


Title	Dr.	First Name	Jiten Kumar	Last Name	Mishra	Photograph
Designation	Professor					
Department	Physics					
Address	Govt. Women's College, Sambalpur					
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Education						
<i>Subject</i>	<i>Institution</i>			<i>Year</i>	<i>Details</i>	
M.Sc	G.M College, Sambalpur			1985	Specialization in Electronics	
M.Phil	P.G. Department of Physics, Sambalpur University			1988		
Ph.D	Sambalpur University			1998	"COMPUTER AIDED STUDIES ON SOME PROPERTIES OF MIXED TUNNELLING AVALANCHE TRANSIT TIME (MITATT) DEVICES"	
Career Profile						
<i>Organization/ Institution</i>		<i>Designation</i>		<i>Duration</i>	<i>Role</i>	
U.G.I. E., Rourkela		Lecturer		29.01.1988-28.01.1990	Teaching	
Rajendra College, Bolangir		Lecturer		29.01.1990-15.11.1993	Teaching	
G.M.(Auto) College, Sambalpur		Lecturer Lecturer (Senior Scale)		23.11.1993-16.10.2003	Teaching	
N. S. C. B. College, Sambalpur		Lecturer (Senior Scale) on deployment		01.09.2001 08.11.2002	Teaching	
Govt.(Auto) College, Rourkela		Reader		24.10.2003-16.08.2005	Teaching	
Govt. Women's College, Sambalpur		Reader Associate Professor Professor		17.08.2005 till Continuing	Teaching	
Research/ Interests/ Specialization						
Semiconductor Devices such as IMPATT, MITATT, APD						
Teaching Experience (Subjects/ Courses Taught)						
34 years						
Publications: Articles / Book Chapter						

- [1] Noise in mixed tunnelling avalanche transit time (MITATT) diodes, *Solid State Electronics*, Vol.39, No.10, pp.1473-1479, 1996 (G.N. Dash, J.K. Mishra and A.K. Panda).
- [2] An extremely low noise heterojunction IMPATT, *IEEE Trans. on Electronic Devices*, Vol.44, No.12, pp. 2143-2148, 1997 (J.K. Mishra, A.K. Panda and G.N. Dash).
- [3] Design optimisation of a single sided Si/SiGe heterostructure MITATT DDR, *Semi-conductor Science and Technology*, Vol.12, pp.1635-1640,1997 (J.K. Mishra, A.K. Panda and G.N. Dash).
- [4] Simulation studies on the noise behaviour of double avalanche region diodes, *Semi-conductor Science and Technology*, Vol. 16, pp895-901, 2001 (J. K. Mishra, G. N. Dash and I. P. Mishra).
- [5] Computer simulation study on the noise and millimeter wave properties of InP/GaInAs heterojunction Double Avalanche Region IMPATT diode, , *Solid State Electronics*, Vol. 48, pp 401-408, 2004 (J. K. Mishra, G. N. Dash, S. R. Pattanaik and I. P. Mishra).
- [6] Prospects of 6H-SiC for operation as an IMPATT Diode at 140 GHz, *Semiconductor Science and Technology*, Vol. 20, No 3, pp. 299-304, 2005 (S.R. Pattanaik, G.N. Dash and J.K. Mishra)
- [7] Phase distortion assisted MITATT design for compensation of performance deterioration due to tunnel current, *Journal of the IETE*, Vol.39, No.6, pp.375-377, 1993 (G.N. Dash, A.K Panda, S.P. Pati and J.K Mishra).
- [8] MITATT mode in GaAs DDR with different crystal orientations, *Indian Journal of Pure and Applied Physics*, Vol. 36, pp.5-12, 1998 (J.K. Mishra and G.N. Dash).
- [9] Tunnelling assisted noise control in InAs/InAs_{0.88}Sb_{0.12} Read avalanche diode, *IETE Technical Review*, Vol.16, pp. 243, 1999 (G.N. Dash, J.K. Mishra and S. K. Nayak).
- [10] Optimisation of Drift Region Width With Reference to Noise in si DAR IMPATT diode, *Indian journal of Physics*, , Vol. 76A, pp.61-63,2002, (J. K. Mishra, G. N. Dash, T. K. Mishra and I. P. Mishra)
- [11] Optically controlled noise and small-signal behaviour of Read avalanche diode, *Indian Journal of Physics* , , Vol.77A, pp. 387-391, 2003(G. N. Dash, J. K. Mishra and I. P. Mishra).

