

Electronics and Communication Engineering

Research Publication List from 2019 onwards

Patents

- Patent “A Novel Meander Line Multiband Antenna with Parasitic Elements”. F.No. 201911003653 dated 30th Jan. 2019 (Published on 22nd Feb. 2019 journal no. 08/2019). Granted on 21/09/2023.
- Patent “Slotted Wheel Microstrip Patch Antenna Based RF Energy Harvesting System” F.No. 201941017384 dated 01st May 2019 (Published on 10th May 2019 journal no. 19/2019). Granted on 15/03/2024.
- Australian Patent granted on 14 April 2021 Titled “A Defected Ground Antenna for Wireless body area network” Patent No.- 2021100926 dated 14th Feb.2021.
- Patent Applied for “An Automated and Adaptive Self-Power Generate Garbage Notification”. F.No. 201911004222 dated 3rd Feb. 2019 (Published on 22nd Feb. 2019 journal no. 08/2019).
- Patent Applied for “A Novel Multiband Antenna for 5G Wireless Communications”. F.No. 201911008824 dated 7th Mar. 2019 (Published on 29th Mar. 2019 journal no. 13/2019).
- Patent Applied for “A Novel Dual Band Antenna for Wireless Body Area Network”. F.No. 201911037562 dated 18th Sept. 2019 (Published on 27th Sept. 2019 journal no. 39/2019).
- Patent Applied for “Automatic Pest Control System for Protection of Grains in Public Warehouses”. F.No. 201941046823 dated 18th Nov. 2019 (Published on 29th Nov. 2019 journal no. 48/2019).
- Patent Applied for “A Novel Multiband Hybrid Fractal Antenna with Parasitic Element”. F.No. 201911049193 dated 29th Nov. 2019 (Published on 20th Dec.2019 journal no.51/2019).
- Patent granted for “PRANA MASK 2020”. F.No. 202041044180 dated 10th Oct. 2020 (Published on 16th Oct..2020 journal no.42/2020).
- Australian Patent granted on Titled “A DEFECTED GROUND ANTENNA FOR WIRELESS BODY AREA NETWORK” Patent No.- 2021100926 dated 14th Feb.2021.
- Design Patent granted for “Blood Glucose Meter” application No. 377767-001 dated 21/01/2023.
- Design Patent granted for “10-GON SHAPED COPLANAR MIMO ANTENNA” application no. 384232-001 dated 18/04/2023.
- Design Patent granted for “A Defected Ground Plane Wheel Shaped Fractal Antenna” application no. 417276-001 dated 17/05/2024.

Journal Papers

- Himanshu, R K Khanna, and Anil Kumar, Artificial intelligence applications for target node positions in wireless sensor networks using single mobile anchor node, [Computers & Industrial Engineering](#), by Elsevier, vol. 167, May 2022 (SCI) Impact factor 6.7.

