Curriculum Vitae

Name: Dr. Amitava Bandyopadhyay.

Date of birth: 22nd June 1976.

Permanent address: 24/13 Ramnabamitla Lane, P. O. – Bally, District – Howrah, PIN - 711201, West Bengal, India.

Cell phone number – 9874366033

Email address: m2amitava@gmail.com, amitava.bandyopadhyay@visva-bharati.ac.in

Present affiliation: Department of Physics, Visva-Bharati (A Central University), Santiniketan (since 1st June 2009).

Present position: Assistant Professor – Stage III.

Qualification: M. Sc. (Physics, specialization – Plasma Physics, year of passing - 2000), Ph. D. (Physics, year of award - 2008) from the University of Calcutta.

NET: NET JRF (CSIR) June 2002.

Name of Ph. D. supervisor: Prof. Biswajit Ray, Department of Physics, University of Calcutta.

Title of the Ph. D. thesis: Measurement and analysis of line shape of molecular samples using near infra-red diode laser spectrometer.

Research interest: Atomic and molecular spectroscopy, Quantum Optics, Laser cooling and trapping of neutral atoms.

Positions held prior to joining the present institution:

Position	Institute / University	Duration
Junior Research Fellow	Department of Physics, University of Calcutta	17/03/2003 – 31/03/2005
Senior Research Fellow	Department of Physics, University of Calcutta	01/04/2005 – 15/12/2007
Senior Research Fellow	Time & Frequency standards, National Physics Laboratory, New Delhi.	16/12/2007 – 31/03/2008
Post Doctoral Fellow	Institute for Plasma Research, Bhat, Gandhinagar	06/06/2008 – 29/05/2009

Invited Talks:

1. **"Lasers: From research to everyday life,"** DST Inspire Internship Summer Camp 2009, Integrated Science Education & Research Centre (ISERC), Visva-Bharati, Santiniketan, 9-14 August 2009.
2. **"Molecular spectroscopy in the near infrared wavelength region by using an indigenous tunable diode laser source**," National Symposium on Atomic & Molecular Spectroscopy 2010, Integrated Science Education & Research Centre (ISERC), Visva-Bharati, Santiniketan, 27-28 March 2010.
3. **"Diode laser sources: their fabrication and use in different fields of spectroscopy,"** National Conference on Physical Sciences, DHSK College, Dibrugarh, 13th and 14th September, 2013.
4. **"Precision spectroscopy with tuneable diode laser sources,"** 30th National Symposium on Plasma Science & Technology, Plasma Science Society of India and Saha Institute of Nuclear Physics, 1st – 4th December 2015.
5. **"Application of diode lasers in atomic and molecular spectroscopy,"** National Conference on Advancement in Frontier Physics: From 20th Century to the Present, Department of Physics, Bhairab Ganguly College in collaboration with Department of Physics, Mrinalini Dutta Mahavidyapith and West Bengal State University. Associate Sponsor: Optical Society of India, 26th February 2016.
6. **"Probe absorption features in multi-level 'V' and Ξ type systems,"** Topical meeting on Advances in Photonics, School of Physical Sciences, National Institute of Science Education and Research (NISER), Bhubaneswar, March 29-30, 2019

Research projects awarded / completed:

1. DST sponsored research project under Fast Track Project ***"Manipulation of population in an atomic vapour system through coherent laser beams"***. Sanction order no. **SR/FTP/PS-079/2010** dated **14/08/2013. Duration:** September 2013 – September 2016. Actual amount sanctioned: Rs. 20 Lakhs.

2. UGC sponsored major research project "Effect of coherent radiation fields on the transparency of alkali atomic vapour medium". Sanction order no. UGC letter No. **F._No. – 43-527/2014(SR), dated-28/09/2015. Duration:** July 2015 – June 2018. Sanctioned amount: Rs. 14.05 Lakhs.

