Debatosh Guha

FNA FASc FNASc FNAE
IEEE Fellow
Abdul Kalam Technology Innovation National Fellow

Debatosh Guha is a Professor in Radio Physics and Electronics, University of Calcutta and the former HAL Chair Professor of IIT Khargapur having 30+ years of experience in teaching, research, and administration in a couple of premiere Institutes of the country. He received the B. Tech., M. Tech., and Ph. D. degrees from the University of Calcutta in 1986, 1988, and 1994 respectively and had undertaken his post-doctoral research at the Canadian Defense University at Kingston, Ontario. He has made original contributions to developing planar antenna technology for the new generation radar and airborne systems which are frequently cited by other reserachers and widely applied to preactical applications. In recognition, Guha has been elected Fellow of all four National Academies in Science and Engineering which include INSA (Indian National Science Academy), IASc (Indian Academy of Sciences, Bangalore), NASI (The National Academy of Sciences, India), and INAE (Indian National Academy of Engineering). He is also a Fellow of IEEE and Abdul Kalam Technology Innovation National Fellow, DST-INAE, Govt. of India. He has served top three IEEE journals in his field as the Associate Editor and Section Editor.

He has been closely connected to several universities in North America, Europe, and Japan and is also actively involved with the university administration in different capacities. He has served several national level organizations and officially represented India in multiple international fora. He has given academic leadership to a number of international organizations for building perpetual national facilities for the young scientists, engineers, and students of the country. His idea and leadership helped creating India-centric international networks among the microwave and radio scientists through establishing international events such as IEEE Applied Electromagnetic Conference (AEMC- established in 2007), Indian Antenna Week, (IAW- established in 2010), Indian Conference on Antennas and Propagation (InCAP- established in 2018) and finally a merger of all these to form IEEE Microwaves Antennas and Propagation Conference (MAPCon- established in 2022). At present, Guha is holding a few key positions in both home and abroad, especially in promoting science and engineering at both national and international levels.

OFFICE
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ACADEMIC/PROFESSIONAL PREPARATION

1978 Madhyamik (Class X), W. B. Board of Secondary Education, 1st Division
1980 H. S. (Class XII), West Bengal Council of Higher Secondary Education, 1st Division
1983 B. Sc. Honors in Physics, University of North Bengal, 1st Class (Rank-1st)
1986 B. Tech. in Radio Physics and Electronics, University of Calcutta, 1st Class
1988 M. Tech. in Radio Physics and Electronics, University of Calcutta, 1st Class (Rank-1st)
1994 Ph. D. in Microwave Engineering, University of Calcutta, under the supervision of Prof. P. K. Saha
2004-2006 Post-Doctoral Research at the Royal Military College of Canada, Kingston, Ontario.

APPOINTMENTS & UNIVERSITY SERVICES

TEACHING

2008- Professor, Institute of Radio Physics and Electronics, University of Calcutta
2004-2008 Associate Professor, Institute of Radio Physics and Electronics, University of Calcutta
1998-2004 Asst. Prof./Lecturer-Sr. Grade, Inst. of Radio Physics and Elect., University of Calcutta
1994-1998 Asst. Professor/ Lecturer, Inst. of Radio Physics and Electronics, University of Calcutta

ADMINISTRATIVE

2023- Dean (acting), Faculty of Engineering and Technology, University of Calcutta
2017- 2019 Director, Centre for Research in Nanoscience and Nanotechnology, University of Calcutta
2016-2018 Head, Institute of Radio Physics and Electronics, University of Calcutta

ADJUNCT/ VISITING

2023- Adjunct Faculty at the Malaviya National Institute of Technology (MNIT), Jaipur, India
2015-2016 HAL Chair Professor at the Indian Institute of Technology (IIT), Kharagpur, India
2004-2006 Visiting Research Professor at the Royal Military College of Canada, Kingston, Canada

