Curriculum Vitae

Dr. Geeta Mongia
Professor
Department of Electronic Science
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Subhash Nagar
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NATIONALITY	**Indian**
MARITAL STATUS	**Married**
DATE OF BIRTH	**July 10,1971**

EDUCATIONAL QUALIFICATION

- B.Sc.(H) Electronics, year 1991 from Rajdhani College, University of Delhi, with first Division
- M.Sc. Electronics, year 1993 from Department of Electronic Science, University of Delhi, with first Division
- M.Phil. Electronics, year 1994 from Department of Electronic Science, University of Delhi, with first Division, Topic of Dissertation: To find the incubation time of binary chalcogenides.
- Doctor of Philosophy, year 2004, from Department of Electronic Science, University of Delhi, Topic of Thesis: Characterization of Amorphous Quaternary (AIST) system for phase change optical recording media

QUALIFIED NATIONAL ELIGIBILITY TEST FOR LECTURESHIP 1997

WORK EXPERIENCE

- **Promoted as Professor since July 2021 at BCAS, University of Delhi**

- 24 September 1997 till date working as permanent faculty at Bhaskaracharya college of Applied Sciences (BCAS), University of Delhi.

- 24 July 1997 to 23 September 1997 worked as adhoc faculty at Bhaskaracharya college of Applied Sciences, University of Delhi
- 22 August 1995 to 30 April 1996 worked as adhoc faculty at Acharya Narender Dev college, University of Delhi

AWARDS AND HONOURS

- **Conferred with 'Best Teacher Award' from Department of Higher Education, Govt. of NCT Delhi, 2013-14. This award started by Govt. of NCT Delhi in year 2011-12.**

- **Qualified UGC-NET in year July'1996**

- **Awarded a certificate of excellence by Lions Club Delhi on September 11, 2005**

- **Received travel grant from UGC for oral presentation at conference held at San Francisco, USA, organized by SPIE in 2001.**

COURSES TAUGHT

Undergraduate students (Theory and Practicals)

- Semiconductor Devices (NEP)
- Photonics
- Analog Electronics I (NEP)
- Electronic Circuits
- Digital System Design
- Circuit Theory and Network Analysis
- Electric Machines

Total number of Books Authored: 02

1.Geeta Bhatt & Geeta Mongia (Author), 2012,
Experiments Based on Analog and Digital Electronics
I K International Publishing House,
ISBN-10 : 9789381141724 ISBN-13 : 978-9381141724

2. Inderbir Kaur & Geeta Mongia (Author), 2016,

Digital Electronics: Laboratory Manual, Alpha Science Intl Ltd, ISBN-10 : 1783322012 ISBN-13 : 978-1783322015

RESEARCH ACCOMPLISHMENTS

RESEARCH GUIDANCE: 01 Student registered (2021)

MEMBER NATIONAL/INTERNATIONAL PROFESSIONAL BODY

- Member of The International society for Optical Engineering SPIE
- Member of Semiconductor Society of India., membership No. 249
- Member of The Indian Science Congress Association; Membership No. L26364

Total number of research publications: 31

RESEARCH OBJECTIVES

- **Bio-Electricity generation for sustainable Environment: Green Energy Initiative**

Working for sustainable environment using Microbial Fuel Cell (MFC) technology. MFC is an efficient technology which has a practical aspect of conversion of chemical energy in organic compounds directly to electrical energy through degradative activities of microorganisms. MFCs can be used in wastewater treatment plants with simultaneous generation of electricity.

Currently working on Project:

- To prepare Bio-film for electrodes using novel polymer material for efficient generation of electricity.
- To study the properties of the Bio-film prepared.
- Optimize various parameters for efficient generation of electricity.

Other Research Interest

- **Optical Data Communication**

Minor Research Project undertaken by students:

Data Transmission through Light Fidelity (Li-Fi) :

The objective is to meet the demand for fast and secure wireless communication. This is a relatively new technology with great potential. Light fidelity(Li-Fi) has a data range of Gigabits per second. Li-Fi is used for optical communication through LEDs.

