



Dr. Mihir Hota - Ph.D.

Name : Mihir Hota
Designation : Professor
Department : Basic Science & Humanities (Physics)
(Joined the institute in 2021)
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AREAS OF INTEREST

Photonic Crystal Fiber

Sensors

Characterisation of nanomaterials

ACADEMIC QUALIFICATIONS

Ph. D. (Electronic Science) Berhampur University, Odisha, India

M. Sc. (Physics) Ravenshaw University, Odisha, India

TEACHING /INDUSTRIAL/RESEARCH EXPERIENCE

September 2021 - Present	Professor of Physics Silicon Institute of Technology, Sambalpur
February 2006 – August 2021	Professor of Physics National Institute of Science and Technology Berhampur, Odisha, (Autonomous) - NAAC "A"
July 1992 – February 2006	Sr. Lecturer in Physics Patkai Christian College (Autonomous) - NAAC "A"

OTHER EXPERIENCES:

1. Attended ICNOP 2017, AT Toronto University, Canada.
2. Visited Brunel University, London from 24th April 2016 to 3rd May 2016 for UKERI project work as Visiting Scientist.
3. 2 years of teaching experience in G.M College (Autonomous), Sambalpur.
4. 14 years in Pattkai Christian College, Dimapur (Autonomous NACC A) as H.O.D.
5. 5 years of experience as a member of BUGS (Board of Under Graduate Studies) in Nagaland University.
6. 5 years of experience as a member of Quality Control Groups in NAAC, Patkai Christian College
7. 5 years of experience as a member of Inspection Committee for Opening New Streams in the Colleges of Nagaland University
8. 1 year experience as a member of Academic Council of Patkai Christian College, Dimapur (Autonomous).
9. Reviewer of "Journal of Quantum and Opto -Electronics" of SPIE.
10. Board of studies member(Physics) of Department of Physics, Berhampur University
11. Board of studies member(Physics) of Department of Physics, NIST (Autonomus)
12. Coordinator, JBNSTS Science workshops for the North-East, Kolkata
13. Member of the Disciplinary Committee at the NIST, Berhampur
14. Member, DST INSPIRE Science camp (12 camps conducted with 400 participants in each camp)
15. Faculty advisor of Astronomy Club at NIST.
16. Faculty advisor of Trekking and sports activities at NIST
17. Worked as Superintendent of B.PUT. Examinations held at NIST
18. Worked as Finance Officer at NIST
19. Worked as Hostel Superintendent in U.G. and P.G. Hostels at NIST
20. Faculty Advisor, NIST ISTE Student Chapter
21. Worked as Student Welfare coordinator, NIST, Berhampur
22. Worked as Alumni Coordinator, NIST, Berhampur

PUBLICATIONS

JOURNALS

1. S.P. Dash, M. Hota and S.K. Tripathy « Fingertip Touch-based Non-invasive Glucose Sensor Using Visible Laser Light in a SiO₂-Au- SiO₂ Coated Prism: Design and Implementation Using the Matrix Method » Accepted for Publication Lasers in Eng., Vol. 0, pp. 1-14,2021
2. D.K.Papouliasa T.S.Kosmas b R.Sahuc V.K.B.Kotad M.Hotac "Constraining nuclear physics parameters with current and future COHERENT data" Physics Letters B, Volume 800, 10 January 2020, 135133
3. M Hota, SK Tripathy, "Photonic Crystal Structures for Sensing Application", Journal of Bionanoscience 10 (5), 331-340,2016, ISSN: 1557-7910