MAJOR HONORS AND FELLOWSHIPS

- Elected **Fellow of IEEE** 'for contributions to microstrip and dielectric resonator antennas', 2017
- Elected **Fellow of all Four Indian National Academies**
    1) **Fellow, Indian National Science Academy, INSA** (FNA), 2022
    2) **Fellow, Indian Academy of Sciences, IASc** (FASc), 2021
    3) **Fellow, The National Academy of Sciences, India, NASI** (FNASc), 2015
    4) **Fellow, Indian National Academy of Engineering, INAE** (FNAE), 2012
- **Abdul Kalam Technology Innovation National Fellow**, INAE/SERB, Govt. of India, 2020-2025
- **Fellow, West Bengal Academy of Science and Technology, WAST** (FAScT) 'for his notable contributions in the field of Radio Physics and Electronics', 2015
- **Fellow, Institution of Electronics and Telecommunication Engineers, IETE,** India (FIETE), 2015
- **Elected Full Member of Sigma Xi**, The Scientific Research Honor Society, 2021

OTHER AWARDS AND RECOGNITIONS

- **Distinguished Lecturer (DL) –** Selected as an academic leader/expert by the IEEE AP-Society in 2022.
- **11th Acharya P C Ray Memorial Award** (Kolkata), 'for distinguished achievements in innovations in Science and Technology, by Institute of Pulmocare and Research (a Medical Institute), Kolkata, 2020
- **IETE Ram Lal Wadha Award** (New Delhi) 'for his pioneering contribution in planar antenna

technique which resolves cross-polar radiation along with scan-blindness issues in large arrays and provides solution to industries in realizing advanced airborne radars', 2016

- **IEEE AP-S Raj Mittra Travel Grant (RMTG) Award** (Chicago) –Single recipient, with the award money of US$ 1000) selected by IEEE Antennas and Propagation Society RMTG Committee based upon potential aptitude for research in the domain of Antenna Engineering, 2012.

- **URSI Young Scientist Award** (Lille, France) – selected through a global competition by the URSI, awarded in the URSI General Assembly, Lille, France in 1996.

LEADERSHIP IN PROFESSIONAL SOCIETIES

2024-	Invited to serve **The European Association on Antennas and Propagation (EurAAP)** as an academic leader cum technical expert
2024-	Invited to serve the **IEEE Fellow Search Committee** for the AP Society as a memmber
2023-	**Chair,** IEEE AP-S Member and Geographic Activities Committee
2022-	IEEE AP-S **Distinguished Lecturer** – selected as an international expert in the field of antenna technology for delivering lectures to the Universities and Industries across the globe
2022-	**Chair/Member,** IEEE Technical Committee on Antenna Measurements
2022-	**Chair**, Indian National Academy of Engineering, Kolkata Chapter
2022-	Served the **Indian Academy of Sciences -** Sectional Committee for Engineering (https://www.ias.ac.in/About_IASc/Committees/)
2021-2023	Served **Indian National Academy of Engineering** (INAE) - Sectional Committee VI for Electronics and Communication Engineering)
2018-2019	**IEEE Fields Award Committee**, served as a member/expert in Awardee Selection Process
2017-2020	**Vice-President**, West Bengal Academy of Science and Technology
2016	Co-founder, Indian Radio Science Society (InRaSS) (https://www.inrass.in/)
2015-	**Chair for URSI Commission B (Fields and Waves) from India,** taking part in decision making and organizing the URSI Commission-B activities across the globe.
2014	**Asia Liaison**, 8th European Conference EUCAP, Hague, The Netherlands
2013-2014	**Chair**, IEEE Kolkata Section, India

GOVERNMENT & SOCIETAL RESPONSIBILITIES

2023-	Chairman, 5G Laboratory and Evaluation Committee, Information Technology & Electronics Department, Government of West Bengal, India
2021-	DST-SERB Programme Advisory Committee, Govt. of India
2021-	INSA-INSPIRE Committee
2016-2020	INSA Joint National Committee member for COSPAR-URSI-SCOSTEP
2016-2019	Member, Board of Studies, Defence Institute of Advanced Tech, Govt. of India, Pune
2019	Commission-B Lead: URSI Asia Pacific Radio Science Conference (AP-RASC)
2016-	Technical Experts' Committee for RF and Microwaves, Ministry of Electronics and Information Technology, Govt. of India