- Currently working on the practical approach to light fidelity and to design and analyse the Li-Fi system for transmitting and receiving of data for underwater communication.
- Optimization of the various parameters such as signal to noise ratio, height etc. to enhance the performance of the Li-Fi system is under work.
- Developing a mathematical model for improvement of SNR filters in transceivers.

PROJECT UNDERTAKEN

Successfully completed project on “Low Cost Electricity Generation using Bio-Photovoltaic Technology- a Green Energy Initiative” Code : BCAS-201 (Rs. 5.50 lakh). This project is under the DU Innovation project scheme(2013-14).

Supervisor for B.Tech students on a project entitled “Light Fidelity: A helping hand in Digital India Initiative” (2016-17).

Successfully completed project titled “Light Fidelity: A new approach for high speed data transfer **(2019-20**). This project is to promote research at undergraduate level. Five undergraduate students actively worked on this project.

Successfully worked and completed two year(2020-2022): project by Four undergraduate students titled :
In the year (2020-2021) following work was accomplished

- Designing a prototype for high speed data transfer and exploring the potential of Li-Fi in the domain of wireless optical communication
- Mathematical model developed for optimization of its various parameters

In the year (2021-2022) following work was accomplished

- Mathematical modeling for improvement of SNR in Li-Fi filter
- Simulation of audio and video transfer and hardware implementation of audio transfer using Li-Fi

Short term minor projects for undergraduate students based on Electronic Circuit design using simulation software/Hardware. Nineteen undergraduate students participated and successfully completed 2020-21.

Two students successfully completed Short term minor projects in 2021-22.

.**LIST OF PUBLICATIONS**

1. “Mathematical modelling for high performance communication using next generation Light-Fidelity (Li-Fi) Technology,” IOSR Journal of electronics and communication engineering (IOSR-JECE), vol. 19, no. 3, June 2024, pp. 33-36. DOI 10.9790/2834-1903013336.

2. “Catalytic effect of acetate (C2H3O2) on coulombic efficiency and bio-electricity generation from wastewater sample prepared from domestic kitchen waste using dual chamber microbial fuel cell technology”, Journal of Applied and Natural Science, ISSN : 0974-9411 (Print), 2231-5209 (Online), 14(2), June 2022, pp 652-659.
3. “Optimization of composition of quaternary alloy-based film and effect of Annealing for phase change optical recording Material” International Organization of Scientific Research, e-ISSN : 2278-1676, p-ISSN : 2320–3331, Volume: 16 Issue: 4 Series-1,July-Aug 2021, pp 25-29.
4. “Survey-Based Analysis on Solar Energy Awareness and Designing of Bio-photovoltaic Cell using Algae-A Green Energy Initiative”, International Journal of Science and Research (IJSR), ISSN: 2319-7064, Volume 10 Issue 7, July 2021,pp 1002-1006.
5. “Unlocking the Potential of Li-Fi for Next-Generation Wireless Communication”, International Journal of Science and Research, ISSN: 2319-7064, Vol.10, issue 6, June 2021.pp 480-485. DOI: 10.21275/SR21603224532.
6. “A Comprehensive Review of the Different Methods and Materials for the Construction of MFCs and their Effect on the Performance of MFC”, International Research Journal of Engineering and Technology,e-ISSN: 2395-0056, Vol.8, issue 5, May 2021, pp 4402-4413.
7. “Design and Analysis of Li-Fi system”, International Journal of Research and Technology , ISSN no. 2349-6002, Vol.6, issue 6, November2020, pp94-100.
8. “A Practical Approach to Light Fidelity”, International Journal for Innovative Research in Multidisciplinary Field, ISSN no. 2455-0620, Vol.3,issue 6, June 2017, pp266-270.
9. “An approach for electricity generation using Microbial Fuel Cell Technology: A Green Energy Initiative'', Journal of Energy Research and Environmental Technology, ISSN no. 2394-1561, Vol.3, issue 2, April-June, 2016, pp 127-130
10. “A short review on Microbial Fuel Cell Technology and A proposed approach for Generation of Electricity using waste water Treatment”, International Journal for Scientific Research and Development, October 2015, pp 9-11.

