

## Curriculum Vitae



Name : **Dr. Devi Dass**  
Designation with Institute : Assistant Professor & Head  
Department of Electronics,  
Govt. Gandhi Memorial Science, Jammu-180001,  
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Home Address : R.O. Bahadur Khan, P.O. Miran Sahib (Langotian),  
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### **EDUCATIONAL QUALIFICATIONS**

S.No.	Exam. Passed	Univ./Board	Year	%age of Marks
1.	10 <sup>th</sup>	J&K Board of School Education	2001	57.4%
2.	12 <sup>th</sup>	J&K Board of School Education	2004	67.5%
2.	B.Sc.	University of Jammu	2007	68.6%
3.	M. Sc. Electronics	University of Jammu	2009	71.3%
4.	M. Phil. Electronics	University of Jammu	2012	“A” Grade
5.	Ph. D. Electronics	University of Jammu	Feb. 2016	Awarded

## **TEACHING AND RESEARCH EXPERIENCE**

S.No.	Name of the College	Session	No. of days
1.	<i>Govt. Degree College Baderwah</i>	2016-17	349
2.	<i>Govt. GM Science College Jammu</i>	2017-18	325
3.	<i>Govt. Degree College Baderwah</i>	2018-19	310
4.	<i>Govt. Degree College Baderwah</i>	2019 to 14 <sup>th</sup> Dec	137 days
5.	Govt. College for Women, Gandhi Nagar	16 <sup>th</sup> Dec. to 12 Feb. 2019	
6.	<i>Govt. Degree College Udhampur</i>	13 <sup>th</sup> Feb. 2020 to 16 <sup>th</sup> Feb. 2024	
7.	Govt. G.M. Sci. College, Jammu	16 <sup>th</sup> Feb 2024	

### **Fellowships and Awards**

1. Rajiv Gandhi National Fellowship (Both JRF & SRF) w.e.f. 21/01/2010 to 20/01/2015
2. DST Student Travel Award for attending 3<sup>rd</sup> Nanotoday Conference, Singapore w. e. f. December 8-11, 2013.
3. Boarding/Lodging assistance from university of Jammu for attending 3<sup>rd</sup> Nanotoday Conference, Singapore.

### **Reviewer of International Journals**

1. International Journal of Engineering
2. Journal of Physics and Chemistry of Solids (Elsevier)
3. Journal of Vacuum Science and Technology A (American Vacuum Society)
4. Semiconductor Science and Technology (IOP Publishing)
5. Engineering Research Express (IOP publishing)
6. Physica Scripta (IOP publishing)
7. Journal of Electronic Materials (Springer)

### **Training Courses/Workshops attended (1 week and above)**

1. One Month Industrial Training on “Audio and video Signal Processing” w.e.f 5<sup>th</sup> May to 5<sup>th</sup> June 2009.
2. “Nano Materials With Particular Reference to Energy Studies” workshop organized by Department of Physics, Banaras Hindu University, Varanasi, w.e.f. 11-17 March, 2014.
3. “27<sup>th</sup> Hands-on Training on Photovoltaics and Micro and Nano Characterization Techniques” held at Indian Institute of Science, Bangalore, w. e. f. 21-29 May 2015.

4. “4-week online Induction/Orientation programme” held at Ramanujan College, University of Delhi w.e.f. 15 march-14 April 2021.
5. “Summer Faculty Research Fellow Programme-2021 online” held at Indian Institute of Technology Delhi w.e.f. 15-06-2021 to 29-07-2021.