ACADEMIC & ORGANIZATIONAL LEADERSHIP

2018-	Founding Chair & Course Director, Advanced School of Antennas (IEEE AP-S sponsored)
2018	Founding Member, Indian Conference on Antennas and Propagation (InCAP)
2015	General Co-Chair: IEEE AP-S Industry Initiatives Committee Workshop, Ahmedabad
2014	General Chair: IEEE Calcutta Chapter Conference - CALCON, Kolkata
2003-2004	Founding Chair, IEEE AP-MTT Kolkata Chapter
2009-2011	General Chair, IEEE Applied Electromagnetics Conference, Hyatt Regency, Kolkata
2010	Founding Chair, Indian Antenna Week, Mayfair, Puri (1st IEEE AP-S sponsored International Workshop outside North America
2007	Founding Chair, IEEE Applied Electromagnetics Conference, CU, Kolkata
2018	Founding Proposer/Executive Committee member, IEEE Indian Conference on Antennas and Propagation (InCAP) as the flagship IEEE AP-S sponsored conference in India.
2022	Founding member of the Executive Committee, IEEE Microwaves, Antennas and Propagation Conference, MAPCON as the flagship IEEE AP-S/MTT-S sponsored conference in India.
2024-	Representing India in the International Steering Committee, ISAP, Japan

FOREIGN ASSIGNMENTS AND VISITS

1996	28 Aug-5 Sept	URSI General Assembly, **Lille, France**, to the URSI Young Scientist Award.
2002	25-26 June	University of **Houston, USA**, as a Visiting Researcher, giving an invited talk
2005	3-8 July	IEEE AP Symposium, **Washington, D.C. USA** for presenting research papers
2006	6-10 Nov	The first European Conf. EuCAP 2006, **Nice, France**, to present papers
	13-14 Nov	Queen Mary, University of **London, UK**, invited talk and interactions
	15-17 Nov	University of **Bath, UK**, visiting researcher and Seminar Lectures
2007	15 July-14 Aug	RMC Canada, **Kingston, Ontario**, Visiting Professor for collaborative research
2008	2 -28 July	RMC Canada, **Kingston, Ontario**, Visiting Professor, experimental works.
	7-16 Aug.	URSI General Assembly, **Chicago** as the Indian Chair/Representative to Comm-B
2010	2-4 Aug	**Syracuse University, USA**, Academic visit and Collaborative research
	16-19 Aug	URSI Symp. EM Theory**, Berlin, Germany** as a Special Session organizer/Chair
2012	8-14 July	IEEE AP, **Chicago, USA**, as RMTG Awardee and present research papers
	17-19 July	University of Edmonton, **Alberta, Canada** as Invited Speaker to IEEE Workshop
	20 July-15 Aug	RMC Canada, **Kingston, Ontario**, Visiting Professor and collaborative research
2013	2-3 March	IEEE R-10 Meeting, **Chaing Mai, Thailand**, as IEEE Kolkata Section Chair.
	2-6 July	**San Diego State University, USA**, to explore collaborative programs.
	7-13 July	IEEE AP Symposium, **Orlando**, present paper and attend Chapter Chair Meeting
2014	7-12 July	IEEE AP Symposium, **Memphis, USA** to receive IEEE award and present papers
	22-24 Aug	IEEE Section Congress, **Amsterdam, Netherlands**, as the section Chair, Kolkata
	25-28 Aug	**Karlsruhe Institute of Technology, Germany**, Visiting Scientist
	12-14 Sept	Chuo University, **Tokyo, Japan,** Keynote Speaker in Japan Radio Science Meeting
	15-16 Sept	City University, **Hong Kong**, visiting scientist and seminar talks.
2016	21-25 Aug	URSI AP-RASC, **Seoul, Korea**, Invited Speaker, Indian delegation