11. “Optical Properties and Average Flow of Energy in AgInSbTe Film used for Phase Change Optical Recording”, J. Optical Engg. Published Nov. 2003.Vol 42(11), PP3274-3279.
12. “Crystallization Kinetics in (AgInSb)x(In1-y Sby)1-x Films used in optical Data storage”, J. of Material Science of Science, Springer US,March 2006, vol. 41, no. 8, pp. 2477-2482.
13. “Study of Crystallization Behavior of Ag-In-Sb-Te Phase Change Optical Recording Film” J. of Optical Engineering Published January 2003. PP vol 42(1), PP 148-151.

CONFERENCE PROCEEDINGS

1. Paper presentation on “Review on Nanomaterials for Advanced Energy Storage Systems in Critical Infrastructure and National Security Applications” in International Conference on CBRNE Related Threat to National Security and Safety- Antiterrorism Measures for Safe Environment (ICCTNSS-2026) held at the Department of Chemistry, University of Delhi, Delhi, India on March 12-13, 2026,
2. Paper Presentation on “Exploring the Potential of Microbial Fuel Cell-Based Biosensor in Carbon Monoxide Detection” in International Conference on "FRONTIERS IN ADVANCED MATERIALS, NANOTECHNOLOGY, COMPUTING, AND ARTIFICIAL INTELLIGENCE-BASED DEVICES" for Environmental and Sustainable Development Organized by National Seminar Committee, Motilal Nehru College, University of Delhi,13th - 15th March 2026.
3. poster presentation entitled "MFC-based Biosensor for Hazardous Carbon Monoxide Detection: "A Solution towards Efficient and Sustainable Toxicity Detection" in the National Conference on "Cultivation, Post-Harvest Processing, Value Addition, and Innovative Packaging of Indigenous Medicinal Plants: Enhancing Shelf Life, Standardization, and Livelihoods" organized by Bhaskaracharya College of Applied Sciences, University of Delhi from February 17th to 18th, 2026. Sponsored by NMPB.
4. Presented a paper “Synthesis of Silver nanoparticles and study its impact on the efficiency of Microbial Fuel Cell” in 2nd International Conference on Advanced Materials for Green Chemistry and Sustainable Environment, jointly organized by K.R. Mangalam University, Gurugram & Shivaji College, University of Delhi during 20-21 March 2025.
5. presented a paper “Microbial Fuel Cell Biosensor: Leaveraging Electroactive Microorganisms for Carbon Monoxide Sensing” in International Seminar on Strengthening Social Security programs in India with special reference to Drinking water and Solar energy: A Pathway to Viksit Bharat @2047 sponsored by ICSSR and organized by IQAC, Lakshmibai College University of Delhi in

collaboration with Department of Economics, University of Allahabad, during 06-07 February, 2025.

6. Presented poster “Microbial community analysis in Biosensor for Hazardous Gas Sensing Using MFC Technology” in 5th World environment summit2024, organized by Environment and social Development Association (ESDA) in association with B.R.Ambedkar College, DU, during 16-18 November,2024.
7. Presented a paper “Enhancing Bio- Electricity Generation through amalgamation of biofilms and Microbial Fuel Cell Technology- A Green Energy Initiative” in INDIA INTERNATIONAL SCIENCE FESTIVAL (IISF)-Young Scientist Conference 2023, organized by Government of India's Ministry of Science & Technology, Ministry of Earth Sciences, Department of Space, Department of Atomic Energy and Government of Haryana in association with Vijnana Bharati (VIBHA), during 17-20 January,2024.
8. Presented a paper “Effect on Bio-electricity generation for various types of waste water using MFC Technology- A Green Energy Initiative” in World environment summit 2022, organized by Environment and social Development Association (ESDA) Delhi in association with Center for the study of regional Development, JNU, during 15-16 October,2022.
9. Presented a paper “Designing a prototype of a sediment microbial fuel cell (SMFC) for electricity generation: A green energy Initiative” in 2nd National Conference on “Clean and Green Energy: The Chemical and Environmental Aspects”, organized by Department of Chemistry, Bhaskaracharya College of Applied Sciences, University of Delhi, during September 26-27,2019.
10. Presented a paper “Green Energy Generation and Waste Water Treatment Using Microbial Fuel Cell Technology”, in National Conference on “Clean and Green Energy: The Chemical and Environmental Aspects, organized by Department of Chemistry, Bhaskaracharya College of Applied Sciences, University of Delhi, during February, 16-17,2017.
11. Presented a paper “Algae : Power plants of Future”, in UGC sponsored national conference on Recent trends in Instrumentation and Electronics (RTIE-2015), Jan. 5-6, 2015 held at Shaheed Rajguru college of Applied Sciences for women, University of Delhi, New Delhi.
12. Presented a paper “Bio-electricity production using Algae- A Brighter Road Ahead…”in UGC sponsored National Conference on Striving and Thriving towards diffusion of student-driven research in science and technology for inspired learning, October 16-17, 2014 at Maharaja Agrasen College, University of Delhi, New Delhi.
13. Presented a paper “Bio-Photovoltaics (BPV) : Harnessing Green Energy for Future Technologies” in National Conference on Nanotechnology and Renewable Energy (NCNRE-14), April 28-29, 2014 organized by Department of Applied Sciences and Humanities, Faculty of Engineering and Technology, Jamia Millia Islamia, New Delhi.

