

BRIEF PROFILE OF
PROFESSOR NIRMAL KUMAR ROY

1.	Name in full (in capital letters)	NIRMAL KUMAR ROY		
2.	Father's / Husband's Name	LATE SRI BROJOBASHI ROY		
3.	Date of birth	07-05-1961		
4.	a) Marital Status : Married/ Unmarried	b) Gender : Male / Female		
5	a) Permanent address: GOPALNAGAR OIL MILL GOPALNAGAR PO+VILL 24 PGS (N) DT WB	b) Correspondence Address: Flat No 201, G+ 8 Building, NIT CAMPUS NATIONAL INSTITUTE OF TECHNOLOGY DURGAPUR NIT CAMPUS DURGAPUR 713209		
	Phone (with STD)	0343 2544144 (M) 9434788042	E-mail	roy.nk2003@gmail.com
6.	Nationality	INDIAN		

7. Details of Educational Qualification :

Exam. Passed	Specialization	Board/University	Passing	Class/	% marks/
1	Bachelor of Engineering (B.E) (Electrical Engineering)	University of Burdwan (R. E. College, Durgapur, presently NIT, Durgapur)	1985	1 st Class	71.5 %
2	M.E. (Electrical Engineering) (High Voltage Engineering)	Indian Institute of Science, Bangalore	1987	1 st Class -	75.0 % (6.0)
3	Ph.D in Electrical Engineering	University of South Australia, Australia	2000 (1994-2000)	-	-

8. Details of employments:

(a) Teaching:

Total: 22 Years 9 Months

Post PhD: 2 Years 9 months

S.No.	Name and address of employer	Designation	Pay-scale	From	To	Duration	Type of organization
1	College of Military Engineering, Pune under Ministry of Defence, Govt of India	Assistant Professor in Electrical Engineering	Rs 12000-420-18300 (pre-revised)	13.09.2000	03-05-2003	02 Years 08 Months	Under Ministry of Defense, Govt of India
2	R.E.College, Durgapur (Presently National Institute of Technology, Durgapur)	Assistant Professor in Electrical Engineering	Rs 12000-420-18300 (pre-revised)	03-05-2003	06-05-2007	04 Years	Under Ministry of Human Resource and Development, Govt of India

3	National Institute of Technology, Durgapur	Professor in Electrical Engineering	Rs 16400+950-22400 + GP- 10,500	07-05-2007	04-11-2019	11 Years 8 Months	Under Ministry of Human Resource and Development, Govt of India
4	National Institute of Technology, Durgapur	Professor (HAG) in Electrical Engineering	Rs 204000+	05-11-2019	Till Date	3Years 4 months	Under Ministry of Human Resource and Development, Govt of India

(b) Industry: Total: 8 Years 4 months

S.No.	Name and address of employer	Designation	Pay-scale	From	To	Duration	Type of Organization
1	National Test House, Alipore, Kolkata,	Scientific Assistant (Electrical)	Rs 1640 – 60-2600-EB-75-2900	31.05.1988	29.1.1991	2 Years 08 Months	Under Ministry of Commerce, Department of Supply, Govt of India
2	National Test House, Kamala Nehru Nagar, Ghaziabad	Assistant Director (Electrical),	Rs 8000 – 275-13500 (pre-revised)	30.1.1991	13.09.2000	09Years 08 Months (4 Years as Research Scholar at University of South Australia	Under Ministry of Commerce, Department of Supply, Govt of India

(c) Research: Total: 4 Years

S.No.	Name and address of employer	Designation	Pay-scale	From	To	Duration	Type of Organization
1	University of South Australia, Adelaide , Australia	National Overseas Research Scholar	Consolidated US \$ 800/	Nov 1994	Oct 1998	4 years appx	University of South Australia, Australia

9. Other information (Experiments/Computational projects added to teaching laboratories/ Courses offered through application of ICT/E-learning packages prepared):

Laboratory Developmental Work:

- i. Designed and developed a High Voltage Laboratory in National Test House, Ghaziabad, Under Ministry of Consumer Affairs, Govt of India, Cost of the project approximately Rs 7 Crores, during 1991-1993.
- ii. Designed and developed a High Voltage Laboratory in College of Military Engineering, Ministry of Defence, Pune, Cost of the project approximately Rs 1.5 Crore, during 2001-2003.
- iii. Designed and developed a High Voltage Laboratory with the Virtual & Remote Laboratory Concept at National Institute of Technology, Durgapur, Cost of the project approximately Rs 2.1 Crore, during 2006-2009.
- iv. Developed Oil Insulation Laboratory, at National Institute of Technology, Durgapur, Cost of the project approximately Rs 15 lakhs, during 2014-2015

Learning Resources /e Learning packages developed:

- i. Computer Based Training Material on “Diesel Power Plants”
- ii. Computer Based Training Material on “High Voltage Virtual Laboratory”
- iii. Computer based learning material for energy systems
- iv. Computer Based Learning Material for High Voltage Engineering

New experiments or computational projects added to teaching laboratories

Sl. No.	Name of the experiments / computational project	Name of the laboratory with code No.
1	Calibration of Power frequency High Voltage with the help of 300 KV AC High Voltage transformer source and Sphere-Sphere Gap arrangement at laboratory temperature and Pressure	High Voltage Laboratory- (for B Tech & M Tech)
2	Measurement of Partial Discharge with sphere-sphere gap arrangement with the help of 300 KV AC High Voltage transformer source	High Voltage Laboratory- (for B Tech & M Tech)
3	Study the BDV strength test for various pressure and vacuum at Power frequency High Voltage	High Voltage Laboratory- (for B Tech & M Tech)
4	Study the Characteristics of Impulse Voltage and the wave shape of Lighting impulse voltage with the help of 800 KV,40KJ Impulse Voltage Generator	High Voltage Laboratory- (for B Tech & M Tech)
5	Study the Ratio and Phase Error Measurement of Transformer	High Voltage Laboratory- (for B Tech & M Tech)
6	Study of Capacitance & Tan Delta of insulating material with the help of 10KV Schering Bridge.	High Voltage Laboratory- (for B Tech & M Tech)
7	Study BDV Strength test of insulating oils with the help of 100 KV BDV test system	High Voltage Laboratory- (for B Tech & M Tech)
8	Study the variation of Resistivity of Transformer oil with temperature and insulation resistance of paper with applied voltage.	High Voltage Laboratory- (for B Tech & M Tech)
9	Study the Four-terminal Sensing method for measuring very low resistances using micro-ohm meter	High Voltage Laboratory- (for B Tech & M Tech)
10	Survey of lightning in the classroom and spatial magnetic field in the vicinity of overhead power lines	High Voltage Laboratory- (for B Tech & M Tech)

10. Research Activities:

(a) Paper publications in National / International Journals/Conferences:

Journal Papers

I. 2019-2020

- a) M Ghosh, C Koley and NK Roy, "Robust support vector machine-based zero-crossing detector for different power system applications," *IET Science, Measurement & Technology* 13 (1), 83-89.
- b) P. Thomas, N. E. Hudedmani, R. T. A. R. Prasath, N. K. Roy and S. N. Mahato, "Synthetic ester oil based high permittivity CaCu₃Ti₄O₁₂ (CCTO) nanofluids an alternative insulating medium for power transformer," in *IEEE Transactions on Dielectrics and Electrical Insulation*, vol. 26, no. 1, pp. 314-321, Feb. 2019, doi: 10.1109/TDEI.2018.007728.
- c) ARP Ramaian Thirugnanam, NE Hudedmani, NK Roy and SN Mahato, "Effect of un-inhibited synthetic ester oil based high dielectric CaCu₃Ti₄O₁₂ (CCTO) nanofluid for power transformer application," *IET Science, Measurement & Technology*. 13 (4), 486-490.
- d) Mishra, Dipak & Bhukya, Anitha & Koley, Chiranjib & Roy, Nirmal. (2019), "Radiometric Localization of Partial Discharge Sources inside Air Insulated Electrical Substation," *IET Science, Measurement & Technology*. 13. 10.1049/iet-smt.2019.0004.
- e) Dipak Kumar Mishra, Sourav Dhara, Chiranjib Koley, Nirmal Kumar Roy and Sivaji Chakravorti, "Self-organizing feature map based unsupervised technique for detection of partial discharge sources inside electrical substations," *Measurement*, Volume 147,2019,106818, ISSN 0263-2241, <https://doi.org/10.1016/j.measurement.2019.07.046>.