2017	9-15 July	IEEE AP Symposium, **San Diego, USA**, IEEE Fellow felicitation, YSC judge
	19-26 Aug	URSI General Assembly, **Montreal,** Indian representative, India Comm-B Chair
	28 Aug-8 Sept	Royal Military College of Canada, **Ontario,**Visiting Professor
2018	8-14 July	IEEE AP Symposium, **Boston, USA**, technical talks and editorial board meetings
	15-29 July	Royal Military College of Canada, **Ontario,** Visiting Professor
	30-31 July	Waterloo Institute of Nanotechnology, **Canada**, to execute a MoU with CU
2022	25-26 Nov	**University of Pisa, Italy**, invited for IEEE Distinguished Lecture Series
	27-28 Nov	Sapienza University, **Rome, Italy,** invited for IEEE Distinguished Lecture Series
2023	23-24 Aug	**Hokkaido University, Sapporo**, Japan, invited for IEEE Distinguished Lecture
	25-26 Aug	**Kumamoto University, Japan**, invited for IEEE Distinguished Lecture Series
	30 Oct-1 Nov	Mediterranean Microwave Symposium, **Tunisia**, Keynote Speaker
	6-10 Nov	City University of **New York, USA**, visiting scientist
	15-17 Nov	IEEE Intl. Conf. CAMA, **Genoa, Italy**, Organize and Chair a Special Session
2024	20-23 Feb	Florida International University, **Orlando, USA**, Invited Talks
	4-6 March	**Hiroshima University, Japan**, Special Session in the IEICE Conference
	10-13 July	**University of Trento, Italy**, invited Distinguished Lecture of IEEE AP-Society
	14-19 July	IEEE AP Symp., **Florence, Italy,** Invited talks and Committee Chairs' meeting

SERVICE AS JOURNAL EDITOR

2015-2019	**Associate Editor** of ***IEEE Antennas and Wireless Propagation Letters***
2016-2021	**Associate Editor** of ***IEEE Transactions on Antennas and Propagation*** (outstanding performance award in 2017-2018 and 2020-2021)
2023-2024	**Section Editor** of ***IEEE Antennas and Propagation Magazine***

SERVICE AS TPC CHAIR/MEMBER (major international events)

2013	PIERS- Progress in Electromagnetics Research Symposium, Stockholm, Sweden
2013	Advances in Computational Methods in Electromagnetics (ACME), Helsinki, Finland
2013	URSI-EMTS - Commission B Intl. Symp. Electromagnetic Theory, Hiroshima, Japan
2014	Advances in Computational Methods in Electromagnetics (ACME), Bologna, Italy
2014	Intl. Workshop on Antenna Technology (iWAT), Sydney, Australia
2020	IEEE AP-S/URSI Symposium, Montreal, Canada
2021	IEEE AP-S/URSI Symposium, Singapore
2023	URSI GASS, Sapporo, Japan
2024	Atlantic Radio Science Meeting (AT-RASC) 2024, Gran Canaria, Spain
2024	IEEE AP-S/URSI Symposium, Florence, Italy
2025	25th Intl. Symposium on Electromagnetic Theory (EMTS 2025), Bologna, Italy

SELECTED INVITED SEMINARS AND KEYNOTE TALKS (LAST 2 YEARS)

2024

- IEEE AP-S 75th Anniversary Celebratory Address: "In the light of 75th Anniversary of IEEE AP Society", IEEE SPACE, Bangalore, 22 July 2024.
- Invited Talk in the AP-S 75th Anniversary Celebratory Special Session 'Understanding Our History': "Defected Ground Structure (DGS) based Antennas", 2024 IEEE Intl. Symp. Antennas and Propagation and ITNC-USNC-URSI Radio Science Meeting, Florence, Italy, 18 July 2024.
- Distinguished Lecture- IEEE AP-S: "Uniformly low cross-polar design of planar antenna and arrays: advances in engineering and new insights", University of Trento, Italy, 12 July 2024.
- Keynote Talk: "Role of antenna science and engineering: in the light of 75th Anniversary of IEEE AP Society", IEEE Hyderabad Section, Hyderabad, 28 June 2024.
- Keynote Talk: "75th Anniversary of IEEE AP Society - a landmark on the Journey", IEEE Kerala Section, Trivandrum, 19 April 2024.
- Keynote Talk: " IEEE, Our Profession, and Beyond", IEEE Faculty Conclave, Bangalore Section,, 16 March 2024.
- Keynote Talk: "Defected Ground Structure (DGS): A Versatile Technique for Improved Antenna Design", IEEE AP-S Special Session in IEICE 2025 Conference, Hiroshima, Japan, 5 March 2024.
- Invited talk: "Defected Ground Structure (DGS) Based Antenna Design", Florida International University, Miami, USA, February 21, 2024.
- Invited Talk: "IEEE and AP-S Society-the Professional Aspects and Benefits" and "Wireless: a magical blend of Science and Engineering", IEEE APS SBC, Manipal University, IEEE AP-S Chapter, Jaipur, January 25, 2024.
- Lecture Series: Indian Radio Science Society (InRaSS) Lecture Series (Online), "Creativity and Innovation: Challenges in Scientific Research", January 14 and 28, 2024.

