Name: Dr. /Mr Ritu Rani De (Maity)


PHOTO

Department: Electrical Engineering

Contact Nos.: 9593713565; 9474504558

Qualifications: B.E., M.E., Ph.D. (Thesis submitted)

Designation: Assistant Professor, Level 3

VIDWAN ID: 187503

Experience (Teaching / Research / Industry, in years):
Industrial - 1 year at CFCL, Haldia**. Academic -** 15 years 10 months in BCREC, Durgapur

Date of Joining at the Present Institution: 31 January, 2005.

Examinations Cleared: NA

Qualifications Summary (Reverse chronological order):

Degree	**Institute**	**From – To**	**Subjects**
Ph.D	Jadavpur University	2013- 2021	Process Control and Soft computing
M.E.	Jadavpur University	2006-2008	M.E. in Illumination Engineering
B.E.	College of Engineering and Management, Kolaghat.	1999-2003	B. E. in Electronics and Instrumentation Engineering
Higher Secondary	St.Xavier's school, Haldia	1998	Maths, Physics, Chemistry, Biology, English, Bengali.
Madhyamik	St.Xavier's school, Haldia	1996	Maths, Physical Science, Additional Maths, Life Science, English, Bengali, History, Geography

Experience Summary (In chronological order):
Designation, Organization, Date From – Date To

Sl. No.	Designation	Organisation	Date From – Date To
1.	BOPT Apprentices - 2003(Instrumentation Engg.)	Consolidated Fibres and Chemicals Limited, Haldia	1st June 2003-31st August 2004
2.	Lecturer, Dept. of Electronics, Communication & Instrumentation Engineering	Dr. B. C. Roy Engineering College, Durgapur	31.01.2005 – 31.12.2008
3.	Sr. Lecturer, Dept. of Electronics & Instrumentation Engineering	Dr. B. C. Roy Engineering College, Durgapur	01.01.2009 – 31.06.2010
4.	Assistant Professor, Level-2, Dept. of Electronics & Instrumentation Engineering	Dr. B. C. Roy Engineering College, Durgapur	01.07.2010 – 31.12.2019
5.	Assistant Professor, Level-3, Dept. of Instrumentation and Electronics (IEE)	Dr. B. C. Roy Engineering College, Durgapur	01.01.2020
6.	Assistant Professor, Level-3, Dept. of Electrical Engineering (EE)	Dr. B. C. Roy Engineering College, Durgapur	Till Date

Specialization/Research Interest:
Soft computing, intelligent control and fuzzy systems.

Awards & Recognitions
Best paper/ scholarship/Position in university exam / awards while at industry/ other organizations etc.

- Students mentor certificate awarded for NPTEL course on Chemical Process Instrumentation, Jan-Jun 2018.

Courses taught:

B.Tech: Specify the name of the subject/s (Theory first and then practical)
Theory subjects: Digital Control System, Control Theory, Process Control-1, Remote Control & Telemetry, Microprocessor, Digital Electronics, Basic Electronics, Analog Electronics Circuits, Electronics & Measurement.

Parctical: Control Theory lab, Process Control Lab, Remote Control & Telemetry Lab, Microprocessor Lab, Digital Electronics Lab, Basic Electronics Lab, Analog Electronics Circuits Lab, Electronics & Measurement Lab.

M.Tech: specify the name of the Subject/s : NA

Online Mode of Teaching:
The Faculty member needs to specify the online teaching/ assessment method adopted. (Link to any faculty created resources for Lecture notes / PPT/ Video Lecture etc. in Google Drive / Weblink etc)

Google drive video lecture:

1. https://drive.google.com/file/d/1V2xprQmqLAYFyn46tagPF8fPhKeVq79D/view?usp=sharing
2. https://drive.google.com/file/d/1CYqW7bkYpDt7E9HSGZ2EF0Gubol-kdtF/view?usp=sharing
3. https://drive.google.com/file/d/13DDzKx6_MJmjTyz0Lfu3uqzD9McrE3LU/view?usp=sharing
4. https://drive.google.com/file/d/1vOl2TxPpqdwxrcfTrkQmcGTyhlvjpKoS/view?usp=sharing
5. https://drive.google.com/file/d/132CBYz6Jmca-ts7i-aopA1AG8T4DrVVd/view?usp=sharing
6. https://drive.google.com/file/d/14xXBBvMQMo8BgNe5xkxlWR186GK_qg0z/view?usp=sharing

https://drive.google.com/file/d/1nFEu5dWTxl4m7pNWmRvBlV7bV5vi7EOQ/view?usp=sharing

