



RESOURCE PERSON:

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When and Where?

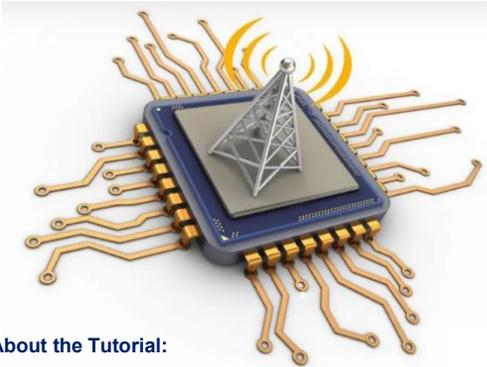
Date: 12.03.2026
Time Duration : 10AM to 4PM
Venue: ABV-IIITM Gwalior
Mode: Hybrid (Preferred Offline)

About the Expert

Dr. H. Singh received his B.E. degree in Electronics and Communication Engineering (ECE) from NRI-IIST, RGPV, Bhopal in 2010. Later, he completed his M. Tech. and Ph.D. in Electronics and Communication Engineering (Telecommunication Engineering) from National Institute of Technology Durgapur in 2014 and 2022 respectively. He has worked as an assistant professor in the University of Engineering and Management Kolkata (UEM Kolkata). Currently, He is working as an Assistant Professor in the Department of Electronics and Communication Engineering in Amrita Vishwa Vidyapeetham, Coimbatore Campus, Coimbatore, TN, India. He has more than 20 publications in reputed journals and conferences at various national and international levels. Dr. Singh has delivered a talk on antennas as a resource person at MNIT Jaipur. He served as a reviewer in reputed referred journals, like-Springer Nature publishers, Progress in Electromagnetic Research etc. and many IEEE sponsored international conferences. Dr. Singh research interests include design and development of L, S, C, X and Ku-band integrated antennas using silicon based technology, On chip antenna, Smart miniaturized Antenna Design. Dr. Singh is associated with IEEE professionals' platform as a Professional Member and a member of IEEE APS society.



Tutorial on On-chip antenna for next generation RFIC: Challenges, Design and Future Scope



About the Tutorial:

The rapid growth of next-generation wireless communication systems and Internet of Things (IoT) technologies has created a critical demand for compact, high-performance, and fully integrated radio solutions. On-chip antennas integrated within Radio Frequency Integrated Circuits (RFICs) offer a transformative pathway towards miniaturized and cost-effective wireless devices by eliminating bulky external antenna components. However, achieving efficient radiation performance in silicon-based environments presents significant design challenges due to inherent material losses, limited chip area, and strong electromagnetic coupling with surrounding circuitry.

This tutorial provides a comprehensive overview of the challenges, design methodologies, and emerging trends in on-chip antenna development for advanced RFIC applications. Key topics include electromagnetic fundamentals for on-chip antenna operation, substrate and material considerations, optimization and simulation strategies, and innovative miniaturization and feeding techniques. Real-world design examples and performance analyses will be discussed to highlight practical implementation considerations.

The session also explores future opportunities enabled by emerging semiconductor technologies, advanced packaging, and applications in 5G/6G, IoT, wearable electronics, and sensor networks. By integrating multidisciplinary knowledge, this tutorial equips researchers, engineers, and students with the skills required to drive innovation in highly compact RF systems and next-generation wireless technologies.

About the Conference:

The 4th IEEE International Conference on Interdisciplinary Approaches in Technology and Management for Social Innovation (IATMSI-2026) is a globally recognized Scopus-indexed flagship event organized by the Department of Electrical and Electronics Engineering, ABV-IIITM Gwalior, India, in association with the IEEE Madhya Pradesh Section. The conference provides an international platform to disseminate innovative research across multidisciplinary domains, including communication systems, IT-enabled management, industrial electronics, healthcare, energy systems, VLSI, smart transportation, biomedical sciences, agriculture, AI, robotics, and defense technologies.

Building on the success of IATMSI-2025, held from March 6–8, 2025, the 2026 edition aims to expand academic excellence and global collaboration. IATMSI-2025 received over 2800 submissions from 37 countries with an acceptance rate below 20%, featured eight keynote sessions from experts representing Intel, Amazon, IITs, IGCAR, and universities in the USA, Estonia, and Indonesia, and showcased over 400 technical papers across five thematic tracks. The hybrid format enabled wide participation and included tutorials, cultural events, city tours, and awards.

With the theme "Enabling the Change! Social Innovation for Sustainable Societies," IATMSI-2026 will again be hosted in Gwalior in hybrid mode, offering paper presentations, poster sessions, industry exhibits, and plenary talks to promote collaboration and innovation.

How to Register: For registration guidance, click on QR or visit to- <https://iatmsi.iitm.ac.in/registration/>

| Category | Early Bird Registration (Until 15.01.26) | | | | Normal Registration (After 15.01.26) | | | |
|-----------------|--|-----------------|--------------------|-----------------|--------------------------------------|-----------------|--------------------|-----------------|
| | Indian Delegates | | International Del. | | Indian Delegates | | International Del. | |
| | IEEE Member | Non IEEE Member | IEEE Member | Non IEEE Member | IEEE Member | Non IEEE Member | IEEE Member | Non IEEE Member |
| Without Reg Kit | 500₹ | 600₹ | 20\$ | 30\$ | 800₹ | 1000₹ | 30\$ | 40\$ |
| With Reg Kit | 2500₹ | 2600₹ | 50\$ | 80\$ | 2800₹ | 3000₹ | 80\$ | 90\$ |

Topics to be covered

- Introduction
- Fundamentals of On-chip Antenna Design
- Challenges in On-chip Antenna Design
- Design Methodologies and Techniques
- Successful Design Models
- Future Directions and Emerging Trends
- A Hands on Training Session on design and Simulation of On-chip antenna.