2023

- Keynote Talk "Antenna Measurements: Art and Challanges" Special Session SPS10 in IEEE International Conference on Antennas and Applications (2023 IEEE CAMA), Genoa, Italy, 15-17 Nov. 2023.
- Lecture Series "On engineered surface and applications to antenna engineering" Advanced Science Research Center, City University of New, USA 6-10 Nov. 2023.
- Keynote Talk "Some Challenges in Microstrip Antenna Design and State-of-the-art Solutions" Mediterranean Microwave Symposium , Tunisia, 1 Nov. 2023.
- Distinguished Lecture Series in Japan: "Mysteries in Dielectric Resonator Modes and Some Techniques for Advanced Antenna Designs" Kumamoto University, Kumamoto, Japan, 25 Aug. 2023.
- Distinguished Lecture Series in Japan: "Is antenna made of mathematics? - Search for a missing link between Maxwell's theory and Practice" Hokkaido University, Sapporo, Japan, 23 Aug. 2023.
- Invited Talk: 'Is it difficult to Measure an Antenna?', URSI YS School, Sapporo, Japan, Aug. 19-20, 2023.
- Invited Talk: 'Electronics- when and how?" National Institute of Technology Jaipur, 29 April, 2023.
- Invited Talk: 'Is Antenna made of Mathematics?', IEEE APS SBC, IIT Kharagpur, March 29, 2023.
- Distinguished Lecture at SRM University 'Challenges in Antenna Research', Chennai, 25 March 2023.
- Distinguished Lecture at SASTRA Deemed University 'It is Antenna Engineering which transformed the Technology', Thanjavur, 25 March 2023.
- Distinguished Lecture at SASTRA Deemed University 'Metallodielectric Resonator Antenna and its Challenges' Thanjavur, 24 March 2023.
- Distinguished Lecture at DRDO, Bangalore Section of IEEE, 'In Search of Science behind Some Antenna Innovations' Bangalore, 23 March 2023.
- Invited Talk: 'Power of EM Simulation Tools: my little experience', at the Department of Electronics Engineering, Indian Institute of Technology, BHU, Varanasi, Jan. 6, 2023.

INNOVATIVE EDUCATIONAL PROGRAMMES

2010 **Indian Antenna Week** (IAW, as IEEE AP-S sponsored International Summer School) – was designed and introduced by Prof. Guha in 2010 as an annual international antenna workshop with the direct association of and sponsorship from the IEEE AP-Society. The purpose was to train the young scientist and research students with the advanced technology and innovations.

2018 **Advanced School of Antennas** (ASA, as IEEE AP-S sponsored International Summer School) – a yearly residential summer school designed and organized at the national level (under the umbrella of IEEE) to offer a 2-credit equivalent course to a maximum of 75 young scientists, faculty members, researchers, and PG level students from different parts of the country. Prof. Guha has served as the founder and course director for all the editions since 2018.

INDUSTRY AND RESEARCH COLLABORATIONS

2021-	James Watt School of Engineering, University of Glasgow, UK
2021-	HCL Technologies Limited, Chennai, India
2007-	U R Rao Satellite Centre, Indian Space Research Organization (ISRO)
2017-2020	Indian Institute of Technology Kharagpur
2005-2007	SPOTWAVE (www.spotwave.com), Canada
2004-2019	Royal Military College of Canada, Ontario