4. " Realization of a Photonic Switch in a Photonic Crystal Fiber using Kerr Nonlinearities" Abhilash Panda, Mihir Hota, Trilochan Panigrahi, Sonali Prava Dash, Sukanta Kumar Tripathy, IJCA, 2015
5. "Enhancement of transmission efficiency in a photonic bandgap fiber introducing nonlinearity" Avilash Panda, S K Tripathy and Mihir Hota, Proc. SPIE 9654, International Conference on Optics and Photonics 2015, 96541X (June 15, 2015); doi:10.1117/12.2182805
6. "A Model for Optical Bistability in a Hybrid Semiconductor Photonic Crystal Structure" S.K.Tripathy, Mihir.Hota, T. Panigrahy, IEEE Photonic Technology Letters, Photonic Crystal Structure" S.K.Tripathy, Mihir.Hota, T. vol.21, No.12, pp.772-774, 2009.
7. S.K.Tripathy and Mihir Hota "Optical Bistable Switching in a Magnetic Semiconductor". McMillan Advanced Research Series, 2009, pages-589-592.
8. "Analysis of diffraction efficiency of a Holographic Coupler with respect to angular divergence" Mihir.Hota and S.K.Tripathy, Indian Journal of Physics 83(4) 1-8(2009).
9. "Coupling Optimization in holographic coupler – Large area Flattened Fiber system" S.K.Tripathy, Mihir.Hota, P. Nayak, IEEE Xplore, Proceedings of the IEEE International Conference on Computing, communication and Networking, pp. 1-5, 2008 (ICCCN 2008). ISBN: 978-1-4244-3594-4.
10. "Free Space Based Optical Communications Systems" Mihir.Hota, S.K.Tripathy, R.K.Dash and A.K.Panda, GITAM Journal of Information Communication Technology, Vol-2, Jan-Jul 2009, pp-11-15.
11. "Photonic Crystal Structure for Different Photonic Applications" Mihir Hota , Sonali P Dash , Gopinath Palei and Sukanta K.Tripathy, International Journal of Instrumentation Electrical Electronics Engineering, Vol1.no2, March 2013.
12. "Realization of optical XOR and OR gates using asymmetric Y-structure in a two dimensional photonic crystal" Rath Smruti, Dash Sonali P, Hota Mihir, Tripathy Sukanta K, AIP Conference Proceedings, Volume 1461, Issue 1, p.369-373, 2012
13. "Design of a holograting to couple power between two fibers for optical communication" Swati Mishra, S K Tripathy and Mihir Hota, *Asian Journal of Physics*, Vol. 21, No 2 (2012) 219-224
14. "Optical Bistable Switching in a Magnetic Semiconductor", McMillan Advanced Research Series, pages-589-592, 2009.
15. S.P.Dash, Mihir Hota, and S.K.Tripathy, "Segmented Core-clad Fiber Design for Enhanced SBS Threshold and Improved Coupling Efficiency", International Conference on MEMS and Optoelectronics Technology (ICMOT-2010) organized by International Accreditation Council of quality Education and Research. pp76-79
16. S.P.Dash, Mihir Hota, Trinath Sahu and S.K.Tripathy "Analysis of Coupling Efficiency between Two Holey Fibers Using a Holographic Coupler" International conference on Computing and Signal Processing (ICCS-2011) to be held at NIT Calicut and published in IEEE EXPLORE.
17. S.Rath, S.P.Dash, M.Hota and S.K.Tripathy, "Realization of Optical XOR and OR Gates Using Asymmetric Y Structure in a Two Dimensional Photonic Crystal", AIP conference Proceedings in International Workshop on Functional Materials, pp371-375(2012)
18. S.Rath, S.P.Dash, M.Hota and S.K.Tripathy, "Realization of Optical OR Gates Using Asymmetric Y Structure in a Two Dimensional Photonic Crystal", ICONSET-2011, IEEE Xplore, 2011, pp 196 – 197

BOOK CHAPTERS

1. "DNA Assisted Synthesis of CdS Nanowires: A Nano-bioelectronic Device" S.N.Sarang, B.C.Behera, M.Hota and S.K.Tripathy, Advanced Materials, AIP Conference Proc., 2005, 070006-1-070006-4, December 2017, <https://doi.org/10.1063/1.5050763>, ISBN 978-0-7354-1721-2
2. S.K.Tripathy and Mihir Hota "Optical Bistable Switching in a Magnetic Semiconductor". McMillan Advanced Research Series, 2009, pages-589-592. ISBN:0230328512
3. S.K.Tripathy, Mihir Hota and Nilamber Muduli, "Optical Bistability in a Photonic Crystal Structure close to a Magnetic Semiconductor, the effect of Impurity and self interaction "Communication Technologies and VLSI design, page 326-329, ISBN:978-81-8424-493-9, 2009

Editor of Book:

**(AIP/ CONFERENCE PROCEEDINGS) Volume-2005, December 2017
(Published in 2018)**

1. Advanced Materials, Proceedings of the International Workshop on Advanced Materials (IWAM-2017), Editors: S. M. Bose, S. K. Tripathy and M. Hota

ANY OTHER

CONFERENCE/ SEMINAR PAPERS PRESENTED

1. "DNA Assisted Synthesis of CdS Nanowires: A Nano-bioelectronic Device" S. N. Sarangi, B. C. Behera, M. Hota and S. K. Tripathy Advanced Materials, AIP Conference Proc. 2005, 070006-1-070006-4, December 2017, <https://doi.org/10.1063/1.5050763>, ISSN 0094-243X
2. "Quantum Confinement in LEEH Capped CdS Nanocrystalline" M. Hota, N. Jena, S. N. Sahu, Page 1664-1667, 2017, Conference Proceedings, Toronto, Canada, June 15-16, 2017 (eissn: 2010-3778)
3. "Enhancement of transmission efficiency in a photonic bandgap fiber introducing nonlinearity" Avilash Panda, S K Tripathy and Mihir Hota, Proc. SPIE 9654, International Conference on Optics and Photonics 2015, 96541X (June 15, 2015); doi:10.1117/12.2182805
4. S.K.Tripathy and Mihir Hota "Optical Bistable Switching in a Magnetic Semiconductor" DOI: 10.1109/ELECTRO.2009.5441036
5. "Coupling Optimization in holographic coupler – Large area Flattened Fiber system" S.K.Tripathy, Mihir.Hota, P. Nayak, IEEE Xplore, Proceedings of the IEEE International Conference on Computing, communication and Networking, pp. 1-5, 2008 (ICCCN 2008). ISBN: 978-1-4244-3594-4.
6. "Realization of optical XOR and OR gates using asymmetric Y-structure in a two dimensional photonic crystal" Rath Smruti, Dash Sonali P, Hota Mihir, Tripathy Sukanta K, AIP Conference Proceedings, Volume 1461, Issue 1, p.369-373, 2012
7. S.P.Dash, Mihir Hota, and S.K.Tripathy, "Segmented Core-clad Fiber Design for Enhanced SBS Threshold and Improved Coupling Efficiency", International Conference on MEMS and Optoelectronics Technology (ICMOT-2010) organized by International Accreditation Council of quality Education and Research. pp76-79