## List of Publications

### Full Papers in International Journals

1. **Devi Dass**, Rakesh Prasher, and Rakesh Vaid, “Analytical Study of Unit Cell and Molecular Structures of Single Walled Carbon Nanotubes”, **International Journal of Computational Engineering Research (IJCER)**, vol. 2, Issue. 5, pp. 1447-1457, September 2012.  
ISSN Online: 2250-3005, peer-reviewed and indexing.
2. Rakesh Prasher, **Devi Dass**, and Rakesh Vaid, “Study of Novel Channel Materials Using III-V Compounds With Various Gate Dielectrics”, **International Journal on Organic Electronics (IJOE)**, vol. 2, no.1, pp. 11-18, January 2013.  
ISSN : 2278 - 1293 (Online); 2319 - 4359 (Print), peer-reviewed and indexing.
3. Rakesh Prasher, **Devi Dass**, and Rakesh Vaid, “Performance of a Double Gate Nanoscale MOSFET (DG-MOSFET) Based on Novel Channel Materials”, **Journal of Nano and Electronic Physics (JNEP)**, vol. 5, no. 1, pp. 01017-1 - 01017-5, March 2013.  
ISSN: 2077-6772 (Print); 2306-4277 (Online), peer-reviewed and indexing,  
SCOPUS LINK: <https://www.scopus.com/sourceid/21100210917>
4. **Devi Dass**, Rakesh Prasher, and Rakesh Vaid, “Single Walled CNT Chirality dependence for Electrical Device Applications”, **The African Review of Physics**, vol. 8, pp. 25-31, April 2013.  
ISSN: 2223-6589, peer-reviewed and indexing.  
SCOPUS LINK: <https://www.scopus.com/sourceid/21100211750>

5. **Devi Dass**, Rakesh Prasher, and Rakesh Vaid, “Impact of Scaling Gate Insulator Thickness on the Performance of Carbon Nanotube Field Effect Transistors (CNTFETs)”, **Journal of Nano and Electronic Physics (JNEP)**, vol. 5, No. 2, pp. 02014-1 - 02014-6, May 2013.  
ISSN: 2077-6772 (Print); 2306-4277 (Online), peer-reviewed and indexing,  
SCOPUS LINK: <https://www.scopus.com/sourceid/21100210917>
6. **Devi Dass**, and Rakesh Vaid, “Impact of Varying the Carbon Nanotube (CNT) diameters on the Performance of Carbon Nanotube Field Effect Transistor (CNTFET)”, **Invertis Journal of Science and Technology**, vol. 6, No. 4, pp. 249-253, October - December 2013. p-ISSN:0973-8940, peer-reviewed and indexing.
7. Rakesh Prasher, **Devi Dass**, and Rakesh Vaid, “Comparative Study of InSb and InAs based Nanowire MOSFET with Si based Nanowire MOSFET for 1nm Diameter”, **Invertis Journal of Science and Technology**, vol. 8, No. 1, pp. 40-47, January - March 2015. p-ISSN:0973-8940, peer-reviewed and indexing.
8. Rakesh Prasher, **Devi Dass**, and Rakesh Vaid, “Improved Structural and Electric Characteristics of Al/ALD-HfO<sub>2</sub>/Ge MOS Capacitor by Germanium Dioxide and Germanium Oxynitride as Interfacial Layer”, **ECS Transactions**, vol. 66, No. 4, pp. 315-321, 2015.
9. **Devi Dass**, Rakesh Prasher, and Rakesh Vaid, “Simulation Study of Coaxially Gated Ballistic CNTFET”, **International Journal of Scientific and Technical Advancements**, vol. 1, Issue 3, pp. 11-15, 2015.  
ISSN: 2454-1532, peer-reviewed and indexing.
10. **Devi Dass**, and Rakesh Vaid, “Impact of SWCNT Band Gaps on the Performance of a Ballistic Carbon Nanotube Field Effect Transistors (CNTFETs)”, **Journal of Nano and Electronic Physics (JNEP)**, vol. 9, No. 4, pp. 04017-1 - 04007-5, July 2017.  
ISSN: 2077-6772 (Print); 2306-4277 (Online), peer-reviewed and indexing,  
DOI: [https://doi.org/10.21272/jnep.9\(4\).04007](https://doi.org/10.21272/jnep.9(4).04007)  
SCOPUS LINK: <https://www.scopus.com/sourceid/21100210917>