RESEARCH CONTRIBUTIONS

- **Conceived and introduced Defected Ground Structure (DGS)** integration techniques to planar antennas for mitigating cross-polarized radiations and mutual coupling in array elements [*IEEE AWPL*, 4, 455-458, 2005]. This has been eventually established it as an attractive and industry-qualified technique.
- **Introduced a new radiating mode** ($HEM_{12\delta}$) in cylindrical shaped Dielectric Resonator Antenna (DRA) and successfully resolved the challenges of its excitation by innovating a series of novel feeds [*IEEE TAP*, 60 (1), 71-77, 2012]. This overall approach enables cylindrical DRA qualified for on-chip implementation.
- **Developed glue-free mount for Dielectric Resonator Antennas** [*IEEE AWPL*, 16, 2440-2443, 2017] for the first time. This is going to solve the major weakness of using this antenna on vibrating platforms like air-borne and space-borne systems.
- The **sources of cross-polar fields** in printed antennas have been thoroughly **identified** and the first-time solution to the high cross-polar fields across the skewed radiation planes has been reported [*IEEE TAP*, 68 (6), 4950 - 4954, 2020], [*IEEE AWPL*, 19 (1), 99-103, 2020]. This enables major improvements of SAR antennas and is already in process for the practical applications.
- **A new class** of metalodielectric **hybrid subarray has been introduced** with the aim of achieving maximum advantage out of minimum feed and element requirements [*IEEE TAP*, 69 (7), 3778 - 3787, 2021].
- **A new theory** of 'open cavity resonant antenna' along with an AI-based design has been developed to substitute traditional Fabry-Perot cavity [*IEEE AWPL*, 20 (5) 678-682, 2021]. A unique feed for satellite-borne reflectors has been developed in collaboration with ISRO.

PH. D. STUDENTS SUPERVISED (18 Awarded; 5 Under Supervision)

- Jawad Y. Siddiqui	('Theoretical and experimental studies on some microstrip antennas of different, configurations', 2005)
-Manotosh Biswas	('Computer aided design and experimental studies of some microstrip antennas with conventional and modified ground structures', 2008)
-Sudipta Chattopadhyay	('Theoretical and experimental studies of some aspects of a rectangular microstrip patch antenna', 2011)
-Chandrakanta Kumar	('Investigations into cross-polarized radiations from probe-fed microstrip antennas and their suppression using defected ground structure', 2012)
- Bidisha Gupta	('On some novel wideband and ultrawideband monopole type dielectric resonator antennas', 2013)
- Sujoy Biswas	('Design and characterization of some new defected ground structures and their applications to microstrip/Dielectric resonator antennas', 2014)
-Archita Banerjee	('Novel technique to excite new radiating mode in practical dielectric resonator antennas', 2015)
-Halappa R. Gajera	('New approach of metallic and dielectric perturbation in cylindrical dielectric resonator antennas to control the modal fields and the radiation characteristics', 2017)
- Koushik Dutta	('New concept, theory, and advanced design of resonance cavity antenna', 2017)
- Satyajit Chakrabarti	('On some novel techniques to realize multi polarization/multi frequency shared aperture antenna', 2018)
-Debarati Ganguly	('Ultrawideband (UWB) antennas: innovative technique for time domain characterization and some novel designs of UWB monopoles', 2019)
-Chandreyee Sarkar	('Novel feeds and mounts for advanced microstrip and dielectric resonator antenna designs', 2019)
-Poulomi Gupta	('On some novel techniques to realize unconventional higher order radiating modes in cylindrical dielectric resonator antennas', 2019)
-Suvadeep Choudhury	('Substrate integrated waveguide inspired planar and 3D antennas for microwave and millimeterwave applications', 2019)
-M. Intiyas Pasha	('Novel designs of defected ground structure-integrated microstrip antennas and arrays for improved radiation characteristics, 2020)
-B. Pavan Kumar	('Advanced design of active spherical phased array antenna and elements for satellite application', 2021)
-Debi Dutta	('Planar and non-planar techniques to mitigate cross-polarization issue in microstrip antennas', 2024)
-Sk Rafidul	('Identification of possible cross-polar sources in microstrip and dielectric resonator antennas and novel mitigation techniques, 2024)

BOOKS - MONOGRAPHS

- D Guha, C. Kumar, and S. Biswas, **Defected Ground Structure Based Antennas**, **IEEE PRESS-WILEY (USA), 2023**

- D. Guha and Y. Antar (Ed.), **Microstrip and Printed Antennas**, **WILEY INT. SCI. (UK) , 2011**

JOURNAL PAPERS (**75** in **IEEE, 24** in IEE/IET/other **Journals**)

