

Dr. Kalan Mal (Ph. D.)

Associate Professor

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Dr. Kalan Mal completed his Graduation and Post-graduation in Physics from Visva-Bharati. He qualified CSIR-UGC NET in 2004, 2006 and GATE in 2005. He has obtained his Ph.D. from the department of Physics, Visva-Bharati in 2024. Currently he is an Associate Professor in Physics at the Suri Vidyasagar College, where he has been teaching for the last 16 years.

Teaching Areas:

- Electromagnetic Theory (CC-XIII): CBCS Sem VI (Hons).
- Quantum Mechanics (CC-XI): CBCS Sem V (Hons).
- Elements of Modern Physics (CC-IX) Sem IV (Hons).
- Mathematical Physics-II (CC-V) CBCS Sem III (Hons).
- Electricity and Magnetism (CC-III): CBCS Sem II (Hons).
- Mathematical Physics-I(CC-I) CBCS Sem I (Hons).

✚ **Research Interest: Quantum Optics, Laser Physics, Atomic and Molecular Spectroscopy.**

✚ **Research Project undertaken as PI:**

- **University Grant Commission Minor Research Project (UGC-MRP) F. No. 050 /15-16 (ERO) dated 16.11.2016.**
- **Title of Project: *Velocity Selective Resonance and Electromagnetically Induced Transparency in multi-level atomic systems.***

✚ **Few Recent Publications:**

- S. Garain, S. Mondal, **K. Mal**, S. Roy and A Bandopadhyay. Controlling Optical bistability, multistability and all optical switching through multi photon excitation process. *J. Phys. B. Mol. Opt. Phys.* **56** pp 185401-185412 (2023).
- A Paul, H. Saha, C. Malakar and **K. Mal**. *In vitro* generation of pharmaceutically important medicinal plants using Silver Nanoparticles: A concise Review, *Eco., Env. & Cons.* **29**: pp S146-S153 (2023).
- **K. Mal**, A. Paul, and C. Malakar, Effects of Light Pollution on Macroscopic Living System: A Concise Review, *Int. Jr. Zoo. Invs.* **9**(2): pp 396-400 (2023).
- **K. Mal**, In G. Mukherjee, S. Chakraborty, S. Roy, A. Banerjee, A. K. Sharma & A. Pramanik (Eds.). *Trends in sustainable Design, Technology and Innovation* (pp 138-146). Navamuvada, Lunawada. India, Redshine Publication ISBN:978-93-5879-479-3 (2023).
- S. Mondal, **K. Mal**, D. Bhattacharyya, N. Pal and A Bandopadhyay. Microwave assisted gain in inverted -Y type atomic system. *Optik.* **226** pp 165862 (2021).
- **K. Mal**, K. Islam, S. Mondal, D. Bhattacharyya and A. Bandopadhyay, 'Electromagnetically induced transparency in Y-type atomic system', *Jr. Of Phys. Conf. Ser.*, **1579** pp 012002 (2020).
- **K. Mal**, S. Mondal, D. Bhattacharyya and A. Bandopadhyay, Atom Localization in Cascade type system. *Jr. Of Phys. Conf. Ser.* **1579** pp 012013 (2020).

- **K. Mal**, K. Islam, S. Mondal, D. Bhattacharyya and A. Bandopadhyay, 'Electromagnetically induced transparency and electromagnetically induced absorption in Y-type system. *Chin Phys. B*, 29 (5) pp 054211 (2020).
- A. Ghosh, Khairul Islam, Suman Mondal, **K. Mal**, Dipankar Bhattacharyya and Amitava Bandopadhyay, Study of Three Level Cascade System: A Complete Analytical Approach. *Journal of Atomic, Molecular, Condensate & Nano Physics*. **3**(2), pp 97 (2016).
- **K. Mal**, K. Islam, and A. Bandyopadhyay In S.K. Bardhan, S. Das, A. Ghosh, A. K. Pari, A. Sen & S.R. Bhattacharyya (Eds.). *Emerging Issues in Inter & Intra-Disciplinary studies: An Indian Perspective* (pp 82-91) Suri, W.B. India, Rardh Publication. ISBN:978-93-83422-10-4 (2016),

Paper presented in Seminar / Conference:

- ❖ Poster presentation in 1st International Career Outreach Conference on "Trends in Sustainable Design Technology and Innovation", Bidhan Chandra College, November 26th-28th 2022.
- ❖ Oral presentation in One-day International Conference on "Emerging Trends in Biological Sciences", Department of Botany, Suri Vidyasagar College, 8th November, 2022.
- ❖ Oral presentation in National Seminar on "Contribution of Chemistry to the Well-being of Mankind" Organized by Department Chemistry, Raghunathpur College, Purulia, 24th September, 2022.
- ❖ Oral presentation in National Seminar on "Popular and Basic Sciences: A Quest towards Science" Organized by Sarat Centenary College, Hooghly, September, 23rd-24th, 2022.
- ❖ Poster presentation in International Conference on "Frontier areas in Science and Technoogy-2022", Hyderabad University, September 9th-10th 2022.
- ❖ Oral presentation, National conference on "Frontiers in Modern Physics", Adamas University, February 6th-7th, 2020.
- ❖ Oral presentation in National Conference on "Chemistry for Sustainable Development" Organized by Sidho-Kanho-Birsha University, November, 26th - 27th, 2019.
- ❖ Poster presentation, National conference on "Atomic, Molecular and Nano Sciences", Alliah University, April 3rd-4th 2019.
- ❖ Poster presentation, National conference on "Topical meeting on Advances in Photonics", Organized by NISER, Bhubaneswar, Orissa, March 29th-30th 2019.
- ❖ Poster presentation, National conference on "*The Central role of light in science and the importance of optical technologies*", Organized by Department of Physics, St. Paul's Cathedral Mission College, India, December 15th-16th, 2016.
- ❖ Poster presentation, *National Conference on "Emerging Issues in Inter- & Intra-Disciplinary Studies: An Indian Perspective"* Organized by Suri Vidyasagar College, March 4th-5th, 2016. Poster presentation
- ❖ Poster presentation, *International Conference on "Light Quanta: Modern Perspective & Applications"* Organized by Dept. of Physics, University of Allahabad December 14th-16th, 2015.
- ❖ Poster presentation, 4th International conference on "*Current Development in Atomic, Molecular, Optical and Nano Physics with applications*", Organized by Department of Physics & Astrophysics, University of Delhi-110007, India, March ,11th-14th, 2015.