- [12] A comparative study of ν - and π - type DAR IMPATT diode structures based on InP material, *Indian journal of Physics*, , Vol. 77A, pp.173-175, ,2003 (S.R. Pattanaik, I.P. Mishra, J.K. Mishra and G.N. Dash).
- [13] Study of Si/SiGe Heterostructure DAR IMPATTs for operation at 94GHz, *IETE Journal of Research*, Vol. 50, pp.163-168,, 2004 (S. R. Pattanaik, I. P. Mishra, J. K. Mishra and G. N. Dash)
- [14] Performance of 4H-SiC/6H-SiC Heterojunction IMPATT Diode, *International Journal of Material Science* (ISSN 0973-4589), Volume 5, Number 5, pp. 769—775, 2010 (S.R. Pattanaik, J.K. Mishra and G.N. Dash)
- [15] Millimeter-wave and Noise Characteristics of GaAs~AlGaAs heterojunction IMPATT Diode, *Orissa Journal of Physics* (ISSN 0974 – 8202),Vol. 18, No 1, pp. 79 - 84, Feb 2011 (S. R. Pattanaik, J. K. Mishra and G. N. Dash)
- [16] A new mm-wave GaAs~Ga_{0.52}In_{0.48}P Heterojunction IMPATT Diode, *IETE Journal of Research*, Vol. 57, No.04, pp.351-354, 2011 (S. R. Pattanaik, J. K. Mishra and G. N. Dash)

Conference/ Presentations

- [1] (111) - Oriented GaAs Avalanche photodiode, *Proceedings of Solid State physics symposium*, Tirupati, Vol 35-c, pp.458, 1993 (**J.K. Mishra**).
- [2] IMPATT mode operation of W and D band Si DDRs with carrier diffusion current, *Proceedings of the 4th International Symposium on Recent Advances in Microwave Technology*, pp. 130-133, 1993 (G.N. Dash, A.K. Panda, **J.K. Mishra** and S.P. Pati).
- [3] Computer aided study of excess Noise in GaAs APD with different crystal orientation, *Physics of Semiconductor Devices*, Kirshan Lal Eds., Narosa publishing House, New Delhi, pp.97,1993 (**J.K. Mishra**, G.N. Dash and S.P. Pati).
- [4] A computer scheme to study the impulse response and frequency response of avalanche photodiodes, *Proceedings of APSYM-CUSAT'94*, pp.213, 1994 (**J.K. Mishra**, S.Mishra and G.N. Dash).
- [5] Excess noise study of Hi-Lo (111) -Oriented GaAs APD, *Proceedings of the seminar on Electronics systems and Applications*, Roorkee, Allied Publishers Ltd, pp. 29, 1994 (**J.K. Mishra** and G.N. Dash).
- [6] High frequency design optimisation of InP/GaInAs and InP/GaInAsP heterostructure DDRs, *Proceeding of ASIA-PACIFIC MICROWAVE CONFERENCE'1996-APMC'96*, 1996

(**J.K.Mishra**, A.K. Panda and G.N. Dash).