1. K. Dutta, M. O. Akinsolu, P. K. Mishra, B. Liu, and **D. Guha**, "Paper Title: Application of Machine Learning-Assisted Global Optimization for Improvement in Design and Performance of Open Resonant Cavity Antenna," ***IEEE Open J. Antennas and Propagat***., Vol. 5, No. 3, pp. 693-704, June 2024 (DOI: 10.1109/ OJAP. 2024. 338 5675).
2. C. Sarkar, S. Rafidul, C. Kumar and **D. Guha**, "A Way to Address Inherent Weakness in Conceiving the Ground Plane Geometry for a Microstrip Antenna," ***IEEE Open J. Antennas and Propagat.***, Vol. 5, No. 2, pp. 516-524, Apr. 2024 (DOI: 10.1109/OJAP.2024.3366694).
3. Sk. Rafidul, C. Kumar, and **D. Guha**, "A Technique to Realize Aperture Coupled Microstrip Patch as a Truly Low Cross-polar Antenna by Mitigating the Major Issues over its Skewed Radiation Planes," ***IEEE Open J. Antennas and Propagat***., Vol. 4, pp. 754-763, 2023, (DOI: 10.1109/OJAP.2023.3295423) .
4. Sk. Rafidul, **D. Guha**, and C. Kumar, "Sources of Cross-polarized Radiations in Microstrip Patches: Multi-Parametric Identification and Insights for Advanced Engineering," ***IEEE Antennas and Propagation Mag.,*** Vol. 65, no. 2, pp. 92-103, April 2023.
5. D. Dutta, **D. Guha**, and C. Kumar, "A Concept of Advanced Design Governed by Theoretically Predicted Current Distributions on the Ground Plane Beneath an Aperture-Fed Microstrip Antenna," ***IEEE Open J. Antennas and Propagat***., vol. 4, pp. 461-471, 2023 (DOI: 10.1109/OJAP.2023.3267299).
6. Sk. Rafidul, P. Mishra, R. Bose, and **D. Guha**, "Uniformly Improved Cross-polar Discrimination in a Dielectric Resonator Antenna by Conduction Current Control," ***IEEE Trans. Antennas and Propagat***., Vol. 71, No. 3, pp. 2820- 2825, March 2023.
7. R. K. Chakraborty and **D. Guha** "DRA Induced Conduction Current on the Metallic Ground Plane: Interesting Observations on its Impact and Usefulness," ***IEEE Antennas and Propagation Mag***., vol. 65, no. 1, pp. 49-59, Feb. 2023.
8. C. Kumar, C. Sarkar, and **D. Guha**, "Radiating Mode Induced Cross-Polar Source in Microstrip Patch: Identification and Solution," ***IEEE Antennas Wireless Propagation Lett.***, Vol. 21, No. 10, pp. 2080- 2084, Oct. 2022.
9. D. Dutta, **D. Guha**, and C. Kumar, "Microstrip patch with grounded spikes: a new technique to discriminate orthogonal mode for reducing cross-polarized radiations," ***IEEE Trans. AntennasPropagat.***, Vol. 70, No. 3, pp. 2295 - 2300, March 2022.
10. C. Sarkar, **D. Guha**, and C. Kumar, "Source of Cross-Polar Fields in a Triangular Patch: Insight and Experimental Proof," ***IEEE Antennas and Wireless Propagation Letters*** Vol. 20, No. 12, pp. 2437 - 2441, Dec. 2021.
11. P. Gupta, **D. Guha**, and C. Kumar, "Dual-Mode Cylindrical DRA: Simplified Design with Improved Radiation and Bandwidth," ***IEEE Antennas and Wireless Propagation Lett.***, Vol. 20, No. 12, pp. 2359 - 2362, Dec. 2021.
12. C. Sarkar, **D. Guha**, and C. Kumar, "Hybrid Subarray Using a New Concept of Feed for Advanced Antenna and Array Designs," ***IEEE Trans. Antennas Propagat***., vol. 69, no. 7, pp. 3778 - 3787, July 2021.
13. D. Dutta, **D. Guha**, and C. Kumar, "Mitigating Unwanted Mode in a Microstrip Patch by a Simpler Technique to Reduce Cross-Polarized Fields over the Orthogonal Plane," ***IEEE Antennas and Wireless Propagation Lett.***, Vol. 20, No. 5, pp. 678 - 682, May 2021.
14. K. Dutta, P. Mishra, S. Manna, A. Pal, and **D. Guha**, "Geometrical Optics Based Advanced Design of an Open Cavity Resonant Antenna," ***IEEE Antennas and Wireless Propagation Lett.***, Vol. 20, No. 3, pp. 322-326, March 2021.
15. C. Kumar, and **D. Guha**, "Higher Mode Discrimination in a Rectangular Patch: New Insight Leading to Improved Design with Consistently Low Cross-Polar Radiations," ***IEEE Trans. Antennas Propagat***., vol. 69, no. 2, pp. 708 - 714, Feb. 2021.
16. C. Kumar and **D. Guha**, "Mitigating Backside Radiation Issues of Defected Ground Structure Integrated Microstrip Patches," ***IEEE Antennas and Wireless Propagation Lett.***, Vol. 20, No. 12, pp. 2502 - 2506, Dec. 2020.
17. I. Pasha, C. Kumar, and **D. Guha**, "Mitigating High Cross-Polarized Radiation Issues over the Diagonal Planes of Microstrip Patches," ***IEEE Trans. Antennas Propagat***., vol. 68, no. 6, pp. 4950-4054, June 2020.
18. S. Choudhury, A. Mohan, P. K. Mishra, and **D. Guha**, "Reconfigurable Dual-Fed Horn with Pattern Switchability Realized by SIW Technology," ***IEEE Trans. Antennas Propagat***., Vol. 68 , No. 5, pp. 4072-4076, May 2020.
19. B. P. Kumar, **D. Guha**, and C. Kumar, "Reduction of Beam Squinting and Cross-Polarized Fields in a Wideband CP Element," ***IEEE Antennas and Wireless Propagation Lett.***, Vol. 19, No. 3, pp. 418-422, March 2020.