8. S Rath, SP Dash, M Hota, SK Tripathy, "Realization of optical XOR and OR gates using asymmetric Y-structure in a two dimensional photonic crystal", AIP Conference Proceedings 1461 (1), 369-373,2012
9. S.Rath,S.P.Dash,M.Hota and S.K.Tripathy, "Realization of Optical OR Gates Using Asymmetric Y Structure in a Two Dimensional Photonic Crystal", *ICONSET-2011,IEEEExplore*, 2011 , pp 196 – 197
10. "Coupling Optimization in holographic coupler – Large area Flattened Fiber system" S.K.Tripathy, Mihir.Hota, P. Nayak, IEEE Xplore, Proceedings of the IEEE International Conference on Computing, communication and Networking, pp. 1-5, 2008(IEEECCN 2008). (International Publication) ISBN: 978-1-4244-359

RESEARCH PROJECTS/INDUSTRIAL CONSULTANCY UNDERTAKEN :

1. MSME PROJECT, Govt.of India, Ministry of MSME, Funding :Rs.10 Lakh
2. "Deformed Shell model study of heavy N-Z nuclei and dark matter detection" DST Govt. of India (Extra Mural Research Funding, Funding: Rs.25 Lakh
3. New applications of Deformed Shell, DST Govt. of India (Extra Mural Research Funding,Funding :Rs.25 Lakh

AFFILIATION TO PROFESSIONAL SOCIETY:

1. ORISSA PHYSICAL SOCIETY, PATRON MEMBER
2. Photonics Society of India, Life Member
3. Indian Society of Technical Education, Life Member

SHORT TERM COURSE CONDUCTED/DELIVERED LECTURES

1. A.I.C.T.E. F.D.P. on Nanotechnology, held at NIST from 27th March-April8, 2006.
2. A.I.C.T.E. F.D.P. on Modeling and Simulation Techniques in Science and Engineering, held at NIST Berhampur, July 6th –July16th, 2007.
3. A.I.C.T.E. F.D.P. on Organic Electronics, held at NIST, Berhampur, 23rd June-4th July, 2008.
4. Delivered Invited Lecture on "Nanotechnology and its usefulness to Society" at Nagaland University on 18th February, 2012.
5. Delivered Lecture on Fiber Optics and its application at Sophitorium Group of Institutions,Jatni,Khurda, Odisha in Febary,2016

WORKSHOP CONDUCTED

1. D.S.T. sponsored 10 day workshop on Sensors for Mining and Mineral Industry, held at NIST, Berhampur, Nov-18 –Nov-30, 2007.
2. National seminar on "Recent Trend in Physics in Engineering Education" and Annual Convention of Orissa Physical from Feb14th- Feb-15th 2009 at NIST, Berhampur.
3. Conducted International Workshop on Functional Materials (IWFM2011), Dec 20-22, 2011 at National Institute of Science and Technology, Berhampur, Odisha.
4. Conducted INDO-US International Workshop on Nanosensor Science & Technology [*IWNST* - 2013], Feb 27-29, 2013 at National Institute of Science and Technology, Berhampur,Odisha.
5. Conducted International Workshop on Frontiers in Materials Science and Technology,2015, December 20-22,2015 at National Institute of Science and Technology, Berhampur, Odisha.

6. Conducted International Workshop on Advanced Materials (IWAM2017), Dec 19-21, 2017 at National Institute of Science and Technology, Berhampur, Odisha.

ACADEMIC VISITS ABROAD:

1. Visited **Brunel University, London, United Kingdom** for UKERI project work as Visiting Scientist from 24th April 2016 to 3rd May 2016,
2. Attended ICNOP 2017 at **Toronto University, Canada**.
3. Visited **Bali, Indonesia** for paper presentation in ISTE International Conference in November 2018.

AWARDS/ACHIEVEMENTS

1. Best Science Teacher award by ISTE Odisha Section in the year 2018.
2. Best ISTE Faculty Advisor for the Odisha Section in the year 2019.

Ph.D. GUIDANCE:

Name: Sonali Prabha Das

Topic: Studies on Fiber Bragg Grating and Photonic Crystal Components for Sensing and Optical Logic Gates.

Enrolment No. and Date: DS001174 (22-02-2016) in BPUT, Rourkela

Faculty: Engineering

Discipline: Electronics and Communication Engineering