

**Name:** Dr. M. Nirmala Devi

**Designation:** Professor

**Affiliation:** Amrita School of Engineering, Amrita Vishwa Vidyapeetham, Coimbatore.

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#### UG/PG Publications

1. FPGA Implementation of Genetically Evolved Artificial Neural Networks For Effective Resource Utilization
2. A Power Aware Reordering Based Compression Scheme for Test Volume Reduction
3. Power Reduction and Defect Coverage Improvement in At-Speed Testing
4. VLSI Realization of fault tolerant Artificial Neural Networks
5. FPGA Implementation of Feedforward Neural Network with Layer Multiplexing
6. Improved Particle Swarm Optimization
7. Security Enhanced Testing Using Scrambling and Test Compression
8. Modified PSO with Adaptive Local Search
9. Test Compression for Low-power Testing
10. Small-signal Modelling of GaN HEMT based Transistor using PSO
11. Multi-objective PSO
12. Design of RF CMOS LNA for Millimeter wave Technology

#### Publication Type: Journal Article

Year of Publication	Title
2018	Ashok Kumar Mohan, Dr. Nirmala Devi M., Dr. M. Sethumadhavan, and Santhya R, “A Selective Generation of Hybrid Random Numbers via Android Smart Phones”, International Journal of Pure and Applied Mathematics, vol. 118, no. 8, pp. 311-317, 2018.
2017	R. S. Ranjani and Dr. Nirmala Devi M., “Golden-chip free power metric based hardware trojan detection and diagnosis”, Far East Journal of Electronics and Communications, vol. 17, pp. 517-530, 2017.
2015	A. Indoria, Varrun, V., Reddy, M. Krishna, Sathyasai, T., Anand, B., and Dr. Nirmala Devi M., “State Variable Filter Design Using Improvised Particle Swarm Optimization Algorithm”, Advances in Intelligent Computing and Systems (AISC) series, vol. 325, pp. 71–78, 2015.
2015	Dr. Lavanya R., Nagarajan, N., and Dr. Nirmala Devi M., “Computer-

Publication Type: Journal Article

Year of Publication	Title
	aided Diagnosis of Breast Cancer by Hybrid Fusion of Ultrasound and Mammogram Features”, Advances in Intelligent Systems and Computing, vol. 325, pp. 403–409, 2015.
2015	Dr. Ramesh Bhakthavatchalu and Dr. Nirmala Devi M., “Crypto Keys Based Secure Access Control for JTAG and Logic BIST Architecture”, International Journal of Engineering and Technology, vol. 7, no. 3, pp. 973-984, 2015.
2015	Dr. Ramesh Bhakthavatchalu, Kannan, S. K., and Dr. Nirmala Devi M., “Verilog design of programmable JTAG controller for digital VLSI IC's”, Indian Journal of Science and Technology, vol. 8, 2015.
2015	Dr. Ramesh Bhakthavatchalu and Dr. Nirmala Devi M., “Deterministic seed selection and pattern reduction in logic BIST”, International Journal of Applied Engineering Research, vol. 10, pp. 7537-7551, 2015.
2014	Karthigha Balamurugan, Dr. Nirmala Devi M., and Jayakumar, M., “Design of V-band low noise amplifier using current reuse topologies”, International Journal of Applied Engineering Research, vol. 9, pp. 27319-27330, 2014.
2012	P. R. Sruthi and Dr. Nirmala Devi M., “A modified scheme for simultaneous reduction of test data volume and testing power”, Sixteenth International Symposium on VLSI Design and Test (VDATE 2012, vol. 7373 LNCS, pp. 198-208, 2012.
2010	Dr. Nirmala Devi M. and Arumugam, S., “VLSI implementation of artificial neural networks - A survey”, International Journal of Modelling and Simulation, vol. 30, pp. 148-154, 2010.
2009	Dr. Nirmala Devi M., N Mohankumar, and Arumugam, S., “Modeling and analysis of neuro–genetic hybrid system on FPGA”, Elektronika ir Elektrotechnika (International Journal of Electrical and Electronics Engineering (JEEE)), vol. 96, pp. 69-74, 2009.

