Dr Inderbir Kaur

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Bhaskaracharya College of Applied Sciences (University of Delhi)
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PROFESSIONAL SUMMARY

- **More than 27 years of teaching experience.**
- **Teaching in Bhaskaracharya College of Applied Sciences, University of Delhi, since September 25, 1997.**
- Worked as Ad hoc lecturer at multiple Delhi University Colleges:
  - Maharaja Agrasen College (August1997 to Sep.1997), University of Delhi
  - Rajdhani College (August1996 to December1996), University of Delhi
  - SGTB Khalsa College (August1995 to September1995), University of Delhi
  - Gargi College (August1994 to February1995), University of Delhi

EDUCATION

Research Degree

- Ph.D. (Electronics) from Department Electronic Science, University of Delhi South Campus (1997).

Title of Thesis: "Electrical and Optical Properties of Tertiary butyl Phosphine Doped N- Type Hydrogenated Amorphous Silicon".

Academic Qualifications

- M.Sc. (Physics with specialisation Electronics) from Department of Physics, University of Delhi (1991)
- B.Sc. (H) (Physics) from Hansraj college, University of Delhi (1989).

Qualified NET for Junior Research Fellowship and lectureship conducted by CSIR-UGC (1991).

TEACHING INTEREST

- Digital Electronics
- Operational Amplifiers
- Instrumention Electronics
- Neural Networks

RESEARCH INTERESTS

- Nanomaterials
- Green energy

BOOKS PUBLISHED

- Published one books titled “Digital Electronics Laboratory Manual” (ISBN NO.978-81-8487-489-1), Narosa Publications.

RESEARCH PUBLICATIONS (20)

Scopus Indexed: 12; UGC Listed: 02; Peer Reviewed: 06

1. Chaudhary, Vishal, Meenal Dhall, Rashi Thakur, Leon Roets, Purnima Dhall, Vivek Chaudhary, Ajeet Kaushik, Akash Gautam, **Inderbir Kaur,** and Vandana Batra, (2024), An analytical study on the lower enrolment of female physicists in research and development in India, *SN Social Sciences* 4, no. 2, 29.
2. **Kaur, Inderbir,** Vandana Batra, Naveen KR Bogireddy, Jasmina Baveja, Y. Kumar, and V. Agarwal, (2024), "Chemical and Green Precursor Derived Carbon Dots for Photocatalytic Degradation of Dyes." *iScience*, 27, 108920.
3. Mishra, R. V., T. Gupta, V. Batra, and **I. Kaur.** 2024. “Design of Home Automation System with Emergency Control”. *Journal of Scientific Research* 16 (1):145-59. https://doi.org/10.3329/jsr.v16i1.66198.
4. **Kaur, Inderbir**, Vandana Batra, Naveen Kumar Reddy Bogireddy, Yogesh Kumar, and Vivechana Agarwal. "Carbon Dots as a Novel Detection Material for Food Additives and Pesticides: A Mini Review." *Microscopy and Microanalysis* 29, no. Supplement_1 (2023): 4-8.
5. Aniket Mukherjee, Manjeet, **Inderbir Kaur**, Vandana Batra (2023), Advancements of the ground-based radio telescopes in India, *International Journal of Scientific and Research Publications*, 13,2.
6. Torres Landa, Simei Darinel, **Inderbir Kaur**, and Vivechana Agarwal. (2022), *Pithecellobium dulce* Leaf-Derived Carbon Dots for 4-Nitrophenol and Cr(VI) Detection, *Chemosensors* 10, no. 12, 532.
7. **Kaur, Inderbir**, Nithya Priya, and Vandana Batra (2023), Prospects of Methylene Blue degradation using green synthesised ZnO nanostructures, *Materials Today: Proceedings* 73 (312-315).
8. **Kaur, Inderbir**, Vandana Batra, Naveen Kumar Reddy Bogireddy, Simei Darinel Torres Landa, and Vivechana Agarwal, (2023), Detection of organic pollutants, food additives and antibiotics using sustainable carbon dots, *Food Chemistry* 406, 135029.
9. Mishra, R. V., T. Gupta, A. Patel, R. Kumar**, I. Kaur,** and V. Batra (2023), Transforming Conventional Switching Systems to Cost-Effective, Adaptable, Energy-Efficient Smart Switching Systems, *Journal of Scientific Research* 15, 1.
10. Batra, Vandana, **Inderbir Kaur**, Diksha Pathania, and Vishal Chaudhary (2022), Efficient dye degradation strategies using green synthesized ZnO-based nanoplatforms: A review, *Applied Surface Science Advances* 11,100314.
11. **Kaur, Inderbir**, Nithya Priya, Akansha Kumari, Vishal Chaudhary, and Vandana Batra (2022), Comprehensive study on Indian plant extracts mediated biocompatible ZnO nanostructures: a green initiative. *ECS Transactions* 107, 19443- 19452.