The Faculty member needs to specify the online teaching/ assessment method adopted. (Link to any faculty created resources for Lecture notes / PPT/ Video Lecture etc. in Google Drive / Weblink etc)

(i) Valves :
   1. https://youtu.be/o6gBjstVjFk 59:53 mins
   2. https://youtu.be/w5_89hBeRAA 30:35 mins
   3. Types of valve : https://youtu.be/XxAhrF7KZuE 5:32 min
   4. Valve accessories: https://youtu.be/h-tzh8l1z-M

(ii) Tuning a controller:
   1. https://youtu.be/3viD5ij60EI 21:48 mins
   2. https://youtu.be/3_WITBtNdDw 59:53 mins

(iii) PLC
   1. https://youtu.be/PLYosK87D8E 1:02:33
   2. **https://youtu.be/ObYwsUhr3Y0 15:11**
   3. https://youtu.be/mKCnNxLxfIc

(iv) DCS
   1. https://youtu.be/jXRksET5vNo DCS and difference between PLC AND DCS
   2. https://youtu.be/nlFM1q9QPJw SCADA
   3. https://youtu.be/B3YVpgs9RY4 DCS AND SCADA

Publications:

Journal:

1. **De R.R.** and Mudi R.K., "A New Self-Tuning Fuzzy PI Controller for Integrating Processes with Dead-Time," Int. Journal of Advancements in Electronics and Electrical Engineering, 2012, vol. 1, no. 2, pp. 130-134, ISSN: 2319 – 7498.
2. **De(Maity) R.R**., Mudi R.K., "Adaptive Proportional derivative controller using fuzzy logic",Int. Journal of Convergence Computing, 2016, Vol.2 ,No.2, Inderscience Enterprises Ltd., pp.144-160,ISSN online 2048-9137, ISSN print 2048-9129, DOI: 10.1504/IJCONVC.2016.082025
3. **De(Maity) R.R**., Mudi R.K., Dey C., "Comparative Performance Study of Optimal Interval Type-2 Fuzzy PID Controllers with Practical System", International Journal of Computer Sciences and Engineering, March 2020, Vol 8, Issue 3, E-ISSN: 2347-2693.
4. **De (Maity) R.R**., Mudi R.K., Dey C., "Nature Inspired Algorithm ased Optimal Type-2 Fuzzy Controller With Real-Time Validation On Servo System " International Journal of Electrical Engineering & Technology (IJEET), March-April 2020 Volume 11, Issue 2, , pp. 44–53; ISSN Print: 0976-6545 and ISSN Online: 0976-6553, Technology, 11(2), 2020, pp. 44-53, http://www.iaeme.com/IJEET/issues.asp?JType=IJEET&VType=11&IType=2.
5. **De (Maity) R.R**., Mudi R.K., Dey C., Nature-inspired and hybrid optimization algorithms on interval Type-2 fuzzy controller for servo processes: a comparative performance study, SN Applied Sciences, 2, 1292 (2020), 2020, 2523-3963 (print), 2523-3971 (online) DOI-https://doi.org/10.1007/s42452-020-3024-5
6. **R.R. De (Maity)**, R.K. Mudi, and C. Dey, Stable Optimal Self-tuning Interval Type-2 Fuzzy Controller for Servo Position Control System, *Int. Journal of Automation and Control*, (**Inderscience**) (Accepted, under publication).

7. **R.R. De (Maity)**, R.K. Mudi, and C. Dey, Lyapunov Approach based design of a Gain Adaptive Interval Type-2 fuzzy controller for Servo systems, *Journal of Intelligent and fuzzy systems*, (**IOS Press)**, ISSN print 1064-1246, ISSN online 1875-8967, Vol. 40, No.3, pp. 4187-4205, March 2021, DOI: 10.3233/JIFS-200802.