Publication Type: Conference Proceedings

Year of Publication	Title

**Publication Type: Journal Article**

<b>Year of Publication</b>	<b>Title</b>
2014	M. Vijitha and Dr. Nirmala Devi M., “Test data Volume Reduction Using Compressed Scan Mode Architecture”, International Conference on Communication and Computing, ICC 2014. Elsevier, Bangalore, India, 2014.
2014	P. Sankar and Dr. Nirmala Devi M., “Particle Swarm Optimization with Different Modifications”, Third International Conference on Recent Trends in Engineering and Technology. Elsevier Science and Technology, Chanwad, pp. 551-556, 2014.
2014	Dr. Ramesh Bhakthavatchalu, Dr. Nirmala Devi M., and Krishnan, S., “Reconfigurable Logic Built in Self-Test technique for SoC Applications”, International Conference on Communication and Computing, ICC 2014, vol. 3. Elsevier, Bangalore, India, pp. 16-23, 2014.
2014	J. Sirisha, C., N. Vaishnavi, P., N. K., S., S. Vidhya, G., Y., Karthigha Balamurugan, Dr. Nirmala Devi M., and M., J., “Study and Design of CMOS Based Millimeter Wave LNA Including Noise Models”, International Conference on Communication and Computing, ICC 2014. Elsevier, Bangalore, India, pp. 1-8, 2014.
2014	B. S. Mahalakshmi, Manikantan, S., Bhavana, P., Prem, A. M., SaiEknaath, R. S. S., and Dr. Nirmala Devi M., “Small signal modelling of GaN HEMT at 70GHz”, International Conference on Signal Processing and Integrated Networks (SPIN), 2014 . IEEE, Noida, Delhi-NCR, India, pp. 739 - 743, 2014.
2013	G. Srujana, Radhika, S., Sonu, S., T. Sai, V., Tharun, V., and Dr. Nirmala Devi M., “Improved Particle Swarm Optimisation with Modified Velocity Calculation”, IEEE Workshop on Computational Intelligence: Theories, Applications and Future Directions. Institute of Technology (IIT), Kanpur, pp. 108-113, 2013.
2011	Na Haridas and Dr. Nirmala Devi M., “Efficient linear feedback shift register design for pseudo exhaustive test generation in BIST”, ICECT 2011 - 2011 3rd International Conference on Electronics Computer Technology, vol. 1. Kanyakumari, pp. 350-354, 2011.
2008	Va Saichand, Dr. Nirmala Devi M., Arumugam, Sc, and N Mohankumar, “FPGA Realization of Activation Function for Artificial Neural Networks”, IEEE 8th International Conference on Intelligent Systems

**Publication Type: Journal Article**

<b>Year of Publication</b>	<b>Title</b>
	Design and Applications, ISDA 2008, vol. 3. IEEE, Taiwan, pp. 159-164, 2008.

**Publication Type: Conference Paper**

<b>Year of Publication</b>	<b>Title</b>
2014	S. Sarathkrishna, Karthigha Balamurugan, Dr. Nirmala Devi M., and Dr. Jayakumar M., “Design and Analysis of GaN HEMT based LNA with CPW matching”, in 2014 Eleventh International Conference on Wireless and Optical Communications Networks (WOCN), , 2014.
2014	B. Anand, Aakash, I., , Varrun, V., Reddy, M. K., Sathyasai, T., and Dr. Nirmala Devi M., “Improvisation of particle swarm optimization algorithm”, in 2014 International Conference on Signal Processing and Integrated Networks, SPIN 2014, Noida, 2014, pp. 20-24.
2014	Dr. Ramesh Bhakthavatchalu, Krishnan, S., Vineeth, V., and Dr. Nirmala Devi M., “Deterministic seed selection and pattern reduction in logic BIST”, in 18th International Symposium on VLSI Design and Test, VDAT 2014, Coimbatore, 2014.
2012	P. R. Sruthi and Dr. Nirmala Devi M., “Modified AVR Code for Test Data Compression”, in 7th International Workshop on Unique Chips and Systems (UCAS-7) in conjunction with 18th International Symposium on High Performance Computer Architecture, IEEE Computer Society, New Orleans, Louisiana, USA, 2012.
2011	A. Scaria, D. Nath, B., Dr. Nirmala Devi M., and N Mohankumar, “Hardware implementation of svd based colour image watermarking in wavelet domain”, in Proceedings of 2011 International Conference on Process Automation, Control and Computing, PACC 2011, Coimbatore, 2011.

**Reviewer and Program Committee Member**

1. Reviewer - Springer Journal of the Institution of Engineers (India): Series B
2. Reviewer - Inderscience International Journal of Information and Communication Technology
3. Reviewer for the International Conference- VLSI- SATA- 2015, 2016.

4. Reviewer & PC member- International Symposium- VDAT- 2015
5. Reviewer for the International Journal- Advances in Electrical and Electronic Engineering, VSB- Technical University of Ostrava, Czech Republic, 2014.
6. Program committee member & Reviewer of "International Conference on Education (EDU 2014)" to be held in Bangalore, INDIA, 2014.
7. Reviewer for the Journal of The Institution of Engineers (India): Series B, India in 2014.
8. Reviewer for the International Conference on Embedded Systems ICES 2014, July 3- 5, 2014, Dept. of EEE, Amrita School of Engineering, Amrita Vishwa Vidyapeetham, Coimbatore, 2014.
9. Program committee member & Reviewer of "The Third International conference on Parallel, Distributed Computing and Applications (IPDCA - 2014)" to be held in Chennai, India.
10. Member of the editorial board- Chrome Publishing Group, Noida, NCR Delhi, 2014.

#### Funded Projects

**Title of the Research proposal-** Hardware Trojan Detection and Consistency based Diagnosis  
**Investigators-** Dr. Nirmala Devi M., Dr. Jayakumar M., Mohankumar N., Dr. Sethumadhavan M.

**Funding Agency-** DRDO, New Delhi

**Period-** Two Years