11. **Devi Dass** and Rakesh Vaid, “Chirality dependence of electronic band structure and density of states in single-walled carbon nanotubes”, **The African Review of Physics**, vol. 12, pp. 104-113, 2017.  
ISSN: 2223-6589, peer-reviewed and indexing  
SCOPUS LINK: <https://www.scopus.com/sourceid/21100211750>
12. **Devi Dass**, “Structural analysis, electronic properties, and band gaps of a graphene nanoribbon: A new 2D materials”, **Superlattices and Microstructures**, vol. 115, pp.88-107, March 2018. ISSN: 0749-6036, peer-reviewed and indexing. SCI journal (Elsevier) 2023 Impact factor: 3.1.  
DOI: <https://doi.org/10.1016/j.spmi.2018.01.001> ,  
SCOPUS LINK: <https://www.scopus.com/sourceid/21959>
13. **Devi Dass**, “Structural parameters, electronic properties, and band gaps of a single walled carbon nanotube: A  $p_z$  orbital tight binding study”, **Superlattices and Microstructures**, vol. 120, pp.108-126, August 2018.  
ISSN: 0749-6036, peer-reviewed and indexing. SCI journal (Elsevier) 2023 Impact factor: 3.1.  
DOI: <https://doi.org/10.1016/j.spmi.2018.05.023>,  
SCOPUS LINK: <https://www.scopus.com/sourceid/21959>
14. **Devi Dass**, “Structural Analysis and Electronic Properties of Unpassivated and H-Passivated Germanium Nanowires for Different Growth Directions”, **Journal of Electronic Materials**, vol. 48, pp. 4679-4687, July 2019.  
ISSN: 0361-5235, peer-reviewed and indexing. SCI journal (Springer) 2023 Impact factor: 2.2.  
DOI: <https://doi.org/10.1007/s11664-019-07258-8> ,  
SCOPUS LINK: <https://www.scopus.com/sourceid/26620>
15. **Devi Dass**, “Effects of surface passivation by hydrogen on the structural and electronic properties of a germanium nanowire: A  $sp^3$  tight binding study”, **Applied Surface Science**, vol. 488, pp. 404-417, 15 September 2019.  
ISSN: 0169-4332, peer-reviewed and indexing. SCI journal (Elsevier) 2023 Impact factor: 6.3. DOI: <https://doi.org/10.1016/j.apsusc.2019.05.230> ,  
SCOPUS LINK: <https://www.scopus.com/sourceid/28983>

16. **Devi Dass**, “Structural and electronic properties of a  $C_N$  fullerene with  $N = 20, 60, 80, 180,$  and  $240$ ”, **Journal of Molecular Modeling**, vol. 26, pp. 9 (6 pages), January 2020. ISSN: 0948-5023, peer-reviewed and indexing. SCI journal (Springer) 2023 Impact factor: 2.1.  
DOI: <https://doi.org/10.1007/s00894-019-4207-0>  
SCOPUS LINK: <https://www.scopus.com/sourceid/57844>
17. **Devi Dass**, “Modifying the band gap of an armchair graphene nanoribbon by edge bond relaxation”, **Diamond and Related Materials**, vol. 110, 108131 (11 pages), December 2020. ISSN: 0925-9635, peer-reviewed and indexing. SCI journal (Elsevier) 2023 Impact factor: 4.3.  
DOI: <https://doi.org/10.1016/j.diamond.2020.108131>  
SCOPUS LINK: <https://www.scopus.com/sourceid/24680>
18. **Devi Dass**, “Metallic-semiconducting transition of silicon nanowires by surface passivation”, **Results in Surfaces and Interfaces**, vol. 3, 100009 (10 pages), 1 May 2021. ISSN: 2666-8459, peer-reviewed and scopus indexing  
DOI: <https://doi.org/10.1016/j.rsufi.2021.100009>

### Book Chapters

1. **Rakesh Vaid, Richa Gupta, Devi Dass, Vijay K. Arora**, “Physical properties of carbon nanotubes and nanoribbons”, 305-332 (Elsevier) 2022.  
**Book name:** Graphene, Nanotubes and Quantum Dots-Based Nanotechnology  
**ISBN:** 978-0-323-85457-3  
**DOI:** <https://doi.org/10.1016/C2020-0-01826-8>

### Presented papers in International Conferences (Outside India)

1. **Devi Dass**, Rakesh Prasher, and Rakesh Vaid, “Chirality Dependent Modeling of Double and Multi-Walled Carbon Nanotubes”, presentation in 3<sup>rd</sup> Nanotoday Conference held at the matrix, Biopolis, **Singapore**, w. e. f. December 8-11, 2013.

2. **Devi Dass**, Rakesh Prasher, and Rakesh Vaid, “Chirality Controlled Zigzag CNT as Channel Material for High Performance CNT-FETs”, presentation in 40<sup>th</sup> Micro and Nano Engineering (MNE-2014) International Conference held at Lausanne, **Switzerland**, w. e. f. September 22-26, 2014.