Conference:

1. **De R. R.,** Mudi R.K., and Pal A.K., "A PD-Type Self-Tuning FLC for Second-order Systems with Dead-time," Proc. Int. Conf. on Advanced Communication, Control and Computing Technologies – ICACCCT-2012, Ramanathapuram (India), pp. 452-456, August 23-25, 2012. (IEEE Catalog Number: CD:CFP1221T-CDR; ISBN:978-1-4673-2047-4)
2. Mudi R.K. and **De R.R.,** "A New Self-tuning Fuzzy Proportional-Derivative Controller for High-Order Systems," Proc. 2012 Third Int. Conf. on Emerging Applications of Information Technology – EAIT-2012, Kolkata (India), pp, 24-27, November 29 – December 01, 2012. [978-1-4673-1827-3/12/$31.00 ©2012 IEEE]
3. **De R.R**. and Mudi R.K., "A Robust Self-Tuning Fuzzy Controller for Integrating Systems," Proc. 2nd Int. Conf. on Power, Control and Embedded Systems – ICPCES-2012, Allahabad (India), pp. 519-524, December 16-19, 2012. [IEEE Catalog Number: CFP1209L-CDR, ISBN No. 978-1-4673-1049-9/12/$31.00 ©2012 IEEE]
4. De R.R. and Mudi R.K., "A New Self-Tuning Fuzzy PI Controller for Integrating Processes with Dead-Time," Proc. 2nd Int. Conf. on Advances in Computing, Control and

Communication – CCN-2012, New Delhi-NCR (India), pp. 24-28, June 16-17, 2012. (ISBN: 978-981-07-2579-2 doi:10.3850/978-981-07-2579-2 CCN-426)

5. Mudi R.K. and **De R.R.**, "A Noble Fuzzy Self-tuning Scheme for Conventional PI Controller." Proc. 2012 Int. Conf. on Frontiers of Intelligent Computing: Theory and Applications – FICTA, Bhubaneswar (India), AISC - 199, Springer-Verlag, pp. 83-91, December 22-23, 2012. DOI: 10.1007/978-3-642-35314-7_11
6. Pal A.K., Mudi R.K., and **De R.R.**, "A Non-Fuzzy Self-tuning Scheme of PD-Type FLC for Overhead Crane Control," Proc. 2012 Int. Conf. on Frontiers of Intelligent Computing: Theory and Applications – FICTA, Bhubaneswar (India), AISC - 199, Springer-Verlag, pp. 35-42, December 22-23, 2012. DOI: 10.1007/978-3-642-35314-7_5
7. **De Maity R.R.,** and Mudi R.K., "PI Controller with Fuzzy Logic Based On-line Variable Reset-rate", 2013 International Symposium on Computational and Business Intelligence (ISCBI-2014),Aug-24-26, 2014. DOI:10.1109/ISCBI.2013.35Corpus ID: 17616624
8. **De Maity R.R.** and Mudi R.K.," Fuzzy Self-Tuning of Conventional PID Controller for High-order Processes", Proc. 2013 Int. Conf. on Frontiers of Intelligent Computing: Theory and Applications – FICTA. ISSN 2194-5357, ISSN 2194-5365 (electronic), ISBN 978-3-319-02930-6, ISBN 978-3-319-02931-3(eBook)DOI 10.1007/978-3-319-02931-3.
9. **De Maity R.R.** and Mudi R.K., "Fuzzy Logic Based High Performance PID Controller", IEEE Sponsored 8th International Conference on Intelligent Systems and Control (ISCO), 10-11 January, 2014. Electronic ISBN:978-1-4799-3837-7, **DOI:** 10.1109/ISCO.2014.7103941.
10. **De Maity R.R.** and Mudi R.K., "Fuzzy Rule-based Adaptive Proportional Derivative Controller, Springer International Proc. of 3rd Int. Conf. on Frontiers of Intelligent Computing(FICTA)2014-Vol-1,Advances in Intelligent Systems and Computing 327,pp-193-200. DOI: 10.1007/978-3-319-11933-5_22
11. **De(Maity) R.R.,** Mudi R.K., De C."Real-time Evaluation of an Interval Type-2 Fuzzy PID Controller on Servo Position Control System", 2018 Fifth International Conference on Emerging Applications of Information Technology (EAIT),Kolkata, , 12-13 January, 2018. published in IEEE Xplore,September,2018, Electronic ISBN: 978-1-5386-3719-7, Print on Demand(PoD) ISBN: 978-1-5386-3720-3 DOI: 10.1109/EAIT.2018.8470410
12. Banerjee S., Das A., Singh A., Choudhary D., **De(Maity) R.R.,** Roy S., De D., "Low Cost Solar Powered Wheel chair",2nd International Conference on Communication, Devices and Computing (ICCDC 2019),14-15 March 2019,2019 Mili Publications.

