Faculty

Dr. Pandiyarasan Veluswamy

DST-Inspire Faculty

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Google Scholar: https://scholar.google.co.in/citations?user=XhUq7vAAAAAJ&hl=en

Education

National University Corporation Shizuoka University, Japan

Doctorate (Ph.D) in Engineering

Anna University

Master of Technology (M.Tech) in Nanoscience and Technology

Anna University

Bachelor of Engineering (B.E) in Electronics and Communication

Specialization

- Wearable Electronic Devices

Research Interests

- Self-powered (Thermoelectric, Solar, Nanogenerator) wearable devices
- Textile nanotechnology and smart fibers of energy harvesting
- Self-power generation for physiological sensors
- Develop wearable devices with enhanced multifunctional performance

Honours + Awards + Recognitions

- March 2019 - Present; Visiting Professor - National University of Science & Technology "MISiS", Moscow, Russia

- August - September 2019; Expert Lecture series, Wearable electronics, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai, India
- August 2019; Guest Lecture, (Emerging thermoelectric technologies for wearable electronic devices) - Vel Tech Multi Tech Dr. Rangarajan Dr. Sakunthala Engineering College, Chennai, India
- July 2019; Invited Talk, (Self-powered wearable electronic devices) Sathyabama Institute of Science and Technology, Chennai, India
- June 2019; Invited Talk, Short Term Training Programme (STTP) for Microgrid and Renewable Energy Technology, IIITDM [Materials for Renewable Energy Technology]
- May 2019; Recognized Reviewer award - IOP Journal of Physics: Energy; International Journal of Numerical Modelling: Electronic Networks, Devices, and Fields & Invited Talk (Electronics Technology for Electrical Vehicles & Renewable Technology for Electrical Vehicles) IET-FDP, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai, India.
- April 2019; Invited Talk (Nanostructured oxide semiconductors grew on fabric for the wearable thermoelectric power generator) - National University of Science & Technology "MISiS", Moscow, Russia
- January 2019; Recognized Reviewer award - Journal of Hazardous Materials
- January 2019; Invited Speaker - 10th International Conference on Advancements in Polymeric Materials (APM-2019), CIPET, Chennai, India
- December 2018; Leading Scientist awarded - National University of Science & Technology "MISiS", Moscow, Russia
- October 2018; Visiting Professor - University of Malaya, Malaysia
- May 2018; Outstanding Reviewer - Journal of Ceramics International
- April 2018; Recognized Reviewer award - Journal of Ceramics International; Outstanding Reviewer - Journal of Environmental Chemical Engineering & Journal of Carbohydrates Polymers
- March 2018; Recognized Reviewer award - Journal of Environmental Chemical Engineering
- February 2018; INSPIRE Faculty Award (Young achievers & Independent research long term) - Government of India (Department of Science and Technology) & Invited Talk (Nanotechnology Towards End Products) - KCG College of Technology, India
- January 2018; Recognized Reviewer award - Journal of Carbohydrate Polymers
- November 2017; Outstanding Reviewer - International Journal of Hydrogen Energy
- October 2017; BK21+ Fellowship (Privileged government position) - KAIST, South Korea
- Recognized Reviewer award - Journal of Applied Surface Science & International Journal of Hydrogen Energy
- September 2017; Dean Award (Outstanding work in scholarly research; Ph. D. Thesis) - National University Corporation Shizuoka University, Japan

- Best Young Researcher - 16th International conference on Global Research and Education, Inter-Academia 2017, Alexandru Ioan Cuza University of Iasi, Romania
- June 2017 ; Visiting Researcher - University of Liege, Liege, Belgium & AGH University of Science and Technology, Krakow, Poland
- May 2017; Outstanding Reviewer - Journal of Alloys and Compounds
- October 2014 - September 2017; JASSO (Japan Student Services Organization) - Monbukagakusho Honors Scholarship
- August 2016; Recognized Reviewer award - Journal of Alloys and Compounds
- September 2015; Best Young Researcher - 14th International conference on Global Research and Education, Inter-Academia 2015
- Best Researcher award (2013 to 2014) - Teachers Day 2015, SRM University
- March 2014; Best poster presentation - International Conference on Advances in Civil Engineering and Chemistry of Innovative Materials, ACECIM 14
- July 2014; Summer Faculty Research Fellow Programme 2014 - Quality Improvement & Continuing Education Programme (QIP & CEP), IIT Delhi
- September 2013; Best Researcher award (2012 to 2013) - Teachers Day 2013, SRM University

Work Experience

Teaching

- DST INSPIRE Faculty, IIITDM Kancheepuram (Since Oct 2018)
- Assistant Professor, SRM Institute of Science & Technology (Dec 2011 - Sep 2014)
- Scientific Officier, SRM Institute of Science & Technology (Aug 2011 - Dec 2011)