### **Presented papers in International Conferences (India)**

1. **Devi Dass**, and Rakesh Vaid, “Impact of Chirality variations on various performance parameters for a Single Walled Chiral type CNT: A Simulation Study”, presentation (paper P-052) in 13<sup>th</sup> International Conference of International Academy of Physical Sciences (CONIAPS-XIII) held at University of Petroleum and Energy Studies, Dehradun, India, w. e. f. June 14 -16, 2011.
2. **Devi Dass**, and Rakesh Vaid, “Impact of Chirality variations on various performance parameters for a Single Walled Armchair type CNT: A Simulation Study”, presentation (paper NT-37) in XVI<sup>th</sup> International Workshop on Physics of Semiconductor Devices (IWPSD 2011) held at IIT-Kanpur, India, w. e. f. December 19-22, 2011.
3. **Devi Dass**, and Rakesh Vaid, “Analysis of the Simulated Results of Armchair and Zigzag Type Single Walled Carbon Nanotubes (SWCNTs)”, presentation in International Conference on Computational Electronics and Nanotechnology (ICOCENT) held at Amity University, Jaipur, Rajasthan, India, w. e. f. March 1-2, 2012.
4. **Devi Dass**, and Rakesh Vaid, “Effect of Various Performance Parameters for a Zigzag Type Single Walled Carbon Nanotube (SWCNT) : A Simulation Study”, presentation (paper FI-10) in International Conference on Nano Science and Technology (ICONSAT) held at Hotel Taj Krishna, Banjara Hills, Hyderabad, India, w. e. f. January 20-23, 2012.
5. **Devi Dass**, and Rakesh Vaid, “Effect of Various Performance Parameters in an Armchair Single-Walled Carbon Nanotube: A Simulation Study”, presentation in International Conference on Frontiers of Nanoscience, Nanotechnology and Their Applications (Nanoscitech-2012) held at Punjab University Chandigarh, India, w. e. f. February 15-18, 2012.

6. **Devi Dass**, Rakesh Prasher, and Rakesh Vaid, “Impact of High-k Dielectric Materials on the Performance of CNTFETs”, presentation in International Conference on Emerging Technologies: Micro to Nano (ETMN 2013) held at BITS, Pilani-KK Birla Goa Campus, Goa, India, w. e. f. February 23-24, 2013.
7. **Devi Dass**, Rakesh Prasher, and Rakesh Vaid, “Study of Performance of Cylindrical shaped Ballistic Carbon Nanotube FET with High-k Dielectrics”, presentation in International Conference on Nanoscience and Nanotechnology held at Babasaheb Bhimrao Ambedkar University, Lucknow, Uttar Pradesh, India, w. e. f. November 18-20, 2013.
8. **Devi Dass**, and Rakesh Vaid, “Simulation of Ballistic Carbon Nanotube Field Effect Transistor using top-of-barrier approach”, presentation in 6<sup>th</sup> International Conference of Nano Science and Technology (ICONSAT 2014) held at Panjab University, Chandigarh, India, w. e. f. March 2 – 5, 2014.
9. Rakesh Prasher, **Devi Dass**, and Rakesh Vaid, “Al/HfO<sub>2</sub>/Si Gate Stack with Improved Physical and Electrical parameters”, presentation in 29<sup>th</sup> International Conference on VLSI Design held at Kolkata, India, w.e.f. Jan. 4-8, 2016.
10. **Devi Dass**, Rakesh Prasher, Sahil, and Rakesh Vaid, “Novel channel materials for advanced CMOS technology”, presentation in Two–Day International Conference on Recent Advances in Interdisciplinary Sciences (ICRAIS) Department of Electronics, University of Jammu, Jammu, J & K, India, w.e.f. January 11-12, 2019.

### **Presented papers in National Conferences (India)**

1. Rakesh Vaid, and **Devi Dass**, “Simulation of Armchair type Carbon Nanotubes”, presentation (paper DPP—05) in 14<sup>th</sup> Punjab Science Congress held at SLIET- Sangrur, Punjab, w. e. f. Feb 7-9, 2011.
2. **Devi Dass**, and Rakesh Vaid, “Analytical Study of Single walled CNTs”, presentation in 7<sup>th</sup> JK Science congress held at University of Jammu, India, w. e. f. October 13-15, 2011.
3. **Devi Dass**, and Rakesh Vaid, “A comparative study on various Single-walled carbon nanotubes”, presentation (paper POS-77) in 4<sup>th</sup> Bangalore Nano held at The Lalit Ashok, Bangalore, India, w. e. f. December 8-9, 2011.