- Himanshu, R K Khanna, and Anil Kumar, Knowledge acquisition for 3D coordinates of target in wireless sensor networks for smart city application, Expert Systems (Wiley) Impact factor 2.587, (SCI) (2021)
- Neeraj Sharma and Bhasker Gupta, “Low-complexity non-iterative hybrid precoding scheme for millimeter wave massive MIMO systems” International Journal of Electronics, vol. 109, no. 3, pp. 410-426, Mar 2022.
- K. Thakur, B. Gupta, B.S. Sohi, “Phase equalised Wiener filter-based hybrid precoding for massive MIMO systems”, International Journal of Ultra Wideband Communications and Systems, vol. 4, no. 2, pp. 104-109, Oct 2020.
- K. Thakur, B. Gupta, B.S. Sohi, “Approximating 5G: Almost there or far behind” International Journal of Advanced Science and Technology, vol. 29, no. 10, pp. 2816-2826, May 2020.
- Bhasker Gupta, Vipin Balyan and Davinder S. Saini, “QOSTBC coded MIMO system with reduced complexity and optimised decoding for rank deficient channels” IET Communications, Vol, 14, No. 4, PP. 646-654, Mar. 2020.
- K. Thakur, B. Gupta, B.S. Sohi, “BER Analysis of Hybrid Precoded Massive MIMO Systems in Downlink with Receiver Beamforming over mmwave Channels” International Journal of Innovative Technology and Exploring Engineering (IJITEE), vol. 8, no. 9s, pp. 561-566, July 2019.
- Vipin Balyan, Davinder S. Saini, and Bhasker Gupta, “Service Time-Based Region Division in OVSF-Based Wireless Networks with Adaptive LTE-M Network for Machine to Machine Communications,” Journal of Electrical and Computer Engineering (Hindawi Publishers), vol. 2019, Article ID 3623712, 8 Pages, 2019.
- S. Saini and D. S. Saini, “Modelling And Analysis Of Fully Integrated 3:2 Switched Capacitor Dc-Dc Converter,” JPAS, vol. 23, pp. 228–233, Feb. 2024 (UGC /Peer reviewed journal).
- S Saini, DS Saini, Performance Modelling and Design Techniques for Efficiency Improvement in On-chip Switched-Capacitor DC-DC Converter, Wireless Personal Communications 127 (4), 3379-3405, Dec 2022, SCI
- A Thakur, DS Saini, Mitigating peak side-lobe levels in pulse compression radar using classical orthogonal polynomials, Wireless Networks 28 (7), 2889-2899, Oct 2022, SCI
- A Thakur, DS Saini, Modifying polyphase codes to mitigate range side-lobes in pulse compression radar, Wireless Personal Communications 123 (1), 693-707, Mar 2022, SCI
- A. Thakur and D. S. Saini, “MIMO radar sequence design with constant envelope and low correlation side-lobe levels,” International Journal of Electronics and Communications, vol. 136, Jul. 2021. SCI
- A. Thakur and D. S. Saini, “Correlation processor based side-lobe suppression for polyphase codes in radarsystems,” Wireless Personal Communications, vol. 115, pp. 377-389, Nov. 2020. SCI
- A. Thakur and D. S. Saini, “Bandwidth optimization and side-lobe levels reduction in PC radar using Legendre orthogonal polynomials,” Digital Signal Processing, vol. 101, Jun. 2020. SCI
- B Gupta, V Balyan, DS Saini, QOSTBC coded MIMO system with reduced complexity and optimised decoding for rank deficient channels, IET Communications 14 (4), 646-654, 2019. SCI

- V Balyan, DS Saini, B Gupta, Service Time-Based Region Division in OVSF-Based Wireless Networks with Adaptive LTE-M Network for Machine to Machine Communications, Journal of Electrical and Computer Engineering, 2019, <https://doi.org/10.1155/2019/3623712>, SCI
- Sarabpreet Singh, Rohit Batra , Ridhi Jain , Dr.Shilpa Jindal , “Cost Effective Wireless Humanoid Hand” in thirty Fifth National Convention of Electronics and Telecommunication Engineers on “Intelligent Electronics Systems for State-of-the-Art Healthcare System” Organized by The Institution of Engineers (India),Haryana State Centre in association with Technology Education and Research Integrated Institute ,Kurukshetra on October 19-20, 2019, Proceedings of the Conference published in the special issue of International Journal of Management, Technology And Engineering, a UGC approved peer reviewed & refereed journal; ISSN No. 2249-7455.
- Shilpa Jindal, Dinesh Sharma, Purnima K Sharma “ Analysis of Erbium Doped Fiber Amplifier on 16 Channel WDM System at 40 Gbps using NRZ Modulation Scheme” IJRAR. May 2019, Volume 6, Issue 2 E-ISSN 2348-1269, P- ISSN 2349-5138). UGC and ISSN Approved - International Peer Reviewed Journal, Refereed Journal, Indexed Journal,
- Shilpa Jindal, Dinesh Sharma, Purnima K Sharma, “ Effect of Chromatic Dispersion on Multimode Fiber with varying Profile for Optical Access Networks” International Journal for Research in Engineering Application & Management (IJREAM) ISSN : 2454-9150 Vol-05, Issue-02, May 2019.
- Shilpa Jindal “A Kagome Crest Fractal Optimized Quad-band antenna for wireless applications” in IIETA Vol 40, No. 2, April 2023, pp 719-726.
- Rahul Narang (CO19548), Vanshita Bansal (CO19562), Vasu Goel (CO19563) and Dr. Shilpa Jindal published a research paper titled "Development of Green, Low-Cost Smart Crop Health Monitoring System Using IOT," in the “Insights: An International Interdisciplinary Journal Volume 1, Issue 2 pp 11-19, 2023.
- Shilpa Jindal, Dinesh Sharma and Purnima K Sharma, “Analysis of Erbium Doped Fiber Amplifier on 16 Channel WDM System at 40 Gbps using NRZ Modulation Scheme” IJRAR May 2019, Volume 6, Issue 2, Page no. 976-981. (UGC Approved).
- Shilpa Jindal, Dinesh Sharma and Purnima K Sharma, “Effect of Chromatic Dispersion on Multimode Fiber with varying Profile for Optical Access Networks” International Journal for Research in Engineering Application & Management (IJREAM) ISSN: 2454-9150 Vol-05, Issue-02, May 2019 . (UGC Approved).
- M. Vinod kumar and Dinesh Sharma, “Enhancement of Gain and Reduction of Backward Radiation Using Metasurface Antenna for Energy Harvesting Applications” Traitement du Signal, Vol. 39, No. 2, April, 2022, pp. 755-762. ISSN: 0765-0019 (print); 1958-5608 (online), <https://doi.org/10.18280/TS.390241>. [SCIE]
- Dinesh Sharma et.al., “A Kagome Crest Fractal Optimized Quad-Band Antenna for Wireless Applications” Traitement du Signal, Vol. 40, No. 2, April, 2023, pp. 719-726. ISSN: 0765-0019 (print); 1958-5608 (online), <https://doi.org/10.18280/ts.400231>. [SCIE]
- M. Vinod kumar and Dinesh Sharma, “Design of High Gain Metasurface Antenna Using Hybrid African Vulture’s Optimization and Capuchin Search Algorithm for RF Energy Harvesting” Wireless Personal Communication (July 2023), <https://doi.org/10.1007/s11277-023-10583-1>. [SCI]
- Purnima K. Sharma*, Jerzy R. Szymański, Marta Żurek-Mortka, Mithileysh Sathiyarayanan and Dinesh Sharma, “Design and Analysis of Four Leaf Clover Shaped