- [7] Tunnelling assisted enhancement of device properties in IMPATT diodes for a constant frequency operation with different bias current, *Proceeding of INCURSI-96*, 1996 (**J.K.Mishra** and G.N.Dash).
- [8] The potentiability of Si/SiGe heterostructure MITATT devices, *Proceedings of 3rd ICSMT'96, 1996, Trans. Tech. Publication Ltd., Switzerland* (**J.K.Mishra**, A.K.Panda, S.K.Dash, S. Satpathy, G.N. Dash and S.P. Pati).
- [9] Studies on Si/SiGe heterostructure IMTATT DDR with one sided SiGe layer, *Proceedings of Solid State Physics Symposium'1996*, 1996 (J.K.Mishra, A. K. Panda, G.N.Dash and S. P.Pati).
- [10] Minimisation of excess noise in GaAs APD by modulating the diffusion doping profile, *Proceeding of INCURSI-96*, 1996 (**J.K. Mishra**, A.K. Panda and G.N. Dash).
- [11] Effect of tunnelling current on avalanche phase delay in MITATT Devices, *Semiconductor Devices, Krishan Lal Eds., Narosa Publishing House, New Delhi*, pp.187, 1996 (**J.K. Mishra** and G.N. Dash).
- [12] Studies on the noise electric field profile for InP/GaInAs hetrostructure MITATT diode, *Bulletin of Orissa Physical Society*, Vol.5, pp. 41, 1997 (**J.K. Mishra**, A.K. Panda and G.N. Dash).
- [13] Computer solution of doping profiles of ion-implanted pin junctions and its application to optimise microwave characteristics of IMPATT-diodes, *Bulletin of Orissa Physical Society*, Vol.5, pp. 90, 1997 (S.P. Pati, G.N. Dash, S.K. Dash, **J.K. Mishra**, S. Satpathy and A.K. Panda).
- [14] Computer investigation on the noise properties of MITATT devices, *Proceedings of Solid State Physics Symposium, Kochi, 1997* (**J.K.Mishra**, G.N.Dash).
- [15] Noise and microwave properties of InAlAs/InGaAs superlattice avalanche Read diode, *Proceeding of INCURSI-99: Frontiers of Electronics, Communication and Photonics*, pp. 94, 1999 (**J.K. Mishra**, G. N. Dash).
- [16] Single Fundamental Band output from Double Avalanche Region IMPATT diode, *IWPSD-99, 1999* (I. P. Mishra, **J.K. Mishra** and G. N. Dash).
- [17] Photon assisted control of noise and millimeterwave properties of READ Avalanche diode, *Proceeding of Symposium on Advances in Microwave Millimeterwave and Infrared Technology (SAMMIT-99)*, 1999 (G. N. Dash and **J. K. Mishra**).

- [18] Noise in Double Avalanche Region IMPATT diode, *Proceedings of CMDAYS-2000*, Bilaspur, 2000 (J. K. Mishra, G. N. Dash, T. K. Mishra and I. P. Mishra)
- [19] Performance Assessment of the two Complementary si DAR IMPATT diodes, *Proceedings of Materials And Semiconductor Technologies in Electronics Research (MASTER-2000)*, Pantnager, 2000 (I. P. Mishra, J. K. Mishra and G. N. Dash).
- [20] Heavy Bias Noise Characteristics in Double Avalanche Region IMPATT Diodes, *Bulletin of Orissa Physical Society*, Vol.19, pp. 79, 2001 (J. K. Mishra , S. R. Pattanaik, I. P. Mishra and G. N. Dash).
- [21] A high power and low noise GaAs DAR IMPATT diode, *Proceedings of IWPSD, IIT*, New Delhi, Dec., 2001 (S.R. Pattanaik, I.P. Mishra, J.K. Mishra and G.N. Dash).
- [22] The potentials of InP/GaInAs double avalanche region IMPATT diode, *Proceedings of IWPSD, IIT*, New Delhi, Dec., 2001 (J.K. Mishra, S.R. Pattanaik, I.P. Mishra and G.N. Dash).
- [23] A comparative study of v - and π - type DAR IMPATT diode structures based on InP material, *Proceedings of CMDAYS-2001*, Sambalpur, 2001 (S.R. Pattanaik, I.P. Mishra, J.K. Mishra and G.N. Dash).
- [24] Microwave negative resistivity profiles of InP/GaInAs heterojunction double avalanche region (DAR) IMPATT diodes, *Proceedings of CMDAYS-2001*, Sambalpur, 2001 (J.K. Mishra, G.N. Dash, S.R. Pattanaik and I.P. Mishra).
- [25] Study of Si/SiGe Heterostructure DAR IMPATT diode, *Proceedings of APSYM, Cochin*, 2002 (S. R. Pattanaik, I. P. Mishra, J. K. Mishra and G. N. Dash)
- [26] Avalanche noise characteristic of GaAs/AlGaAs heterojunction IMPATT diode, *Proceedings of IWPSD*, Chennai, Dec. 2003 (J.K. Mishra, S.R. Pattanaik, I.P. Mishra and G.N. Dash).
- [27] Optimisation of DC and Small signal properties of GaAs/AlGaAs heterojunction IMPATT diode, , *Proceedings of CMDAYS-2003*, Jadavpur Univ. , Kolkota, 2003 (S.R. Pattanaik, J.K. Mishra, G.N. Dash).
- [28] Effect of SiGe nano-layers on the performance of heterojunction DAR IMPATT diode, *Proceedings of CMDAYS-2003*, Jadavpur Univ. , Kolkota, 2003 (S.R. Pattanaik, J.K. Mishra, G.N. Dash).