4. Rakesh Vaid, and **Devi Dass**, “Study of Single Walled Carbon Nanotubes for Futuristic Applications”, presentation in National Symposium on Nanobiotechnology held at IIT Mandi, Himachal Pradesh, India, w. e. f. June 1-2, 2012.
5. **Devi Dass**, and Rakesh Vaid, “Impact of Varying the Carbon Nanotube (CNT) diameters on the Performance of Carbon Nanotube Field Effect Transistor (CNTFET)”, presentation in First National Conference on Recent Developments in Electronics (NCRDE) held at University of Delhi South Campus, New Delhi, India, w. e. f. January 18-20, 2013.
6. **Devi Dass**, Rakesh Prasher and Rakesh Vaid, “Application of SWCNT as Heterojunction”, presentation in National Conference on Trends in Electronics and Computational Technologies held at University of Jammu, J & K, India, on 20<sup>th</sup> March 2015.
7. **Devi Dass**, Rakesh Prasher, and Rakesh Vaid, “Simulation Study of Coaxially Gated Ballistic CNTFET”, presentation in 3<sup>rd</sup> National Conference & Exhibition Emerging and Innovative Trends in Engineering Technology (NCEEITET) held at Govt. College of Engineering and Technology, Chak Bhalwal, Jammu, J & K, India, w. e. f. September 15-16, 2015.
8. **Devi Dass**, and Rakesh Vaid, “Improved device performance of CNTFET with CNT band gaps” presentation in Mini Colloquium (MQ) cum National Seminar on Advances in Electronic Devices and Circuits held at Department of Electronics, University of Jammu, J & K, India, April 26, 2017.
9. **Devi Dass**, and Rakesh Vaid, “Structural and electronic properties of a graphene nanoribbon: A novel channel material for nanoscale devices”, presentation in two days National Conference on Emerging Materials and Nanotechnology (EMAN-2019) held at CT Bora College, Shirur, Pune, Maharashtra, India, w.e.f January 18-19, 2019.

#### **National Conferences/Workshops attended only**

1. “Seminar on Semiconductor Nanomaterials & Devices” held at University of Jammu, Jammu on March 25, 2010.

2. “7<sup>th</sup> INUP Familiarization Workshop on Nanofabrication Technologies” held at IIT Bombay, Mumbai, w. e. f. June 4-5, 2012.
3. “9<sup>th</sup> International Workshop on Nanomechanical Sensing” held at IIT Bombay, Mumbai, w. e. f. June 6-8, 2012.
4. “Brainstorming Session / Awareness Workshop” held at University of Jammu, Jammu on 25<sup>th</sup> September, 2012.
5. “International Conference on Emerging Electronics” held at IIT Bombay, Mumbai, w. e. f. December 15-17, 2012.
6. “14<sup>th</sup> INUP Hands-on Training on Nanofabrication Technologies” held at IIT Bombay, Mumbai, w. e. f. December 18-20, 2012.
7. “Third National Workshop on Recent Trends in Semiconductor Devices and Technology” held at University of Delhi South Campus, New Delhi, w. e. f. January 19-20, 2013.
8. “National Workshop on Scientific/Research Paper Writing” organized by The National Academy of Sciences, India held from April 5-7, 2013 at Mohanlal Sukhadia University, Udaipur, Rajasthan.
9. “Bringing the Nanoworld Together” seminar held at IIT Bombay, Mumbai, w. e. f. December 2-3, 2013.
10. “2- Day INUP Familiarization Workshop on Nanofabrication Technologies” held at Department of Physics & Electronics, University of Jammu, w. e. f. September 6-7, 2014.
11. “2 Day India-Trento program for Advanced Research (ITPAR) Workshop on N/MEMS Sensing Systems for Chem, Bio and Agriculture Applications” held at IIT Bombay, Mumbai, w. e. f. 1-2 October 2014.

Link to google scholar: <https://scholar.google.com/citations?user=xmvhoXYAAAAJ&hl=en>