14. Presented a paper “Microstructural Analysis of Quaternary Alloy Based Film for Optical Data storage” International Conference on Advanced optical data storage 25-31 Jan 2003 at San Jose USA.
15. “Crystallization study of Ag-In-Sb-Te Optical recording film” Java/Jini Technologies and High-Performance Pervasive Computing, Proceedings of SPIE Vol. 4863 (2002),pp 121-128 .
16. “DOW Optical Disk with a New Quaternary System”. SPIE, Optical Engineering SPIE, Optical Engineering Vol.2 (2002), pp1121-124.
17. “New Quaternary Material for High Speed Phase Change Optical Recording” The International Society of Optical Engineering (SPIE) July 7-11, 2002.
18. “Potentiality of AgInSbTe Phase Change recording material” National conference on Thermo physical properties (NCTP-2002). September 19-21, 2002, at Jaipur.
19. “DOW Optical Disk with a New Quaternary System” International Workshop on the Physics of Semiconductor Devices (IWPSD) December 11-15-2001.

MAJOR ADMINISTRATIVE ACCOMPLISHMENTS:

- **First member secretary, Internal Quality Assurance committee (IQAC) of the college during 2016-17, 2017-18 and 2018-19. NAAC team visited college during this period and College got its first NAAC ‘A’ grade. Many reforms were undertaken by IQAC and organized following activities for the first time in college for teaching as well as for non-teaching members:**

2. Organised **one week Faculty Development Programme** under IQAC on “Research Methodology” from **16-22 December 2017**.
3. Coordinator in eProcurement Training for faculty and non-teaching staff organised under IQAC of the college on 7-8 November 2017
4. Organised **Faculty Development Programme** under IQAC on “ Administrative Reforms to raise the Quality of Educational Institutions and e-Procurement” on March 28,2017.
5. Organised **Skill Development Workshop** under IQAC for **non-teaching** staff of the college on March 27,2017.

- **External Member Internal Quality Assurance committee (IQAC) of Rajdhani College, University of Delhi, for one year from October 2017.**

- **Convenor, Women Development Cell, from last four Years 2018-2022.**
    1. Organised an **Outreach programme for the first time Self Defense Training program in collaboration with Delhi Poice for fifteen days from 2nd to12th July, 2018.** This programme was held for girls/women

residing in nearby societies of the college. The programme elicited participation from a large number of students

2. After having overwhelming response, **Self Defense Training program in collaboration with Delhi Poice for fifteen days from 2nd to12th July, 2019 was held again.** This outreach programme was highly appreciated by women and girls of various societies.

3. **International Women's Day was celebrated for the first time in college 2018-19.** Organized a mega event for the first time in college to celebrate International Women's day on **March 7-8, 2019, March 8, 2020**. In 2020, **Dr. Rajul Desai** , member National Commission for Women **(NCW)** was chief guest of the function.