MIMO antenna for Sub-6 GHz V2X applications” *Frequenz (DE GRUYTER)* –March 2024. DOI: 10.1515/freq-2023-0076 [SCI].

- Purnima K Sharma, TJVSRao, TVNL Aswini, Dinesh Sharma, “ Living Plant or Tree as a Renewable Energy Source of Long Lasting Battery” *Tuijin Jishu/Journal of Propulsion Technology* ISSN: 1001-4055 Vol. 45 No. 1 (2024), <https://doi.org/10.52783/tjjpt.v45.i01.4465> [SCOPUS].
- Sivanand R , Tavanam Venkata Rao, V. Ramesh , D.V. Sridevi , Mukuloth Srinivasnaik, G. Sunita Sundari , Dinesh Sharma , S. Prasath, “ A Novel Approach to IoT-Based Solar Energy Measurement and Monitoring Model” *Eur. Chem. Bull.* 2023, 12(Special Issue 4), 15777-15794. [Scopus].
- Rajendra Jumba and Dinesh Sharma, “Design of high gain miniaturized WPT rectenna for implantable biomedical applications” *Frequenz (DE GRUYTER)* –June 2024. <https://doi.org/10.1515/freq-2023-0354> [SCI].
- M. Vinod Kumar and Dinesh Sharma, “A metasurface antenna with Beam steering capabilities for radio frequency energy harvesting” *Computer and Electrical Engineering* Volume 118, Part B, September 2024, 109443 (SCI).
- .V. Anil Kumar,Ch. V. Rama Rao, and N. Leema, “Audio source separation by estimating the mixing matrix in underdetermined condition using successive projection and volume minimization” *Springer, International Journal of Information Technology*, vol. 15, pp. 1831–1844 April, 2023. (<https://doi.org/10.1007/s41870-023-01226-6>) .
- Mohd. Afzal Khan, Nidhi Gupta, Rahit Kathuria, Vanshika, Vivek Sharma,V. Anil Kumar “Electric vehicle integration system for power management on a blockchain-based smart grid platform with AI capabilities” *Research Square*, March 2023. (<https://doi.org/10.21203/rs.3.rs-2646860/v1>)
- V. Anil Kumar, Ch. V. Rama Rao and Anirban Dutta, “Performance analysis of blind source separation using canonical correlation,” *Springer, Circuits, Systems, and Signal Processing*, vol. 37 , no.2 , pp. 658-673, 2018. (<https://doi.org/10.1007/s00034-017-0566-x>).
- Parvinder Bhalla A Novel Approach to Fuzzy Model Identification based on Bat Algorithm”, *International Journal of Applied Metaheuristic Computing, IJAMC*, Vol. 10, Issue 2, pp. 93-108, 2019. (ESCI indexed/Scopus).
- Parvinder Bhalla Nature Inspired Algorithms in Adaptive Filters used for Speech Enhancement: A Review” *Journal of AZANIA*, Volume 21, Issue 08, August-2021 in UGC-CARE (Group-II) Approved & SCOPUS Listed International Journal.
- Parvinder Bhalla An open-source MP + CNN + BiLSTM model-based hybrid model for recognizing sign language on smartphones” *International Journal of System Assurance Engineering and Management*, Springer, May 2024 <https://doi.org/10.1007/s13198-024-02376-x>. (SCI indexed)
- Patlolla Venkat Reddy, Farquad M A H, H. Saini, Sambasiva Rao G, and A. Khan, “Optimizing Real-Time Voice Quality in Ad Hoc Wireless Networks: A Knapsack-Enhanced Dynamic MAC Protocol,” *SSRG international journal of electronics and communication engineering*, vol. 11, no. 3, pp. 115–120, Mar. 2024, doi: <https://doi.org/10.14445/23488549/ijece-v11i3p112>

