OPTICA Formerly OSA
Advancing Optics and Photonics Worldwide
LNMIIT OPTICA STUDENT CHAPTER

LNMIIT
The LNM Institute of Information Technology

LNMIIT Optica Student Chapter (LOSC)

of

The LNM Institute of Information and Technology

Invite you to the

Inaugural Ceremony

Venue:	**Day & Date:**
LT-17, RIEP Building, LNMIIT, Jaipur	Thursday, 12th March 2026 (10:00 am).

ABOUT THE EVENT:

Inauguration of LOSC & Lecture Series

Speaker 1: **Prof. Agus M. Hatta** (Professor of Engineering Physics & Vice Rector for Research, Innovation, Cooperation, and Alumni at ITS Surabaya, Indonesia)

Title of Talk: **Building Networks in Optics: A Journey of Research, Innovation, and Meaningful Collaboration**

Speaker 2: **Dr. Rikmantra Basu** (Associate Professor & Head, ECE, NIT Delhi)

Title of the Talk: **Exposure for Beginners: Journey from Electrons to Photons, Past, Present, and Future**

Contact us:

Email: optica-chapter@lnmiit.ac.in

Phone no.: +91-7276373776 (Dr. Harshvardhan Kumar, Faculty Advisor)

+91-7665125804 (Ms. Neha Soni, LOSC President)

SCHEDULE

Time	Program
10:00 AM	*Session 1: Formal Inauguration*
10:05 AM	*Ceremonial Start (Lamp Lighting and Sarasvati Vandana)*
10:10 AM	*Welcome and Felicitation of the Chief Guest and Dignitaries*
10:20 AM	*Optica Overview (Chapter and Team)*
10:30 AM	*Session-2: Invited Talk by* **Prof. Agus M. Hatta**
11:30 AM	*High Tea Break / Refreshments*
11:50 AM	*Session-3: Invited Talk by* **Dr. Rikmantra Basu**
12:50 PM	*Journey into Research in Semiconductor & Photonics - Ms. Neha Soni (President, Optica Student Chapter)*
1:05 PM	*Closing (Vote of Thanks & Group Photos)*
1:10 PM	*Lunch (Organised for guests, faculty, and the LOSC team) & End of Program*

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LOSC Lecture Series– 01/2026

LNMIIT
The LNM Institute of Information Technology

Invited Talk

On

"**Exposure for Beginners: Journey from Electrons to Photons, Past, Present, and Future**"

Organized

By

LNMIIT Optica Student Chapter (LOSC)

LNMIIT Optica Student Chapter (LOSC) cordially invites you to attend an invited talk by **Dr. Rikmantra Basu**, Associate Professor and Head, ECE, National Institute of Technology Delhi, India.

Abstract:

Semiconductor-based optoelectronic devices find widespread applications in communication, networking, sensing, night vision, entertainment, military, environmental studies, photovoltaics, and many other areas. Semiconductor optoelectronics also offers many fundamental phenomena for study. Most optoelectronic devices use III-V compounds and their alloys, and in recent years, nanostructures based on these materials. Yes, the materials for VLSI and its alloys are not suitable for such applications due to the indirect nature of their band gaps. In recent years, the Group IV semiconductor alloy Ge1-xSix has shown a direct band gap for x > 0.08 and/or under suitable strain. This makes the realization of lasers, LEDs, and photodetectors at telecommunication bands and beyond possible and contributes to the development of Group IV photonics. The present talk will focus on the author's own work on two novel photonic devices based on the GeSn alloy: transistor lasers and hetero-phototransistors. Transistor Lasers serve both as light emitters and amplifiers. The basic structure is a heterojunction bipolar transistor. The base contains a Quantum Well. With sufficient injection of electrons and holes, population inversion occurs in the QW in the base. The analytical models developed for the current-voltage characteristics, light power output, and threshold base current, along with results and comparisons with experimental results for InGaAs QWs, will be presented. Predicted results for the GeSn-based transistor laser will then be discussed. Hetero-phototransistors are a good replacement for Avalanche Photodetectors, as they provide gain without excess noise. The work with GeSn as the base, both analytical and simulation-based, will be presented and compared with the results for InGaAs-based HPTs.