[29] Prospects of GaAs/GaN heterojunction for realisation of millimeter wave, *Proceedings of CMDAYS-2003, NEHU, Shillong, 2004* (S.R. Pattanaik, **J.K. Mishra**, G.N. Dash).

[30] GaAs/AlGaAs IMPATT diode for high power and low noise operation, *Proceedings of PEMD-2005, Sambalpur Univ., 2005* (S.R. Pattanaik, **J.K. Mishra**, G.N. Dash).

[31] Realization of High Power IMPATT Diodes with 4H-SiC, *Proceedings Recent Advances in Physics*, held at Department of Physics, Dalmia College, Rajgangpur, Orissa during Feb. 8-10, 2006 (S.R. Pattanaik, G.N. Dash, S.K. Swain and **J.K. Mishra**)

[32] Prospects GaAs/Ga_{0.52}In_{0.48}P Heterojunction IMPATT Diode for Low Noise Operation at 94 GHz, *Proceedings Recent Advances in Physics*, held at Department of Physics, Dalmia College, Rajgangpur, Orissa during Feb. 8-10, 2006 (S.R. Pattanaik, G.N. Dash, S.K. Swain and **J.K. Mishra**)

[33] Millimeter-wave Communication Characteristics of GaAs~AlGaAs heterojunction IMPATT Diode, *National Seminar on Communication – Present Trend and Future Prospects*, GIET, Gunupur, Nov 18 – 19, 2009 (S. R. Pattanaik, **J. K. Mishra** and G. N. Dash)

[34] Potentials of Superlattice Materials for Avalanche Devices, *Proceedings of National Seminar on Physics and Technology of Novel Materials -2010 (PTNM – 2010)*, Sambalpur University, Feb 25 – 27, 2010, Abstract Volume, pp.44, (S.R. Pattanaik, **J.K. Mishra** and G.N. Dash)

[35] Performance of 4H-SiC~6H-SiC heterojunction IMPATT diode at 94 GHz, *Proceedings of National Seminar on Physics and Technology of Novel Materials -2010 (PTNM – 2010)*, Sambalpur University, Feb 25 – 27, 2010, Abstract Volume, pp.45, (S.R. Pattanaik, J.K. Mishra and G.N. Dash)

[36] Cosmic Gamma Ray Bursts (GRBs): At a Glimpse, Souvenir cum Abstract of National seminar on “Performance of Apodized Astronomical Telescope Objectives for Resolution of Binary Stars with Unequal Brightness”, Sept. 29-30, 2012, Deptt. of Physics, G.M. (Auto) College, Sambalpur.

Public Service/ University Service/ Consulting Activity/ College Committee members

- (i) Associate advisor College Union
- (ii) Member NAAC
- (iii) Member IQAC
- (iv) Associate V.P. Science Society

Professional Societies Memberships

- I. Acted as Resource person in the P. G. DEPT. OF ELECTRONICS, Sambalpur Univ. Jyoti Vihar for the session 1999-2001
- II. Member Board of Conducting Examination, Sambalpur Univ., 2002
- III. Paper setter for G.G. Univ., Bilaspur, Chhatisgarh
- V. Paper setter for Ravenshaw College, Cuttack
- V. Paper setter for Berhampur Univ., Berhampur

- VI. Member Board of Studies in Physics, G. M.(Auto) College, Sambalpur, 1996-2003
- VII. Member Board of Studies in Physics, Govt. (Auto) College, Rourkela, 2003-2005
- III. Member Board of Studies in Computer Science, G. M.(Auto) College, Sambalpur, 2005-2011
- X. Member Board of Studies in Opto electronics, Govt.(Auto) College, Bhawanipatana, 2010
- X. Resource person for Refresher Courses in Electronics, Academic Staff College, Sambalpur Univ., March 2009
- XI. Member Board of Studies in Physics, Sambalpur University, 2013-14.
- XII. Member Board of Conducting Examiners in Physics & Computer Science, G.M. (Auto) College, Sambalpur 2011-12.
- XIII. Member Board of Conducting Examiners in Physics Sambalpur University, Sambalpur 2013-14.
- XIV. Member Board of Conducting Examiners in Physics Rajendra (Auto) College, Bolangir 2013-14 & 2014-15.
- XV. Member Board of Studies in B.Sc. IST, G.M. University, Sambalpur, 2015-16, 2016-17 & 2017-18.
- XVI. Member Board of Studies in Physics, Sambalpur University, 2016-17.
- XVII. Member Board of Studies in Physics, Sambalpur University, 2020-21.
- XVIII. **V.C. Nominee Member for Academic Council of Govt. (Auto) College, Rourkela, 2015-16.**
- XIX. **Reviewed Research Papers and recommended for publication in "International Journal for Material Science", 2010.**
- XX. **Reviewed Research Papers and recommended for publication in "World Journal of Nano Science and Engineering (WJNSE)", November 2014.**