12. Landa, Simei Darinel Torres, Naveen Kumar Reddy Bogireddy, **Inderbir Kaur**, Vandana Batra, and Vivechana Agarwal (2022), Heavy metal ion detection using green precursor derived carbon dots, *Iscience* 25, no. 2
13. Geeta Mongia and **Inderbir Kaur** (2021), 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,* 10, 100 2- 1006.
14. Geeta Mongia, **Inderbir Kaur,** Ruchi Gulati Marwah & Aarti Malyan (2021), 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* 8, 440 2- 4413.
15. Ajay Agarwal, Pawan Kumar, **Inderbir Kaur**, Ruchi Gulati Marwah, Geeta Mongia and Avinashi Kapoor (2016), An Approach for Electricity Generation using Microbial Fuel Cell Technology: A Green Energy Initiative, Journal of Energy Research and Environmental Technology, 3,127-130.
16. Mehra, R. M., **Inderbir Kaur,** P. C. Mathur, and P. C. Taylor (1998), Study of photoconductivity in TBP doped n-type hydrogenated amorphous silicon using Argon as carrier gas, *Journal of non-crystalline solids,* 227, 243-247.
17. Mehra, R. M., **Kaur, I.**, & Mathur, P. C. (1997). Effect of Heavy Doping on Dark Conductivity of TBP Doped n-Type a-Si:H Films. *Solid State Phenomena*, 55, 180–182.
18. R.M Mehra, **Inderbir,** Jasmina, P.C Mathur (1997), Tailoring refractive index of a-Si:H by TBP (C4H11P) doping, *Journal of Non-Crystalline Solids,* 209,188-192.
19. Mathur, P. C**., Inderbir**, Jasmina, & Mehra, R. M. (1996). Physics of Device Grade Amorphous Silicon. In *Materials Science Forum* (Vols. 223–224, pp. 221–228). Trans Tech Publications, Ltd.
20. R.M. Mehra, Gurinder**, Inderbir**, Jasmina, Amit Pundir, P.C. Mathur (1993), Dark and photoconductivity of TBP doped n-type a-Si:H, *Journal of Non-Crystalline Solids*, 164, 517-520

RESEARCH PROJECTS UNDERTAKEN

1. Successfully completed a Project titled "Clean Electricity Generation from Waste Water Samples Collected from Delhi- NCR using Microbial Fuel Cell Technology- A green energy initiative" This project was a joint venture of Department of Electronics and Department of Microbiology of Bhaskaracharya College of Applied Sciences. The project was under DU Innovation project scheme (Rs. 5 lakh) (2015-16).

2. Successfully completed a Project titled "Low-Cost Electricity Generation using Bio-Photovoltaic Technology- a Green Energy Initiative". This project was a joint venture of Department of Electronics and Department of Microbiology of Bhaskaracharya College of Applied Sciences. The project was under DU Innovation project scheme (Rs. 5.50 lakh) (2013-15).

PAPERS PRESENTED IN CONFERENCES

1. Bio-Photovoltaics (BPV): Harnessing Green Energy for Future Technologies, Paper presented in poster presentation category, held at National Conference on 'Nanotechnology and Renewable Energy (NCNRE-14)' organized by Jamia Millia Islamia (2014).
2. Bio-Electricity Production Using Algae – A Brighter Road Ahead, National Conference on Striving and Thriving towards Student Driven Research in Science and Technology for Inspired Learning, organized by Maharaja Agrasen College, University of Delhi (2014).
3. Algae: Power Plants of Future, National Conference on "Recent Trends in Instrumentation and Electronics (RTIE-2015), organized by Shaheed Rajguru College of Applied Sciences for Women, University of Delhi (2015)
4. A Short Review on Microbial Fuel Cell Technology and A Proposed approach for Generation of Electricity using Waste Water Treatment, National Conference on Student – driven Research for inspired Learning in Science and Technology, organized by Maharaja Agrasen College, University of Delhi (2015).
5. Designing a Prototype of a Sediment Microbial Fuel Cell (SMFC) for Electricity Generation: A Green Energy Initiative, National conference on "Clean and Green energy: The Chemic al & Environ mental Aspects" organized by Department of Chemistry, Bhaskaracharya College of Applied Sciences, University of Delhi (2019).
6. "Converting manual switching systems to energy efficient smart switching systems: An Environment initiative", Third International Conference on Entrepreneurship, Research and Innovation for Environ mental Sustain ability & Planetary Health, organized by Research Cell Bhagini Nivedita College, University of Delhi (2022)
7. Design of a combustible gas sensor with an alert system: An environment safety initiative, Third International Conference on Entrepreneurship, Research and Innovation for Environ mental Sustain ability & Planetary Health, organized by Research Cell Bhagini Nivedita College, University of Delhi (2022).

INVOLVEMENT AS A RESOURCE PERSON

- Inspire Science Camp, an initiative of DST, held at Bhaskaracharya College of Applied Sciences (2010); Topic of Lecture: Introduction to Electronics Lab experiments.
- Intercollege Faculty Development Programme on 'Understanding GOOGLE Classroom', at Bhaskaracharya College of Applied Sciences (2020). Topic of Lecture: Understanding GOOGLE Classroom.
- Workshop on 'Basic of Biosensor and its Techniques, at Bhaskaracharya College of Applied Sciences (2020). Topic of Lecture: Basic of Biosensors.

INVOLVEMENT IN SYLLABUS RESTRUCTURING

- Member of the committee constituted by Department of Electronic Science, University of Delhi south campus for designing Syllabus (subject: Digital Electronics) for 4-year UG Programme in Electronics (2013)
- Member of the UG committee for LOCF syllabus (subject: Practical Electronics). Committee constituted by Department of Electronic Science, University of Delhi south campus (2019)
- Member of the committee for Restructuring of syllabus under NEP of B.Sc.(H) Electronics (subject: Digital Electronics (SEM II)). Committee constituted by Department of Electronic Science, University of Delhi south campus (2022)
- Member of the committee for Restructuring of syllabus under NEP of B.Sc.(H) Electronics (subject: Stream E: Nanotechnology (Se m VII)). Committee constituted by Department of Electronic Science, University of Delhi south campus (2022)

AWARDS

Awarded with First prize in paper presentation "Converting manual switching systems to energy efficient smart switching systems: An Environment initiative", in Third International Conference on Entrepreneurship, Research and Innovation for Environmental Sustainability & Planetary Health 'Vasudhev Kutumbakam – 3 (VK-3).

MEMBER OF VARIOUS NATIONAL BODIES

- Member of Semiconductor Society of India.
- Member of Indian Science Congress.