2020- 2021 NIL

2021-2022

- a) Sambaran Ray, Himadri Sekhar Chatterjee, Dipanjan Samajpati, Sankar Narayan Mahato, and Nirmal Kumar Roy, "BSA-Based Analysis Of Three-Phase Standalone Asynchronous Generator Using Two-Port Network," *International Journal of Power Electronics*, 2022, 16:3,385-398.

2. Conference Papers

2019-2020

- a) D. Jasper, S. Khandai, A. P. Mishra and N. K. Roy, "Investigation on Electrical Characteristics of Ester oil with TiO₂ Nanoparticles," *2020 IEEE-HYDCON, Hyderabad, India, 2020*, pp. 1-4, doi: 10.1109/HYDCON48903.2020.9242661.
- b) K. Adhikari, B. Sarkar, D. Jasper and N. K. Roy, "Development of Optical Fiber Sensor for Partial Discharge Detection in High Voltage Power Transformers," *2020 IEEE International Conference on Power Systems Technology (POWERCON), Bangalore, India, 2020*, pp. 1-6, doi: 10.1109/POWERCON48463.2020.9230681.

2020-2021

- a) Ray, S., Chatterjee, H.S., Samajpati, D., Mahato, S.N., Roy, N.K., "Two-Port Network-Based Modeling and Analysis of Three-Phase Self-excited Induction Generator Used in Renewable Energy Systems," *Advances in Smart Grid Automation and Industry 4.0. Lecture Notes in Electrical Engineering*, vol 693. Springer, Singapore. https://doi.org/10.1007/978-981-15-7675-1_41.
- b) Mousumi Mallick, Swapan Kumar Mitra, Debasish Basak, Nirmal Kumar Roy & Joydeep Maity (2021), "A novel approach of high-voltage low-current electric energy input to synthesise cost-effective ultra-strong ductile material," *Philosophical Magazine*, 101:5, DOI: 10.1080/14786435.20.
- c) Mallick, M., Mitra, S.K., Basak, D., Roy, N.K. and Maity, J. (2021), "Hardening of Steel Through High-Voltage Low-Current Energy Input." *steel research int.*, 92: 2000588. <https://doi.org/10.1002/srin.202000588>.
- d) A. R. P. R T, M. A. Ansari, T. Paramanandam, S. N. Mahato and N. K. Roy, "Performance Studies on Mineral Oil and Natural Ester Oil Based High Dielectric CCTO Nanofluids for High Voltage Application," *2021 IEEE 5th International Conference on Condition Assessment Techniques in Electrical Systems (CATCON)*, Kozhikode, India, 2021, pp. 123-126, doi: 10.1109/CATCON52335.2021.9670526.
- e) R. Deb and N. K. Roy, "Development of Portable Induction Furnace for MSME Sector," *2021 IEEE International Conference on Modern Electrical and Energy Systems (MEES)*, Kremenchuk, Ukraine, 2021, pp. 1-5, doi: 10.1109/MEES52427.2021.9598742.

2021 2022

- a) Sujit Khandai, D. Jasper, Krishanlal Adhikari, Partha Kumbhakar, Pathik Kumbhakar, and Nirmal Kumar Roy, "Investigation of dielectric properties of blended ester oils and dielectric fluids used in transformer at different temperatures," *AIP Conference Proceedings* 2640, 020004 (2022) <https://doi.org/10.1063/5.0117874>.
- b) Khandai, sujit; Biswas, Subrata ; R T, Dr Arun Ram Prasath; Kumbhakar, Pathik; Roy, Nirmal Kumar, "Experimental Study of Dielectric and Physical Properties of Blended Coconut Oil and Mineral Oil with Graphene Oxide Nanomaterial," *2022 IEEE 5th International Conference on Condition Assessment Techniques in Electrical Systems (CATCON)*, Durgapur.
- c) Krishanlal Adhikari, Nirmal Kumar Roy and Chiranjib Koley, "A Proposed Intensity Modulated Optical Fiber Based Sensor for Partial Discharge Detection in High Voltage Power Transformer," *2022 IEEE 5th International Conference on Condition Assessment Techniques in Electrical Systems (CATCON)*, Durgapur.