Projects(Major Grants/ Collaborations)

- (a) UGC sponsored Minor Research Project entitled '**Computer aided studies on the properties of Avalanche Photodiodes with special reference to low noise design**' vide UGC letter No. F.15-53/92(SR-I) 1994-1996 as Principal Investigator, Completed.
- (b) DST Major Research Project entitle '**Noise and mm-wave properties of some Heterojunction and Superlattice MPATTs**' vide DST, Govt. of India letter No. SP/S2/M-12/98 2000-2003 as Principal Co-Investigator, Completed.

Other Details

Seminars, Conferences, Symposia Workshops, FDP etc., attended

- 1. Eight International Workshop on Physics of Semiconductor Devices, Dec. 11-16, 1995, NPL, New Delhi.
- 2. National Seminar on Physics and Related Technology in India after Independence, March 26-28 1999, Sambalpur University, Jyotivihar, Sambalpur, Odisha.
- 3. National Seminar on Condensed Matter Physics (CMDAYS-2000), August 29-31 2000, Guru Ghasidas University, Bilaspur, Chhtisgarh.
- 4. National Seminar on Physics in the Millenium, Feb. 10-11 2001, Bhubaneswar Odisha.
- 5. National Seminar on Condensed Matter Physics (CMDAYS-2000), August 29-31 2001, Sambalpur University, Jyoti Vihar, Sambalpur, Odisha.
- 6. 11th International on Physics of Semiconductor Devices, Dec. 11-15 2001, IIT, New Delhi.

7. National Seminar on Condensed Matter Physics (CMDAYS-2000), August 29-31 2003, Jadavpur University, Kolkata.
8. National conference on Astrophysics and Cosmology, Feb 06-05 2005, R.D. Women's College, Bhubaneswar.
9. National Conference on 'Einstein and Twentieth Century Physics' Feb 11-12' 2006, P.N. College, Khurda.
10. National Seminar on "Physics Education and Research Challenges ahead", Feb 10-11, 2007, Ispat College, Rourkela.
11. National Seminar on "Role & Relevance of Physics in Engineering Education", February 14-15, 2009, NIST, Palur Hill, Berhampur
12. National Seminar on Recent Trends in Information and Technology, Oct 02-03, 2010, Govt. Women's College, Sambalpur.
13. National Seminar on Non Conventional Energy, (NASENCE-2011) Feb 12-13, 2011, Sambalpur University, Jyoti Vihar, Sambalpur.
14. National in seminar on "Performance of Apodized Astronomical Telescope Objectives for Resolution of Binary Stars with Unequal Brightness", Sept. 29-30, 2012, Deptt. of Physics, G.M. (Auto) College, Sambalpur.
15. State Level Seminar on "Contemporary Trends in Physics", Mar. 30-31, 2013, Deptt. of Physics, Rajendra (Auto) College, Bolangir.
16. National Seminar on "Recent Trends in Physics", Feb. 13-14, 2016, Maharishi College of Natural Law, Bhubaneswar.
17. National Seminar on "Advances in Physics during the last half century and its Applications on Society", Feb. 27-28, 2016, P.G. Dept. of Physics, G.M. University, Sambalpur.
18. National Seminar on "Recent Trends on Material Science (RTMS-2019)", March 18-19, 2019, School of Physics and Chemistry, G.M. University, Sambalpur.
19. National Seminar on "Role of Physics in Technological Advances (NSRPTA-2020) & 37th Convention of OPS, Feb. 8-9, 2020, VSSUT, Burla, Sambalpur.