Book:

NA

Book Chapter:

NA

Supervision of Ph.D/M.Tech / B.Tech Projects:

For Ph.D: NA

Projects:

Name of the students	Univ. Roll No.	Name of the Supervisor	Title of the project for B. Tech, Year
Sonali Layek	12000512054	Prof. Ritu Rani De(Maity)	Footstep Power generation system using piezoelectric Crystal, 2016
Subinita Bhakta	12000512057		
Ranjana Kumari Gupta	12000512044		
Aakash gaurav	12000513001	Prof. Ritu Rani De(Maity) Prof. Santi Gopal Pain	Arduino based speed control of DC Motor, 2017
Aditi Maitra	12000513003		
Diksha Singh	12000513014		
Hemant Kumar	12000513016		
Moumita Roy	12000513028		
Jitendra Kumar	12000513017		
KASTURI SAHA	12005514008	Prof. Ritu Rani De(Maity)	Temperature sensitive on-off control for cooling, 2018
AMIT KUMAR	12005515002	Prof. Ritu Rani De(Maity)	Automatic Water Level indicator and pump controller, 2019
NIKHIL SINGH GAUTAM	12005515019		
VIDYA BHUSAN JHA	12005515038		
Atanu Roy	12005516031	Prof. Ritu Rani De(Maity)	Solar Powered Robotic Arm for Sewage cleaning using Arduino, 2020
Aditya Vikram Paul	12005516038		
Ankan Paul	12005516036		
Raj Shrikanth Rao	12005516015		

Invited Lectures:

NA

Participation in seminar/conference/symposium/workshop/discussion meeting

- **Conference**: Presentation in: –

1. *CCN-2012*, 17 June, 2012, Universal Association of Computer and Electronics Engineers at NCR-New Delhi, India.
2. *EAIT-2012*, 30 November-December 01, 2012, Indian Statistical Institute,Kolkata,
3. *ICPCES-2012*, 17-19 Dec, 2012, MNNIT Allahabad.
4. *EAIT-2018,* Computer Society of India, 12-13 January, 2018, Indian Institute of Engineering Science and Technology, Shibpur, Kolkata.

- **Workshop**: Participation in 'Technical Workshop on Recent Trends in a Machine Intelligence, Mining, and soft computing techniques and its impact on Research and Development', 23-24 Nov., 2013,BCREC,Durgapur.
- **SEMINAR**: Advances in Nano-Satellite Technology", 4 November,2015, Dr. B.C/.Roy Engineering College.

Participation in faculty development programmes

- Course : DCS & PLC Overview, 2015, 24.03.2015-28.03.2013,Yokogawa Technical School.
- TPSDI Webinar: Opportunities in Solar - Becoming #aatmanirbhar (23rd June 2020 @11:30), TPSDI-Maithon.
- Virtual Workshop, 26.06.2020 through Zoom platform, TCS.

Organization of events (Dr. B. C. Roy Engineering College)

Name of the event, Date, Year

- Carrying out responsibilities as member of different committees like
  IEEE Conference: NCETSTEA 2020,
  Sports 2016-2020.,
  Saraswati Puja-2019,
  College cultural fest-2018, 2020
  and Tech Fest 2017
- Coordinating a 3-days workshop on basic programming using Python, FOSSEE project, IIT Bombay, 2019.

Participation in administrative committees (selected)

Name of the post (Convener/Joint Convenor/Member secretary/Co-ordinator etc.), Name of the committee, year

1. Departmental Training Placement Co-ordinator, 2018-19, 2019 – 20, 2020 – 21
2. Project Coordinator-20/06/2019.
3. Library committee member, 13/1/2020

Project Ideas Submitted to Govt. Agencies/ On-going Projects / Research Ideas under preparation & execution

NA

Membership of professional bodies: IEEE, IETE, IEI, CSI, MGMI etc.

NA