Research

- Post Doctoral Researcher at Korean Advanced Institute of Science and Technology (KAIST), Daejeon, Republic of Korea (Oct 2017 - Oct 2018)
- Research Assistant at National University Corporation Shizuoka University (SU), Hamamatsu, Japan (Oct 2014 - Sep 2017)

Professional Membership

- Institute of Electrical and Electronics Engineers (IEEE)
- Institute of Electronics, Information and Communication Engineers (IEICE)
- Magnetic Society of India (MSI)
- Electron Microscopy Society of India (EMSI)

Professional Service

- Reviewer, IOP Journal of Physics: Energy
- Reviewer, International Journal of Numerical Modelling: Electronic Networks, Devices, and Fields
- Reviewer, Journal of Hazardous Materials
- Reviewer, Journal of Ceramics International
- Reviewer, Journal of Environmental Chemical Engineering
- Reviewer, Journal of Carbohydrates Polymers

- Reviewer, International Journal of Hydrogen Energy
- Reviewer, Journal of Applied Surface Science
- Reviewer, Journal of Alloys and Compounds

Teaching

- Master Degree - Nanoscale Magnetic Materials & Devices, Nanomaterials Synthesis and Characterization Techniques, Instrumentation in Nanoscience & Nanotechnology, Nanoscience and Nanotechnology, Semiconductor Devices and Linear Integrated Circuits, Microcontrollers.
- Bachelor Degree - Characterization Techniques, Polymer and Nanocomposites, Materials Science, Micro/Nanodevice and sensors.

Books

- Recent progress in nanostructured zinc oxide grown on fabric for wearable thermoelectric power generator with UV shielding, Wearable Technologies (ISBN 978-953-51-6081-6), Intech Publication, UK (2018) 139 -160; DOI: 10.5772/intechopen.76672.

Journal Publications

- # Corresponding Author; IF – Impact Factor
- 1. Pandiyarasan Veluswamy#, Saravanan Subramanian, Muhmood ul Hassan, Cafer T. Yavuz, Ho Jin Ryu, and Byung Jin Cho; Design of Low-cost, Scalable and High-Performance TiS2 Thermoelectric materials via wet-ball-milling method, Applied Surface Science (2019) Revision. IF – 5.155
- 2. Pandiyarasan Veluswamy#, Suhasini Sathiyamoorthy, P. Thanga Gomathi, K. Jayabal, R. Kumar, Denis Kuznetsov and Hiroya Ikeda; A novel investigation on ZnO nanostructures on carbon fabric for harvesting thermopower on textile, Applied Surface Science (2019) Accepted. IF – 5.155
- 3. Sandeep K Lakhera, Hafeez Yusuf Hafeez, R Venkataramana, Pandiyarasan Veluswamy, Heechul Choi, Bernaurdshaw Neppolian, Design of a highly efficient ternary AgI/rGO/BiVO4 nanocomposite and its direct solar light induced photocatalytic activity, Journal of Applied Surface Science 487 (2019) 1289 – 1300. IF – 5.155
- 4. Hyeongdo Choi, Yong Jun Kim, Jinseob Song, Choong Sun Kim, Gyu Soup Lee, Seongho Kim, Jiwon Park, Se Hwan Yim, Sang Hyun Park, Hye Rim Hwang, Min-Hee Hong, Pandiyarasan Veluswamy, Byung Jin Cho, UV-Curable Silver Electrode for Screen-Printed Thermoelectric Generator, Advanced Functional Materials, 1901505 (2019). IF – 15.621
- 5. M Kaushik, R Niranjan, Ramar Thangam, Balaraman Madhan, V Pandiyarasan, C Ramachandran, Deog-Hwan Oh, G Devanand Venkatasubbu, Investigations on the antimicrobial activity and wound healing potential of ZnO nanoparticles, Journal of Applied Surface Science 479 (2019) 1169 – 1177. IF – 5.155
- 6. K Jeyasubramanian, RV William, P Thiruramanathan, GS Hikku, M Vimal Kumar, B Ashima, Pandiyarasan Veluswamy, Hiroya Ikeda, Dielectric and Magnetic Properties of Nanoporous Nickel Doped Zinc Oxide for Spintronic

Applications, Journal of Magnetism and Magnetic Materials 485 (2019) 27 – 35. IF – 2.683