International Conference Papers

- Gauri Khanna , Akash Tyagi, Gunpreet Singh , Shilpa Jindal “Bilingual Voice Controlled Home Automation System using IoT for Indian States” in International Conference on Electronics and Communication, Renewable Energy and IoTs- vision 2040 on 7th -8th September 2019 at IEI Punjab and Chandigarh state center.
- Shilpa Jindal “A compact Flower Shape Antenna for Multi-band Operation in C, X & Ku Band (Special Session on 5G: Communications, Applications, Environmental Effects)” IEEE 2nd International Conference on Data, Engineering and Applications 2020 on 28-29 Feb 2020 in RGPV Bhopal; The State Technical University of Madhya Pradesh.
- Manmeet Singh Chawla, Dhananjay Prakash and Dr. Shilpa Jindal “Design of System for Measuring Air Properties for Help During COVID-19 Scenario” in 2nd International Conference on Aspects of Materials Science and Engineering ICAMSE2021 Organized by Panjab University, Chandigarh, India **05th – 06th March, 2021** (proceeding Materials Today by Elsevier).
- Purnima Bansal, Aditi Ananya, Shilpa Jindal “IoT enabled dustbin for trash segregation and collection ” in International Conference on Emerging Technologies : AI, IoT, and CPS for Science & Technology Applications” organized by Department of Electronics and Communication Engineering & Electrical Engineering Department , NITTTR Chandigarh during **6th-7th September 2021**.
- Atul kumar, Amandeep Singh, Saurabh Panday, Shilpa Jindal “Trigger Based Anti-Violence Robot The Vision” in "International Conference on Emerging Technologies: AI, IoT, and CPS for Science & Technology Applications” jointly organized by Electronics and Communication Engineering & Electrical Engineering Department during **6th-7th September 2021**.
- H. S. Chahar, Shilpa Jindal “Analysis of High Power Ku band Magnetron based Radar Transmitter” in International Conference on Emerging Technologies : AI, IoT, and CPS for Science & Technology Applications” organized by Department of Electronics and Communication Engineering & Electrical Engineering Department , NITTTR Chandigarh during **6th-7th September 2021**.
- Amalgamation of Machine Learning Techniques with Optical Systems: A Futuristic Approach” in Conference proceedings © 2024 Artificial Intelligence of Things First International Conference, ICAIoT 2023, Chandigarh, India, March 30–31, 2023, Revised Selected Papers, Part II, Communications in Computer and Information Science, ISBN 978-3-031-48773-6, Springer pp 3-12.
- Hardeep Saini, D.S.Saini, “Role of Bio-inspired algorithms in Detection of Lung Diseases using Deep Learning”, International Conference AICTA, Dec 18-20, 2023, PEC Chandigarh..
- Sunita Saini and D.S.Saini, “Modelling and Analysis of Step Down Switched Capacitor DC-DC converter for SoC”, International Conference ICSPC, Dec 21-23, 2023, IIIT Noida
- Thakur and D.S. Saini, “Ambiguity function analysis of polyphase codes in pulse compression radars,” International Conference on Computing Applications in Electrical and Electronics Engineering, Mar. 2020.
- A. Thakur and D.S. Saini, “Transmit waveform design to avoid target masking in pulse compression radar,” International Conference on Communication and Signal Processing, Jul. 2020.

