, No.5, pp.567-576, April 2017.
31. Ramalingam Usharani, Gandhi Uma, Mangalanathan Umapathy and Seung-Bok Choi, "Design of high output broadband piezoelectric energy harvester", Journal of Mechanical Science and Technology, Vol.31, No.7 pp.3131-3142, 2017.
32. S Srinivasulu Raju, M Umapathy, G Uma, "Piezoelectric energy harvesting with single and multiple condensed cavities", Journal of Ferroelectrics, Vol.507, No.1, pp.29-42, 2017.

33. T. N. Satish, K. P. Rakesh, G. Uma, M. Umapathy, U. Chandrasekhar, A. N. V. Rao, V. Petley, "Functional Validation of K-Type (NiCr-NiMn) Thin Film Thermocouple on Low-Pressure Turbine Nozzle Guide Vane (LPT NGV) of Gas Turbine Engine", *Experimental Techniques*, Vol. 41(2), pp. 131-138, November 2016.
34. J. Sivaraman, G. Uma, P. Langley, M. Umapathy, S. Venkatesan, G. Palanikumar, "A study on stability analysis of axial repolarization variability using ARX model in sinus rhythm and atrial tachycardia ECGs", *Computer Methods and Programs in Biomedicine*, Vol. 137, pp. 341-351, October 2016.
35. Ramalingam Usharani, Gandhi Uma, Mangalanathan Umapathy, "Design of High Output Broadband Piezoelectric Energy Harvester with Double Tapered Cavity Beam", *International Journal of Precision Engineering and Manufacturing- Green Technology*, Vol. 3, No. 4, pp. 343-351, October 2016.
36. Y. Sujana, G. Uma, M. Umapathy, "Design and testing of piezoelectric resonant pressure sensor", *Sensors and Actuators A: Physical*, vol. 250, 177-186, September 2016.
37. Y. Sujana, G. Uma, M. Umapathy, "Micro pressure sensor with three degrees of freedom resonator". *Journal of Microsystem Technologies*, Vol. 23, pp. 3201-3214, August 2016.
38. Y. Sujana, G. Uma, M. Umapathy, Design and modelling of a resonant pressure sensor, *Journal of Microsystem Technologies*, Vol. 23, pp. 1285-1293, February 2016.
39. S. Sathiyaraj, M. Umapathy, B. Vasuki, G. Uma. Simple liquid pumping system using piezoelectric actuated cantilever beam. *Journal of Instruments and Experimental Techniques*, Vol. 59, No. 1, pp. 142–148, 2016.
40. S. Srinivasulu Raju, M. Umapathy, G. Uma. Cantilever piezoelectric energy harvester with multiple cavities, *Journal of Smart Materials and Structures*. Vol. 24, 115023(11pp), 2015.
41. A. Rami Reddy, M. Umapathy, D. Ezhilarasi, G. Uma. Piezoelectric energy harvester with shape memory alloy actuator using solar energy, *IEEE Transactions on Sustainable Energy*, Vol. 6(4), pp. 1409 -1415, 2015.
42. Pankaj Shivhare, G. Uma, M. Umapathy. Design enhancement of a chevron electrothermally actuated microgripper for improved gripping performance, *Journal of Microsystem Technologies*, Vol. 22(11), pp. 2623 - 2631, 2015.
43. A. Rami Reddy, M. Umapathy, D. Ezhilarasi, G. Uma. Cantilever Beam with Trapezoidal Cavity for Improved Energy Harvesting. *Journal of International Journal of Precision Engineering and Manufacturing*, Vol 16(8), 1875-1881, 2015.