- 7. J Prakash, Manigandan Venkatesan, G Bharath, Shoaib Anwer, V Pandiyarasan, D Prema, KS Venkataprasanna, G Devanand Venkatasubbu, Investigations on the in-vivo toxicity analysis of reduced graphene oxide/TiO2 nanocomposite in zebrafish embryo and larvae (Danio rerio), Journal of Applied Surface Science 481 (2019) 1360 – 1369. IF – 5.155
- 8. V. S. Prabhin, K. Jeyasubramanian, I. Jeyaseeli Rashmi, G. S. Hikku, Pandiyarasan Veluswamy, & Byung Jin Cho, Investigation of Electrochemical capacitance of 18k nanoporous current collector incorporated MnO2, Journal of Materials Chemistry and Physics 220 (2018) 128 – 136. IF – 2.781
- 9. Hiroya Ikeda, Faizan Khan, Veluswamy Pandiyarasan, Shota Sakamoto, Mani Navaneethan, Masaru Shimomura, Kenji Murakami, Yasuhiro Hayakawa, Thermoelectric characteristics of nanocrystalline ZnO grown on fabrics for wearable power generator, IOP Conference Series: Journal of Physics: Conference Series 1052 (2018) 012017 (1-4). IF – 0.3
- 10. G. S. Hikku, K. Jeyasubramanian, J. Jacobjose, P. Thiruramanathan, Pandiyarasan Veluswamy, and Hiroya Ikeda, Alkyd resin based hydrophilic self-cleaning surface with self-refreshing behavior as single step durable coating, Journal of Colloid and Interface Science 531 (2018) 628 – 641. IF – 6.361
- 11. Pandiyarasan Veluswamy#, Suhasini Sathiyamoorthy, P. Santhoshkumar, Gopalu Karunakaran, Chang Woo Lee, Denis Kuznetsov, Jeyasubramanian Kadarkaraithangam, Hiroya Ikeda, Sono-synthesis approach of reduced graphene oxide for ammonia vapour detection at room temperature, Journal of Ultrasonics Sonochemistry 48 (2018) 555 – 566. IF – 7.279
- 12. L. Saravanan, M. Manivel Raja, D. Prabhu, V. Pandiyarasan, H. Ikeda, H. A. Therese, Impact of MgO thickness on the perpendicular magnetic anisotropy of Mo/Co2FeAl/MgO/Mo multilayers with improved annealing stability, Journal of Materials Research Bulletin 107 (2018) 118 – 124. IF – 3.355
- 13. Georgeena Mathew Parama Dey, Rituparna Das, Sreemayee Dutta Chowdhury, Merina Paul Das, Pandiyarasan Veluswamy, Bernaurdshaw Neppolian, Jayabrata Das, Direct Electrochemical reduction of hematite decorated graphene oxide (α-Fe2O3@erGO) nanocomposite for selective detection of Parkinson's disease biomarker, Journal of Biosensors & Bioelectronics 115 (2018) 53 – 60. IF – 9.518
- 14. Sandeep Kumar Lakhera, Hafeez Yusuf Hafeez, Pandiyarasan Veluswamy, V. Ganesh, Anish Khan, Hiroya Ikeda, Bernaurdshaw Neppolian, Enhanced Photocatalytic Degradation and Hydrogen Production activity of In Situ grown TiO2 coupled NiTiO3 Nanocomposites, Journal of Applied Surface Science 449 (2018) 790 – 798. IF – 5.155
- 15. Faizan Khan, Veluswamy Pandiyarasan, Shota Sakamoto, Mani Navaneethan, Masaru Shimomura, Kenji Murakami, Yasuhiro Hayakawa, and Hiroya Ikeda, Seebeck Coefficient of flexible carbon fabric for wearable thermoelectric device, IEICE Transaction on Electronics E101-C (2018) 343 – 346. IF – 0.516

