National Communications Academy-T, Ghaziabad
Department of Telecommunications
Ministry of Communications
Government of India

Webinar on "Free Space Optical Communication (FSOC) and Li-Fi Technologies: Opportunities, Challenges and Use Cases"

29th April 2025, Tuesday (11:00 - 13:30 Hrs)

Webinar Objective

The webinar on "**Free Space Optical Communication (FSOC) and Li-Fi Technologies: Opportunities, Challenges and Use Cases**" aims to explore cutting-edge advancements in optical wireless communication. FSOC, leveraging light in the visible (350–750 nm) and infrared (800–1000 nm) spectrum, is emerging as a secure, high-bandwidth and interference-free solution for long-range data transmission, particularly in non-terrestrial and high-density environments. Complementing this, Li-Fi (Light-Fidelity) technology is gaining momentum as a cost-effective and high-speed indoor wireless alternative to traditional Wi-Fi. The webinar will cover key aspects such as FSOC fundamentals, Li-Fi for secure wireless networks, challenges and opportunities, and sustainable last-mile connectivity through solar-based communication.

Esteemed speakers from IIT Delhi, IIIT Delhi, M/s Nav Wireless, and M/s Velmenni will share insights on current research, field implementations, and innovations on FSOC and Li-Fi technologies. **The target audience** of the webinar are the officers from LSAs, DoT, TSPs, ISPs, Industry forums, Academia and other stakeholders.

Inaugural Session (11:00 - 11:20 Hrs)

11:00 - 11:05	Welcome Address	**Sh. H. S. Jakhar**	DDG (Tx & NGS), NCA-T, Ghaziabad
11:05 - 11:15	Inaugural Address	**Sh. Deb Kumar Chakrabarti**	DG, NCA-T, Ghaziabad
11:15 - 11:20	Vote of Thanks	**Sh. Amit Kumar Chauhan**	Director (Tx & NGS), NCA-T, Ghaziabad

Technical Sessions (11:20 - 13:30 Hrs)

S. No.	Time (Hrs)	Name of the Topic	Expert Speaker
1.	11:20-11:50	Deep dive into technical and operational challenges of FSO and emerging solutions.	**Dr. Abhishek Dixit** Associate Professor, IIT Delhi
2.	11:50-12:20	SolarComm: A New Dawn for sustainable last mile connectivity with FSO/Li-Fi	**Dr. Abhijit Mitra** Assistant Professor, IIIT Delhi
3.	12:20-12:50	Insights into practical applications of Li-Fi and FSO for smart, secure networking	**Sh. Hardik Soni** CTO, M/s Nav Wireless Technologies
4.	12:50-13:20	Real-world deployments and future roadmaps for Li-Fi in India and beyond	**Sh. Deepak Solanki** CEO, M/s Velmenni
5.	13:20-13:28	Question & Answer Session	
6.	13:28-13:30	Vote of Thanks	**Sh. Ravi Kumar** AD (Tx & NGS), NCA-T, Ghaziabad

Dignitaries of Inaugural Session

Deb Kumar Chakrabarti
DG, NCA-T, Ghaziabad

H. S. Jakhar
DDG (Tx & NGS), NCA-T, Ghaziabad

Amit Kumar Chauhan
Director (Tx & NGS), NCA-T, Ghaziabad

Online Platform & Registration

Date & Time: 29th April 2025, Tuesday (11:00 -13:30 Hrs)
Online Platform: Microsoft Teams
Link & QR Code to join the Webinar: https://tinyurl.com/FSOC-LiFi-Webinar-29th-Apr

Expert Speakers

Dr. Abhishek Dixit, Associate Professor, IIT Delhi

Dr. Abhishek Dixit is an Associate Professor in the Department of Electrical Engineering at IIT Delhi. At IIT Delhi, Prof. Dixit teaches courses in Optical Communications, Signal Processing, Communications Engineering, and Networking. He has also delivered an NPTEL course on Principles of Digital Communications. Prof. Dixit leads active research efforts in Optical Communications and Networking. His recent work explores the integration of Machine Learning techniques to enhance both conventional and quantum communication systems. He has been involved in numerous national research projects and has undertaken multiple consulting assignments in the area of railway signaling. He has published over 30 papers in leading international journals. Additionally, he has presented over 50 papers at international conferences. Dr. Dixit is also credited with three successful technology transfers in the areas of Free-Space Optics (FSO), Li-Fi and software stacks for smart meters.

Dr. Abhijit Mitra, Assistant Professor, IIIT Delhi

Dr. Abhijit Mitra received his Ph.D. from the Indian Institute of Technology Delhi (2017) under the funding of the British Telecom Fellowship. He has experience in modeling and network planning for metro and core optical networks. He has been a reviewer in reputed journals like the Journal of Optical Communication and Networking (JOCN) and the Journal of Lightwave Technology (JLT). He has published in major venues like Proceedings of the IEEE, JOCN, JLT, Optical Fiber Communications (OFC) Conference, and the European Conference on Optical Communications (ECOC) with due industry-academic collaborations. He has been awarded DST Inspire Faculty Fellowship (2017-2022) by DST, British Council (Alumni Awards): Professional Achievement Awards (2019) by British Council, the prestigious Fulbright Post Doctoral Research Fellowship by the United States India Education Foundation (USIEF) and Sparkle-Marie Skłodowska-Curie Actions (MSCA) Cofund Fellowship (2022, not availed).

Sh. Hardik Soni, CTO, M/s Nav Wireless Technologies

Shri Hardik Soni, is CTO & Co-Founder of M/s Nav Wireless Technologies Pvt Ltd, a global leading technology and solutions provider of Wireless & Information communications systems with its own R&D facilities, manufacturing base in Gujarat, India. The company offers a comprehensive suite of products and services in the domain of Optical Wireless Technologies & transmission system to its global customers. Nav Wireless Technologies is one of the pioneer companies in the world who provides Optical Wireless Technologies – Li-Fi | FSO made in India products.

Sh. Deepak Solanki, CEO, M/s Velmenni

Shri Deepak Solanki is the Founder and CEO of M/s Velmenni, a pioneering company at the forefront of Li-Fi technology. Since its inception in October 2014, Sh. Deepak has a clear vision of revolutionizing wireless communication through light. Under his leadership, the company has explored various innovative applications of Li-Fi, from creating a highly secure network for enterprises to providing high-speed internet to remote and underserved areas. He started his professional career as a researcher at IIIT-Hyderabad and SINE, an umbrella organization at IIT Bombay, where he worked on solving complex research problem in robotics and self-driving vehicle domain. He also worked with a startup in France. He authored multiple research papers in IEEE conferences and got granted international patents.

Organizing Team

Tx & NGS Division, NCA-T, Ghaziabad

H. S. Jakhar
DDG (Tx & NGS)

Amit Kumar Chauhan
Director (Tx & NGS)

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