Publications of Amitava Bandyopadhyay in referred journals:

1. 'Frequency stabilisation of a GaAlAs semiconductor diode laser to an absorption line of water vapour at 822 nm' by A. Ray, **A. Bandyopadhyay**, B. Ray, P. N. Ghosh, IEE Proceedings Optoelectronics, ***151***, 490-495 (2004).
2. 'Line-shape study of water vapour by tunable diode laser spectrometer in the 822-832 nm wavelength region' by A. Ray, **A. Bandyopadhyay**, B. Ray, D. Biswas, P. N. Ghosh, Applied Physics B, ***79***, 915-921 (2004).
3. 'Velocity-selective resonance dips in the probe absorption spectra of Rb D_2 transitions induced by a pump laser' by S. Chakrabarti, A. Pradhan, **A. Bandyopadhyay**, A. Ray, B. Ray, N. Kar, P. N. Ghosh, Chemical Physics Letters, ***399***, 120-124 (2004).
4. 'On line shape measurement and simulation of rovibrational transitions of water vapour in the near infrared region' by **Amitava Bandyopadhyay**, Ayan Ray, Biswajit Ray, Pradip N. Ghosh, Chemical Physics Letters, ***401***, 135-139 (2005).
5. 'Line shape study of argon broadened water vapour overtone transitions in the 818-834 nm wavelength region' by **A. Bandyopadhyay**, A. Ray, B. Ray, P. N. Ghosh, Journal of Molecular Spectroscopy, ***234***, 93-98 (2005).
6. 'Velocity selective resonances and electromagnetically induced transparency in atomic rubidium' by Shrabana Chakrabarti, Amitkiran Pradhan, **Amitava Bandyopadhyay,** Ayan Ray, Biswajit Ray, Dipankar Bhattacharyya, Pradip N. Ghosh, Indian Journal of Physics, ***80***, 487-489 (2006).
7. 'A simple scanning semiconductor diode laser source and its application in wavelength modulation spectroscopy around 825 nm' by Ayan Ray, **Amitava Bandyopadhyay**, Sankar De, Biswajit Ray, Pradip N. Ghosh, Optics & Laser Technology, ***39***, 359-367 (2007).
8. 'Diode laser spectroscopic measurements and theoretical calculations of line parameters of nitrogen broadened water vapour overtone transitions in the 818-834 nm

wavelength region' by **Amitava Bandyopadhyay**, Biswajit Ray, Pradip N. Ghosh, Danielle L. Niles and Robert R. Gamache, Journal of Molecular Spectroscopy, ***242***, 10-16 (2007).

9. 'Velocity dependent pump-probe spectroscopy for a five-level system: an application to Rb D_2 transitions' by Dipankar Bhattacharyya, **Amitava Bandyopadhyay**, Shrabana Chakrabarti, Biswajit Ray and Pradip N. Ghosh, Chemical Physics Letters, 440, 24-30 (2007).
10. 'Laser frequency stabilisation for atom cooling and magnetic field compression of the trap' by Shrabana Chakrabarti, Ayan Ray, **Amitava Bandyopadhyay**, Dipankar Bhattacharyya, Biswajit Ray, B. N. Jagatap, K. G. Manohar and Pradip N. Ghosh, Laser Physics 17, 1176-1182 (2007).
11. 'Measurement and analysis of rotational lines in the $(2\nu_1 + \nu_2 + \nu_3)$ overtone band of H_2O perturbed by CO_2 using near infrared diode laser spectroscopy' by Priyanka Poddar, **Amitava Bandyopadhyay**, Debasish Biswas, Biswajit Ray and Pradip N. Ghosh, Chem. Phys. Lett. ***469,*** 52-56 (2009).
12. 'Observation of Electromagnetically induced transparency in six-level Rb atoms and theoretical simulation of the observed spectra by Dipankar Bhattacharyya, Arindam Ghosh, **Amitava Bandyopadhyay**, SatyajitSaha and Sankar De, J. Phys. B At. Mol. Opt. Phys. ***48,*** 175503(2015).
13. 'Comparison of electromagnetically induced transparency (EIT) spectra of six-level lambda (Λ) and five-level V-type systems' by Dipankar Bhattacharyya, Arindam Ghosh, **Amitava Bandyopadhyay**, Satyajit Saha and Sankar De, J. At. Mol. Condens. & Nano Phys., ***2,*** 93(2015).
14. 'A Study on the probe transmission through an inverted Y–type atomic system in presence of three coherent laser fields' by Arindam Ghosh, Khairul Islam, Suman Mondal, Dipankar Bhattacharyya and **Amitava Bandyopadhyay**,J. At. Mol. Condens. & Nano Phys.***3,*** 115 – 123, (2016).
15. 'Study on three level cascade system: a complete analytical approach' by Arindam Ghosh, Suman Mondal, Khairul Islam, Kalan Mal, Dipankar Bhattacharyya and **Amitava Bandyopadhyay**, J. At. Mol. Condens. & Nano Phys.***3,*** 97 – 104, (2016).