- 16. Suhasini sathiyamoorthy, Greeshma Girijakumari, Prashanth Kannan, Kathirvel Venugopal, Saranya Thiruvottriyur, Pandiyarasan Veluswamy#, Karolien De Wael, Hiroya Ikeda, Tailoring the functional properties of polyurethane foam with dispersions of carbon nanofiber for power generator applications, Journal of Applied Surface Science 449 (2018) 507 – 513. IF – 5.155
- 17. L. Saravanan, M. Manivel Raja, D. Prabhu, V. Pandiyarasan, H. Ikeda, H. A. Therese, Perpendicular magnetid anisotropy in Mo/Co2FeAl0.5Si0.5/MgO/Mo multilayers with optimal Mo buffer layer thickness, Journal of Magnetism and Magnetic Materials 454 (2018) 267 – 273. IF – 2.683
- 18. Merina Paul Das, Jeyanthi Rebecca Livingstone, Pandiyarasan Veluswamy, Jayabrata Das, Exploration of Wedelia Chinesis leaf-assisted silver nanoparticles for antioxidant, antibacterial and in vitro cytotoxic applications, Journal of Food and Drug Analysis 26 (2017) 917 - 925. IF – 4.176
- 19. Mohana Priya Subramaniam, A. Geetha, K. Ramamurthi, Pandiyarasan Veluswamy, Ikeda Hiroya, Effect of pH and annealing temperature on the properties of tin oxide nanoparticles prepared by sol-gel, Journal of Materials Science: Materials in Electronics 29 (2017) 658 - 666. IF –3.442
- 20. Gokulraja Thangaiyanadar Suyambulingam, Kadarkaraithangam Jeyasubramanian, Vimal Kumar Mariappan, Pandiyarasan Veluswamy, Hiroya Ikeda, and Karthikeyan Krishnamoorthy, Excellent floating and load bearing properties of superhydrophobic ZnO/Copper Stearate nanocoating, Chemical Engineering Journal 320 (2017) 468 - 477. IF – 8.355
- 21. V. Pandiyarasan#, S. Suhasini, J. Archana, M. Navaneethan, M. Abhijit, Y. Hayakawa, H. Ikeda, Fabrication of hierarchical ZnO nanostructures on cotton fabric for wearable device applications, Journal of Applied Surface Science 418 (2017) 352 – 361. IF – 5.155
- 22. Pandiyarasan Veluswamy#, Suhasini Sathiyamoothy, Faizan Khan, Aranya Ghosh, Majumdar Abhijit, Yasuhiro Hayakawa, Hiroya Ikeda, Incorporation of ZnO and their composite nanostructured material into a cotton fabric platform for wearable device applications, Journal of Carbohydrate Polymers 157 (2017) 1801-1808. IF – 6.044
- 23. V. Pandiyarasan, J. Archana, A. Pavitra, V. Ashwin, M. Navaneethan, Y. Hayakawa, H. Ikeda, Hydrothermal growth of reduced graphene oxide on cotton fabric for enhanced ultraviolet protection applications, Journal of Materials letters 188 (2017) 123-126. IF – 3.019
- 24. Pandiyarasan Veluswamy#, Suhasini Sathiyamoorthy, Kalari Hanuman Chowdary, Omprakash Muthusamy, Karthikeyan Krishnamoorthy, Tsunehiro Takeuchi, Hiroya Ikeda, Morphology dependent thermal conductivity of ZnO nanostructures prepared via a green approach, Journal of Alloys and Compounds 695 (2017) 888-894. IF – 4.175
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Conference Publications

- Papers in Conference Proceedings:

- Incorporation of polyaniline on graphene- related materials/ cotton-fabric by interfacial polymerization pathway for wearable device, Pandiyarasan Veluswamy, Navaneethan M, Hayakawa Y, Hiroya Ikeda, 18th Takayanagi Memorial Symposium, 15th & 16th November 2016 at Shizuoka, Japan [Poster Presentation].
- Evaluation of wearable thermoelectric power generators by Sb-/ Ag- doped ZnO nanocomposites and their properties, Veluswamy Pandiyarasan, Jayaram Archana, Mani Navaneethan, Salleh Faiz, Yasuhiro Hayakawa, Hiroya Ikeda, Technical committee on Electron Device (ED), 03rd – 04th March, 2016 at Sapporo, Japan [Oral Presentation].
- Preparation and thermoelectric characterization of zinc oxide nanoflakes on In-Situ fabrication of cotton fabric, Pandiyarasan Veluswamy, Suhasini Sathiyamoorthy, Faiz Salleh, Yuhei Suzuki, and Hiroya Ikeda, 23rd National Heat and Mass Transfer Conference and 1st International ISHMT ―ASTFE Heat and Mass Transfer Conference, 17th ― 20th December 2015 at Kerala, India [Oral Presentation].
- Ag doped ZnO nanocomposites with enhanced Seebeck effect, V. Pandiyarasan, F. Salleh, and H. Ikeda, 17th Takayanagi Memorial Symposium, 11th & 12th November 2015 at Shizuoka, Japan [Poster Presentation].
- Optical and Morphological Studies of cavity shaped ZnS:Mn Surface Modified with L-Lyseine, R. Annie Sujatha, C. Muthamizhchelvan, V. Pandiyarasan, International Conference on Advances in Manufacturing and Materials Engineering (ICAMME 2014), 27th – 29th March 2014 at Karnataka, India [Oral Presentation].
- Papers Presented in Conference but not Published:
- A Wearable Thermoelectric Generator, Pandiyarasan Veluswamy and Byung Jin Cho, National Conference on Emerging Materials on Sustiable Future (NCEMSF 18), 09th & 10th February 2018 at PSG College of Technology, Coimbatore, India [Invited Talk].
- High-performance multifunctional nanostructured ZnO and their composite fabric: Towards wearable device applications, Pandiyarasan Veluswamy, Faizan Khan, Shota Sakamoto, Aranya Ghosh, Manjumdar Abhijit, Masaru Shimomira, Kenji Murakami, Yusuhiro Hayakawa, and Hiroya Ikeda, 15th International Conference on Advanced Materials (IUMRS-ICAM), 27th August – 01st September 2017 at Kyoto, Japan [Poster