3. Book Chapters

I. 2019-2020

- a) T.K Gangopadhyay and N.K.Roy. *Photonics and Its Application in High-Voltage Engineering: Photonics and Fiber Optics: Foundations and Applications (1st ed.)*. CRC Press. <https://doi.org/10.1201/9780429026584>.

2021-2022

- a) Editors A R Gupta N K Roy and S K Parida , *Conference Proceedings on SGESC 2021 Power Electronics and High Voltage in Smart Grid*

2021-2022

NIL

(c) Number of UG and PG students guided / Ongoing:

UG		PG	
Guided	Ongoing	Guided	Ongoing
40	4	20	1

(d) Details of Ph D Students (Guided and Ongoing) :

S.No	Name of Student	Title of the Dissertation	Status (Completed /Ongoing)
1	Sri Subrata Karmakar NITD/PhD/EE/	Prof. Nirmal Kumar Roy & Prof. P Kumbhakar	Completed
2	Smt Anjali Chatterjee	Prof. Nirmal Kumar Roy & Prof. P Kumbhakar	Completed
3	Sri Badal Sarkar	Prof. Nirmal Kumar Roy & Prof. P Kumbhakar & Dr C Koley	Completed
4	Sri Dipak Misra	Prof. Nirmal Kumar Roy & Prof C Koley	Completed
5	Sri Arunram Prasath R T	Prof. Nirmal Kumar Roy & Prof. S N Mahato	Completed
6	Sri D Jasper	Prof. Nirmal Kumar Roy	On Going
7	Sri Sandip Khandai	Prof. Nirmal Kumar Roy	Ongoing
8	Sri Kishanlal Adhikari	Prof. Nirmal Kumar Roy	Ongoing
9	Ms Minati Ghosh	Prof. Nirmal Kumar Roy & Dr C Koley	Completed
10	Sri Sambaran Roy	Prof. Nirmal Kumar Roy & Dr S N Mahato	On Going
11	Sri Abhisek Kumar	Prof. Nirmal Kumar Roy	On Going

11. Expert Lecture organized/ delivered:

Sl No.	From	To	Name of the Institute/Organization	Sponsored/Self financed	Number of Participants
1	15-10-2019	19-10-2019	National Institute of Technology, Durgapur, on Advancement of Modern Technology in Engineering & Engineering Science	TEQIP Sponsored	53
2	13-12-2019	19-12-2019	National Institute of Technology, Durgapur, on Advancement of Modern Technology in Engineering & Engineering Science	TEQIP Sponsored	56
2	23-9-2020	27-9-2020	NIT, Kurukshetra	TEQIP Sponsored	67

12. Seminars/ Short Term Courses/ Summer Schools/ Winter attend, if any

S.No.	From	To	Institute/Industry	Sponsored by	Name of the course
			NIL		

13. Research Projects / Sponsored project/ Consultancy activities:

Sl No.	Sponsoring Agency	Title of the Project	Period	Amount	Status(Completed/)
1	MHRD, Govt. of India	Designed, developed and coordinated a project titled "Back up power plant with three 400 KVA DG sets" with total back up power of 1200kVA at NIT Durgapur in 2005-2006 at National Institute of Technology, Durgapur	2007-2009	Rs 1.5 Crore	Completed
2	TIFP, DSIR, Govt of India	Principal Investigator for "Development of a portal and kiosk of Gold smith's skill towards enhancement of entrepreneurship abilities among unemployed youth"	2006-2008	Rs 7 lakhs	Completed
3	TEQUIP, NPIU, Govt of India	Online monitoring of Partial Discharges of High Voltage Power Apparatus by Optoelectronic method	2006-2008	Rs 6 Lakhs	Completed
4	MHRD, Govt. of India	Coordinator for Setting up of a new Centrally funded Institute, Gani Khan Choudhuri Institute of Technology (GKCIET), Malda	2010-2012 (Continuing As Mentor Institute)	Rs 1.5 Crores	Completed