- A. Thakur and D.S. Saini “Signal Compression Method based on Discrete Linear Chirp Transform”, Inter. Conf. on Comm. and Sign. Proc.-IEEE, pp.17-21, April, 2019.(Published)
- Dinesh Sharma, Purnima K Sharma and Jyotsna Rani, “ A Flag Shaped Microstrip Patch Antenna for Multiband Operation” was published in International Conference on Innovative Computing and Communication (ICICC-2019) held at VSB Technical University of Ostrava, Czech Republic, Europe, 21-22 March 2019. (Springer reputed AISCseries (Scopus Indexed).
- Purnima K Sharma, Dinesh Sharma, T. Vijay Sai “Path Loss Calculation at 900MHz and 2.4GHz in WBAN” ICSC-2019 held on 19-21 April 2019 at Institute of Hydropower engineering and Technology (THDC-IHET, Tehri, Uttarakhand, India) . (Algorithms for Intelligent Systems (AIS), Springer Nature)-
https://link.springer.com/chapter/10.1007/978-981-15-0633-8_56
- Dinesh Sharma, E. Kusuma Kumari “Wideband MIMO Antenna With Diverse Polarization and Radiation Pattern For 5G Applications” ICSC-2019 held on 19-21 April 2019 at Institute of Hydropower engineering and Technology (THDC-IHET, Tehri, Uttarakhand, India) . (Algorithms for Intelligent Systems (AIS), Springer Nature)-
https://link.springer.com/chapter/10.1007/978-981-15-0633-8_68.
- Dinesh Sharma, Purnima K Sharma, J Rajendra and Ramnarayana Vemana “A Bird View on Radio Frequency Based Energy Harvesting System” 8th International Conference on Advancements in Engineering and Technology, (ICAET-2020) at BGIET, Sangrur (Punjab), pp. 1-3 March 20 – 21, 2020 [ISBN: 978-81-924893-5-3].
- Sarabpreet Singh Sohal, Sahil Gupta, Vaibhav Arora, D.S.Saini, Dinesh Sharma, “A Compact Wideband Microstrip Antenna for Radar and Satellite Communication” 8th International Conference on Advancements in Engineering and Technology, (ICAET-2020) at BGIET, Sangrur (Punjab), pp. 23-27, March 20 – 21, 2020 [ISBN: 978-81-924893-5-3].
- Ashwin Rajput, Damanpreet Kaur and Dinesh Sharma, “A Dual Band Slotted Wheel Antenna for Wireless Applications” 8th International Conference on Advancements in Engineering and Technology, (ICAET-2020) at BGIET, Sangrur (Punjab), pp. 29-33, March 20 – 21, 2020 [ISBN: 978-81-924893-5-3].
- Atul Kumar, Aashish Manchanda, Abhishek Yadav and Dinesh Sharma, “Quad Band Fractal Microstrip Antenna for Application in S, C and X Bands” 8th International Conference on Advancements in Engineering and Technology, (ICAET-2020) at BGIET, Sangrur (Punjab), pp. 53-57, March 20 – 21, 2020 [ISBN: 978-81-924893-5-3].
- Ashima Sharma, Shrishti Singh, Paurush Dhawan, Dinesh Sharma, “Design and Simulation of Slot Antenna for Energy Harvesting” 9th International Conference on Innovations in Electronics and Communication Engineering (ICIECE-2021) at Guru Nanak Institutions Technical Campus Ibrahimpatnam, Hyderabad, Telangana State , pp. 11, Aug.13-14, 2021.
- Himanshu Garg, Chahat Goyal, Nikhil Arora, Dinesh Sharma , “Microstrip Patch Antenna for Wireless Body Area Network Applications ” 9th International Conference on Innovations in Electronics and Communication Engineering (ICIECE-2021) at Guru Nanak Institutions Technical Campus Ibrahimpatnam, Hyderabad, Telangana State , pp. 13, Aug.13-14, 2021.