4. And also on **March 8, 2021, the celebrations of IWD were done in HYBRID mode for the first time.** Our chairperson of the college Ms. Madhuri and our chief guest graced the occasion at AV room of the college along with some faculty and students. However event was LIVE at Google MEET.

- **During period 2015-17, organized STAR NIGHT for the First time in the college, as convenor Extracurricular Activities (ECA).** It was a major success and was highly appreciated by faculty and students.

OTHER ACADEMIC AND ADMINISTRATIVE ASSIGNMENTS

Along with above mentioned activities, other responsibilities are mentioned below:

- Teacher-in-Charge, Department of Electronics 2019-20 & 2020-21
- Convenor, Department moderation committee 2019-20 & 2020-21
- Member academic committee and time table committee 2019-20 & 2020-21
- Deputy Superintendent Examinations, 2018-19
- Convenor, Extracurricular Activities for academic year 2015-16 & 2016-17
- External Member, Appraisal committee for recognition of meritorious teachers,Deen Dayal Upadhyaya College, University of Delhi, 2017
- Public Information Officer of college for one year from January 13,2011
- Bursar of the college for one year from November 01,2009
- Secretary, Staff Council 2012-13 & 2013-14.

- Expert member on interview board for TGT post ,Kendriya Vidyalya Sangathan 2011
- Member, Faculty of interdisciplinary & Applied Sciences, University of Delhi, South Campus from March 30,2007 for a period of three years

REFRESHER/ORIENTATION COURSES UNDERTAKEN

- Three week refresher course in Physics & Electronics at CPDHE, University of Delhi from Oct 03, 2001-Oct 23, 2001.
- Three week refresher course in Computer Science at academic Staff College, JamiaMillia Islamia from Dec 14,2005-Jan 03, 2006.
- Four week orientation course in Natural Sciences conducted by Jawaharlal Nehru University from Nov.11, 2002-Dec 06, 2002.
- Three week refresher course in Physics at CPDHE, University of Delhi from March 12-31, 2007.

OTHER ACTIVITIES ORGANIZED
(Workshop/Seminar/Conference)

1. Organised a **webinar** under women development cell on " Cyber Crime against women and its redressal" June 10,2020. This webinar was in collaboration with National Commission for women
2. Convenor, organizing **International Webinar Series** on Technological Trends for the next Generation held during **June 1-5, 2020** through Google Meet,Department of Electronics, Bhaskaracharya College of Applied Sciences, University of Delhi.
3. Organized an **educational visit** to Vigyan Samagam, National Science Center, Pragti Maidan,for students of the Department on February14,2020.
4. Coordinator of **National Workshop** on "Printed Circuit Board Designing". This was held in collaboration with Tevatron technologies Pvt. Ltd. held during March 24-26, 2015 at Bhaskaracharya College of Applied Sciences.
5. Coordinator of **National Workshop** on "VLSI designing using Verilog coding". This was held in collaboration with JBT Tech India (VLSI Design Solutions and Project Training Company) held during July 16-18, 2013 at Bhaskaracharya College of Applied Sciences.
6. Member organizing committee of "**National Conference** on E-Waste Sustainability: Needs and Solutions for its Management. It was held on March 7-8, 2013, at Bhaskaracharya College of Applied Sciences. This workshop was in collaboration with GIZ-IGEP (Indo German Environment Partnership).

7. Co-Coordinator of workshop on “Experiments and Research Applications with National Instrument LabVIEW” held during February 2-3, 2012 at Bhaskaracharya College of Applied Sciences
8. Organized **National Conference** on “Sustainable Management of E-Waste” on our Campus from 14th to 15th December, 2010. Helped organize funding, speakers, promotion, conducting of events etc. The Conference had a lot of participation from faculty from different universities, Industry and students.
9. Organized **“National Seminar** On “Management Of Waste From Electronics And Renewable Energies” on 29 January 2010. This seminar was organized keeping in mind that there is an imperative need to address on a national level the uncertainties regarding “when, where, and how” to manage, reuse and dispose of hazardous, harmful E-waste. The objective of the seminar was to overcome the limited awareness regarding e-waste disposal methods generated from Electronics and renewable energy resources.

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