5	MHRD, Govt. of India	Project Coordinator & Electrical Convenor for the project titled, "Setting up of 33/11kV single line from DVC-NIT Durgapur and augmentation of electrical power network at NIT Durgapur	2009-2013	Rs 9.5 Crores	Completed
6	MHRD, Govt. of India	Project Coordinator "Developing Suitable Pedagogical Methods for Various Classes, Intellectual Calibres and Research in E-Learning" under National ICT Mission, MHRD Govt. of India	2009-2012	Rs 8 Lakhs	Completed
7	MHRD, Govt. of India	Coordinator, Main Phase of Project titled "Developing Suitable Pedagogical Methods for Various Classes, Intellectual Calibres and Research in E-Learning" under National ICT Mission	2013-till date	Rs 0.83 Crores	Completed
8	MHRD, Govt. of India	Principal Investigator, a project titled "Development of Information Communication technology (ICT) enabled High Voltage Laboratory at National Institute of Technology, Durgapur	2012-till date	Rs 7 Lakhs	Completed
9	Department of Electronics and Information Technology (DieTY), Govt of India	Principal Investigator, a project titled "Development of Personalised and Performance based E- Learning tool for existing E-resources	2013-till date	Rs 0.99 Crores	Completed
10	M/S Nevitus Control, Kolkata	Development of UHF Sensor for PD detection of High Voltage Power Apparatus	2019-2021	Rs 1.5 Lakhs	Completed
11	National Hydro Power Corporation Limited, Faridabad, Haryana	Development of PD detection system through UHF sensor for High Voltage Power Apparatus	2021-till date	Rs 2.2 Crores	Continuing
12	National Power Training Institute, Durgapur	Two days Hands on Training on High Voltage Testing at High Voltage Laboratory NIT Durgapur to Engineers from West Bengal State Electricity Transmission Corporation Limited (WBSETCL).	2019- till date	Rs 3.6 Lakhs	Continuing

14. Membership of Professional Bodies:

S.No.	Name of Professional	Grade of	Membership no. with validity
1	The Institute of Engineers (India)	FIEE, Life Member	Membership No. F-112978-5 EL/032Life Time
2	IEEE, USA	MIIEEE	Membership No. 90573363, Valued IEEE Member for 5 Years valued through 31 st December 2013

3	FOSET (Forum for Science , Engineering and Technology, WB India	Life Member	Life Member
4	ICSI, India	Life Member	Life Member

15. Administrative/ Institute Support work:

- Served as the Head, Dept. of Information Technology, for 3 Yrs. during 2006 to 2008.
- Served as the Head, Dept. of Electrical Engineering, for 2 Yrs. during July 2011 to July 2013.
- Served as Associated Dean (Academic) since 2009, to till date
- Served as Member and Deputy Centre In-charge for Central Admission committee as well as Institute admission Committee since 2005.
- Serving as Convener (Electrical Works) since 2008
- Serving as Member of Buildings & Works Committee, NIT Durgapur since 2010
- Serving as Chief Faculty Advisor of Centre for Cognitive Activities (CCA, Student Club), NIT Durgapur since 2011
- Served as Coordinator of Centrally funded Institute, Gani Khan Choudhuri Institute of Technology (GKCIET), Malda, by MHRD, Govt of India, since 2010, where NIT Durgapur is the mentor institute of GKCIET Malda.
- Serving as Branch Counsellor for IEEE Student Branch, NIT Durgapur. since 2010
- Served as Academic Council Member of Centrally funded Institute, Gani Khan Choudhuri Institute of Technology (GKCIET), Malda, by MHRD, Govt of India, since 2011, in which NIT Durgapur is the mentor institute. .
- Served as coordinator for Collaborative activities for European Nuclear Research Organisation (CERN), Geneva, Switzerland as inviting Research scientists in Sept 2008.
- Served as Chairman, Institute Automation system for Management Information System (MIS) of NIT Durgapur since September 2013.
- Served as President, Institute Innovation Cell, NIT Durgapur , nominated for MHRD, Govt of India

(Signature)