20. P. Gupta, **D. Guha**, and C. Kumar, "Higher Mode Based Wideband Antenna Design Using an Engineered Cylindrical Dielectric Resonator," ***IET Microwaves, Antennas and Propagations***, Vol. 14, No. 4, pp. 241-246, March 2020.
21. D. Ganguly, **D. Guha**, and Y. Antar, "Cross-Finned UWB Monopole for Wireless Applications: Design Insight and Characterization," ***AEÜ-Int. J. Electronics and Communications***, Vol. 116, March 2020.
22. C. Kumar and **D. Guha**, "Asymmetric and Compact DGS Configuration for Circular Patch with Improved Radiations," ***IEEE Antennas and Wireless Propagation Lett.***, Vol. 19, No. 2, pp. 355-357, Feb. 2020.
23. D. Dutta, Sk Rafidul, **D. Guha**, and C. Kumar, "Suppression of Cross-Polarized Fields of Microstrip Patch across All Skewed and Orthogonal Radiation Planes," ***IEEE Antennas and Wireless Propagation Lett.***, Vol. 19, No. 1, pp. 99-103, Jan. 2020.
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CONFERENCE ARTICLES **175+** (*not listed here*)

PATENTS GRANTED -3, UNDER REVIEW-1

1. **Patent No 520544 (application no 201731000973)** (India) Granted with effect from 10 Jan 2017
   Inventors: D. Guha, C. Sarkar, C. Kumar, S. Biswas
   Title: Novel Dielectric Resonator Antenna and Array Structure to avoid adhesive or glue
2. **Patent No 525590 (application No.: KOL/201831003527)** (India) Granted with effect from 30 Jan 2018
   Inventors: S. Choudhury, A. Mohan, and D. Guha
   Title: A Millimeter Wave Horn Antenna

3. **Patent No 523964 (application No.: KOL/201831037619)** (India) Granted with effect from 04 Oct 2018
   Inventors: S. Choudhury, A. Mohan, and D. Guha
   Title: A Substrate Integrated Waveguide based Multi-Horn Antenna
4. **Patent Application No.: 201931008444** (India)
   Inventors: D. Guha, M. Pasha, and C. Kumar.
   Title: Microstrip Patch with Reduced Cross Polarized Radiations over Entire Skewed Radiation Planes

DOCTORAL STUDENTS' PROFILE

- National Science and Engineering Academy Fellows (1)
- URSI Young Scientist and equivalent Award winers (6)
- Professors at the Universities and Institutes in India (5)
- ISRO Scientist (5)
- Other Govt. Laboratories (2)
- US Industries (2)
- Industry Leader (1)
- Post-Doctoral Research Fellow in the US/Canada/Europe (6)