16. ‘Revisiting the four-level inverted-Y type system under both Doppler-free and Doppler-broadened conditions: an analytical approach’ by Arindam Ghosh, Khairul Islam, Dipankar Bhattacharyya and **Amitava Bandyopadhyay**, J. Phys. B At. Mol. Opt. Phys. ***49,***195401 (2016).
17. ‘Study on probe field propagation in presence of control and coupling fields through a four-level N-type atomic system’ by Khairul Islam, Dipankar Bhattacharyya, Arindam Ghosh, Debasish Biswas and **Amitava Bandyopadhyay,** J. Phys. B: Atm. Mol. Opt. Phys. **50,** 215401 (2017).
18. ‘Splitting of electromagnetically induced absorption signal in a five-level V-type atomic system’ by Khairul Islam, **Amitava Bandyopadhyay**, Bankim Chandra Das, Satyajit Saha, Sankar De and Dipankar Bhattacharyya, J. Opt. Soc. Of Am. B: Opt. Phys. **34,** 2550 (2017).
19. ‘A study on electromagnetically induced transparency and velocity selective optically pumped absorption in an eight-level inverted Y-type atomic system’ by Arindam Ghosh, Khairul Islam, Suman Mondal, Dipankar Bhattacharyya, Nikhil Pal and **Amitava Bandyopadhyay**, J. Phys. B: Atm. Mol. Opt. Phys. **51,**145501 (2018).
20. ‘Effect of residual Doppler averaging on the probe absorption in cascade type system: A comparative study’ by Suman Mondal, Arindam Ghosh, Khairul Islam, Dipankar Bhattacharyya and **Amitava Bandyopadhyay**, Chin. Phys. B **27,** 094204 (2018).
21. ‘Optical switching phenomenon in ladder type atomic system under varying wavelength mismatching effect with one due to a Rydberg transition’ by Suman Mondal, Arindam Ghosh, Khairul Islam and **Amitava Bandyopadhyay**, Opt. Commun. **435,** 378 (2019).
22. ‘An optical narrowband switch between subluminal and superluminal light propagation in the inverted-Y configuration’ by Suman Mondal, Arindam Ghosh, Khairul Islam and **Amitava Bandyopadhyay**, Laser Physics, **29,** 075204 (2019).
23. ‘Wavelength mismatching effects on susceptibility and optical switching in an inverted-Y type atomic system’ by Suman Mondal, Arindam Ghosh, Khairul Islam, Dipankar Bhattacharyya, and **Amitava Bandyopadhyay**, AIP Conference Proceedings **2072,** 020017 (2019).

24. ‘Electromagnetically induced transparency in a six-level inverted-Y type atomic system using Rydberg state’ by Arindam Ghosh, Suman Mondal, Khairul Islam, and **Amitava Bandyopadhyay**, AIP Conference Proceedings 2072, 020002 (2019).
25. ‘Electromagnetically induced transparency and electromagnetically induced absorption in Y-type system’ by Kalan Mal, Khairul Islam, Suman Mondal, Dipankar Bhattacharyya, and **Amitava Bandyopadhyay**, Chinese Physics B **29,** 054211 (2020).
26. ‘Electromagnetically induced transparency in Y-type atomic system’ by Kalan Mal, Khairul Islam, Suman Mondal, Dipankar Bhattacharyya and **Amitava Bandyopadhyay**, Journal of Physics: Conference Series, **1579,** 012002 (2020).
27. ‘Atom localization in cascade type system’ by Kalan Mal, Suman Mondal, Dipankar Bhattacharyya and **Amitava Bandyopadhyay**, Journal of Physics: Conference Series, **1579,** 012013 (2020).
28. ‘Formation of electromagnetically induced transparency and two-photon absorption in close and open multi-level ladder systems’ by Suman Mondal, Sushree Subhadarshinee Sahoo, Ashok Kumar Mohapatra, **Amitava Bandyopadhyay**, Optics Communications, **472,** 126036 (2020).
29. “Microwave assisted gain in inverted-Y type atomic system” by Suman Mondal, Kalan Mal, Dipankar Bhattacharyya, Nikhil Pal and **Amitava Bandyopadhyay**, Optik, Vol. 226, 165962 (pp-8), 2021.
30. ‘Electromagnetically induced transparency, narrow absorption and transient response in a three-photon excitation process’ by Suman Mondal, Dipanwita Das, Parantap Dey, Dipankar Bhattacharyya and **Amitava Bandyopadhyay**, Optik, **265** 169410 2022.