Biography:

Rikmantra Basu received B.Sc. (2004), B.Tech. (2007) and M.Tech. (2009) all from the University of Calcutta. He joined the Center for Research in Nanoscience and Nanotechnology of Calcutta University as a SRF in 2009 and then as a CSIR-Senior Research Fellow (SRF) to complete his Ph.D. (2013). Immediately after his PhD, he served as an Assistant Professor in BITS Pilani during 2013-14, and then he joined ECE department of NIT Delhi in December 2014, where he is still continuing and present ongoing as an Associate professor in the Department. His research areas include modeling and simulation of novel Opto-electronic devices like transistor lasers, hetero-phototransistors, Group IV photonics, and Solar Cell material analysis. He has more than 120 international SCI journals and international conference publications, 4 contributed book chapters in edited volumes. He has already completed 4 Research and Development projects supported by DST, INSA Govt of India and joint Indo-Taiwan bilateral research Programme. He has coauthored 2 books "Semiconductor Laser Theory" (CRC Taylor and Francis 2015) and Semiconductor Nanophotonics (Oxford University Press, UK, 2022). He also adapted the book "Semiconductor Electronic Devices" by Streetman and Banerjee (2016). He was a Young Scientist awardee by URSI General Assembly 2012 held in Istambul, Turkey. He spent the summer of 2014 in University of Bristol for research and also be a prat of the National Chung Cheng University of Taiwan as Research Scientists during the summers of2017, 2018 & 2019. HE visited Canada, USA, Korea, Singapore, Ireland, Taiwan, Denmark, and may more country Institutions to present his research work. Dr. Basu is a senior member of IEEE, APS and OSA and served as reviewers of many journals, namely, IEEE JQE, IEEE PTL, Electronic letters, IET Opto-electronics, journals by Elsevier etc. He already organized 2 conferences in India as organizing Chair, including the 21 st edition of NUSOD 2024 which held first time in India in 2024, since it's inception.

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Schedule of the Talk:	**Faculty coordinator:**
Date: 12th March 2026 Time: 10:00 AM to 1:00 PM (IST) Venue: LT-17, RIEP Building	**Dr. Harshvardhan Kumar**, Assistant Professor, Department of ECE & Head of Silicon Photonics Research Group, LNMIIT, Jaipur Email-harshvardhan.kumar@lnmiit.ac.in

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"Building Networks in Optics: A Journey of Research, Innovation, and Meaningful Collaboration"

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LNMIIT Optica Student Chapter (LOSC)

LNMIIT Optica Student Chapter (LOSC) cordially invites you to attend an invited talk by **Prof. Agus M. Hatta**, Professor of Engineering Physics and Vice Rector for Research, Innovation, Cooperation, and Alumni at Institut Teknologi Sepuluh Nopember (ITS), Surabaya, Indonesia.

Abstract:

Today, solving real-world problems with optics and photonics requires more than just working alone in a lab. It requires teamwork and a strong global network. In this talk, I will share my research journey, specifically working with optical fibre sensors. We will discuss how basic optical principles can be turned into practical tools, from non-invasive health monitors to food authenticity sensors.

Beyond the technical side, I will also share my experiences in managing university innovation programs. Having been part of the Optica community since 2010, I have learned that building a successful research network is a lot like physics. It needs the right connections, energy, and shared goals.

For the newly formed Optica Student Chapter, I hope this session will show you what 'meaningful collaboration' truly looks like. My goal is to encourage young scientists to start building their global networks early, connect their lab work to society's needs, and step up as future leaders in science.

Biography:

Prof. Agus Muhamad Hatta is a Professor of Engineering Physics and currently serves as the Vice Rector for Research, Innovation, Cooperation, and Alumni at Institut Teknologi Sepuluh Nopember (ITS) in Surabaya, Indonesia. He earned his Ph.D. from the Photonics Research Centre at Technological University Dublin in 2010, followed by a Postdoctoral fellowship in Quantum Optics at Jazan University in 2014.

His primary research expertise lies in optical instrumentation and photonics sensing. He has led numerous research projects focusing on fibre optic sensors, with practical applications ranging from continuous non-invasive heart rate monitoring to food authenticity detection and sustainable agricultural lighting.

Beyond the laboratory, Prof. Hatta is deeply involved in orchestrating research and innovation ecosystems. Before his current role as Vice Rector, he served as the Director of Innovation and Science Techno Park at ITS (2022–2024) and the Director of Research and Community Service (2020–2022).

He is an active advocate for the global optics community, having been a member of Optica (formerly OSA) and SPIE since 2010. He also serves as the President of the Indonesian Optical Society for the 2025-2027 term.

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Date: 12th March 2026 Time: 10:00 AM to 1:00 PM (IST) Venue: LT-17, RIEP Building	**Dr. Harshvardhan Kumar**, Assistant Professor, Department of ECE & Head of Silicon Photonics Research Group, LNMIIT, Jaipur Email-harshvardhan.kumar@lnmiit.ac.in