- J. Rajendra and Sharma Dinesh, “A Review on Wireless Power Transfer New Paradigm for Low Power Devices” 5 th International Conference on Innovative Computing and Communication (ICICC-2022), New Delhi on 19 th and 20 th Feb. 2022 (January 27, 2022).
- M. Vinodkumar and Dinesh Sharma, “A Review on Metasurface and Metamaterials for Antenna Design” New Frontiers in Communication and Intelligent Systems, 185–205. Computing & Intelligent Systems, SCRS, India. <https://doi.org/10.52458/978-81-95502-00-4-22>.
- Neelam Yadav, Dinesh Sharma, Shashi Jawla and Gaurav pratap Singh, “Fire Neutralizing with Night Vision Camera under IoT framework” International Conference on Cyber Security, Privacy and Networking (ICSPN-2022) at Thailand on 09-11-2022.
- Dinesh Sharma, Sahil Arora, Shobhana Manjhu and Vaibhav Kushwaha, “Analysis and Development of Ultra wide band Flexible Wearable Textile Antenna for Wireless Body Area Network” 3 rd International Conference on Communication, Computing and Industry 4.0 (C214-2022)- IEEE organized by CMR Institute of Technology, Bengaluru, India on 15 th -16 th Dec. 2022. – Best Paper Award
- M. Vinod kumar and Dinesh Sharma, “Metasurface Based MIMO Antenna for RF energy Harvesting Applications” International Conference on Technological Advancements Stepping Towards Sustainable Development at SVIET, Banur (Panjab) on 8 th -9 th Feb. 2023.
- J. Rajendra and Dinesh Sharma, “A High Gain Circularly Polarized WPT Rectenna for Implantable Biomedical Applications” International Conference on Technological Advancements Stepping Towards Sustainable Development at SVIET, Banur (Panjab) on 8 th -9 th Feb. 2023.
- Dinesh Sharma, Kamaldeep Kaur, Palkin Gautam, Rhythm, “A Coplanar Triband MIMO Antenna for Vehicular Communication” at SERB sponsored international conference on recent advancement in Communication, Computing, and Artificial Intelligence (RACCAI 2023), CEC, Jhanjeri (Mohali) during 12-13 th Oct. 2023. Best Paper award
- V. Anil Kumar, “BSS in Underdetermined applications using modified Sparse Component Analysis,” 2 nd International Conference On Intelligent Vision and Computing (ICIVC 2022), Springer, Organized by NIT-Agartala November 2022, pp. 375-387 (<https://link.springer.com/book/9783031311635>)
- N. Sharma and B. Gupta, “Performance Analysis of Hybrid Precoding in Massive MIMO Systems with Quantized Phase Shifters,” International Conference on Emerging Technology and Sustainable Solutions (ICCESS), Chtkara University, Punjab, India, Nov 24-25, 2023.
- N. Sharma and B. Gupta, “Energy Efficiency Performance of Millimeter Wave Massive MIMO Systems with Hybrid Precoding,” International Conference on Disruptive Technologies (ICDT), Greater Noida, India, pp. 148-153, 2023. doi: 10.1109/ICDT57929.2023.10150693.
- N. Sharma and B. Gupta, “Performance Evaluation of Multi-user Massive MIMO Systems with Hybrid Precoding, " International Conference on Disruptive Technologies (ICDT), Greater Noida, India, pp. 185-190, 11-12 May 2023, doi: 10.1109/ICDT57929.2023.10150971.

National Conference papers:

- Arshita , Shilpa Jindal “Perspective of NEP 2020 for integration of different engineering disciplines – A Step towards Atmanirbhar Bharat” in National Conference on Unlocking Atmanirbhar Bharat Through NEP-2020 27th November, 2020 organized by National Institute of Technical Teachers Training and Research Sector 26, Chandigarh – 160019.
- Ashwin Rajput, Sahil Gupta, Sarabpreet Singh and Dinesh Sharma, “Development on Orthodox Solar Energy Harnessing System” was published in 1 st National Conference Innovations in Applied Science and Engineering held at NIT, Jalandhar (Punjab) on 27-28th April 2019.

Book Chapters:

- Dr. Shilpa Jindal, Contributed a chapter 8 on "Green Optical Networks based on Machine Learning Techniques" in a Book titled "Green Communication Technologies for Future Networks- An Energy- Efficient Perspective " published by CRC Press (Taylor & Francis), pp 133-145, ebook ISBN 9781003264477, ISBN : 9781032206318 (pbk). in Oct 2022.
- Anil Kumar Vaghmare, “BSS in Underdetermined applications using modified Sparse Component Analysis”, Springer, Volume 17 (ISBN 978-3-031-31163-5)(https://doi.org/10.1007/978-3-031-31164-2_31) Book series Proceedings in Adaptation, Learning and Optimization
- Bhasker Gupta, “Multiantenna Systems: Large Scale MIMO and Massive MIMO” in Enabling Technologies for Next Generation Wireless Communications, CRC Press, U.K.

RESEARCH PROJECTS

- Dinesh Sharma and Shilpa Jindal “Design and Development of IoT based water quality Monitoring System for Chandigarh” is completed with value of Rs. 50000 (Fifty Thousand only), DST & RE, Chandigarh (UT) by March 2023.