44. A. Rami Reddy, M. Umapathy, D. Ezhilarasi, G. Uma. Modelling and Experimental investigations on stepped beam with cavity for energy harvesting. *Journal of Smart Structures and Systems*. Vol. 16(4), 2015.
45. A. Rami Reddy, M. Umapathy, D. Ezhilarasi, G. Uma, Improved energy harvesting from vibration by introducing cavity in a cantilever beam *Journal of Vibration and Control*, Vol.22(13), pp. 3057-3066, Nov 2014.
46. J. Sivaraman, G. Uma, S. Venkatesan, M. Umapathy, M. S. Ravi, Unmasking of atrial repolarization waves using modified limb lead system, *Anatolian Journal of Cardiology*, "In Press", 2015.
47. J. Sivaraman, G. Uma, S. Venkatesan, M. Umapathy, V. E. Dhandapani, Normal limits of ECG measurements related to atrial activity using a modified limb lead system, *Anatolian Journal of Cardiology*, Vol. 15, 2-6, 2015.
48. J. Sivaraman, G. Uma, S. Venkatesan, M. Umapathy, N. Keshavkumar, A study on atrial Ta wave morphology: An approach using P wave signal averaging method, *Journal of Medical Imaging and Health Informatics*, Vol. 4(6), 675-680, 2014.
49. S. Hariharakrishnan, D. Ezhilarasi, G. Uma, M. Umapathy, Pyroelectric based solar and wind energy harvesting system, *IEEE Transactions on Sustainable Energy*, Vol.5, No.1, 73-81, 2014.

CONFERENCE PUBLICATIONS

1. Akila R, G. Uma, M. Umapathy, "Sensitivity Enhancement of Resonant Sensor using Output Feedback Control", 3rd International Conference on Electrical, Electronics, Engineering Trends, Communication, Optimization and Sciences (EEECOS), 2016.
2. Akila R, G. Uma, K. Suresh, S.S.Choi, M. Umapathy, "Design of an electronic oscillator for resonant pressure sensor with non-collocated sensor and actuator", SPIE Active and Passive Smart Structures and Integrated Systems Conference held at Las Vegas, U.S.A., 2016.
3. G. Sruthi, G. Uma, M. Umapathy, ParthaSarathi V, "Sliding Mode Control for Piezoelectric Actuated Cantilever based Liquid Pumping System", ISSS National Conference on MEMS, Smart materials, Structures and Systems, IIT kanpur, September 2016.
4. G. Sruthi, ParthaSarathi V, G. Uma, M. Umapathy, "Design of Closed Loop Micro Accelerometer for Performance Improvement", ISSS National Conference on MEMS, Smart materials, Structures and Systems, IIT kanpur, September 2016.
5. Pankaj Shivhare, G. Uma, Y. Sujana, M. Umapathy, "Sensitivity Improvement of a Silicon Nitride Beam Resonant Pressure Sensor", International Conference on MEMS and Sensors

(ICMEMSS 2014) to be held at Indian Institute of Technology Madras, Chennai, December 18-20, 2014.

6. Pandiyan.P, G. Uma, M. Umapathy, Y. Sujan, “Design and Simulation of Chevron Type MEMS Digital to Analog Converters”, International Conference on MEMS and Sensors (ICMEMSS 2014) to be held at Indian Institute of Technology Madras, Chennai, December 18-20, 2014.
7. Pandiyan. P, G. Uma, M. Umapathy, K. Suresh, “Sensitivity Improvement of Resonant Sensor With PID Controller”, Proceedings of the 2014 IEEE Students Technology Symposium (IEEE TechSym 2014) held at Indian Institute of Technology Kharagpur, Kharagpur, 2014,pp 170-175.
8. Pankaj Shivhare, G. Uma, M. Umapathy, “A Micro Gripper for High Force Application Using In-Plane Chevron Electrothermal Actuator”, Proceedings of International Conference on Microelectronics, Circuits & Systems (Micro-2014), July 11-13, 2014.
9. P. Pandiyan, G. Uma, M. Umapathy, “Design and simulation of 3-bit MEMS electro thermal compliant actuator based analog to digital converter”, Proceedings of 7th International Conference on smart materials, structures and systems(ISSS-2014), Bangalore, July 8-11, 2014.