

Deepak Kumar: Assistant Professor (Motilal Nehru National Institute of Technology, Allahabad, Prayagraj) Google Scholar ORCID

Transactions:

1. F. Karim, N. H. Mahmood, A. S. De Sena, **D. Kumar**, and M. Latva-Aho, "Finite Blocklength Analysis for SWIPT-Enabled RSMA Networks Under Realistic Assumptions," *IEEE Transactions on Wireless Communications*, vol. 24, no. 9, pp. 8014-8024, Sept. 2025.
2. **D. Kumar**, C. K. Singh, O. L. Alcaraz López, V. Bhatia and M. Latva-aho, "Performance Analysis of Active RIS-Assisted Downlink NOMA With Transmit Antenna Selection", *IEEE Transactions on Vehicular Technology*, vol. 74, no. 5, pp. 7774-7791, May 2025.
3. C. K. Singh, **D. Kumar**, J. J. Lehtomäki, Z. Khan, M. Latva-Aho and P. K. Upadhyay, "Robust UAV-integrated Active STAR-RIS RSMA Networks: Analysis with Deep Learning Techniques", *IEEE Transactions on Vehicular Technology*, vol. 74, no. 5, pp. 8297-8302, May 2025.
4. **D. Kumar**, C. K. Singh, O. L. Alcaraz López, V. Bhatia and M. Latva-aho, "Performance Analysis of Passive/Active RIS Aided Wireless-Powered IoT Network With Nonlinear Energy Harvesting", *IEEE Transactions on Wireless Communications*, vol. 24, no. 2, pp. 1132-1145, Feb. 2025.
5. **D. Kumar**, P. K. Singya, O. Krejcar, K. Choi, and V. Bhatia, "SWIPT Enabled Cooperative Cognitive Radio Sensor Network with Non-Linear Power Amplifier", *IEEE Transactions on Cognitive Communications and Networking*, vol. 9, no. 4, pp. 884-896, Aug. 2023.
6. **D. Kumar**, P. K. Singya, O. Krejcar, K. Choi, and V. Bhatia, "Performance of IRS-Aided FD Two-Way Communication Network with Imperfect SIC", *IEEE Transactions on Vehicular Technology*, vol. 72, no. 4, pp. 5491-5496, Apr. 2023.
7. **D. Kumar**, P. K. Singya, O. Krejcar, and V. Bhatia, "On Performance of a SWIPT enabled FD CRN with HIs and Imperfect SIC over $\alpha - \mu$ fading channel," *IEEE Transactions on Cognitive Communications and Networking*, vol. 9, no. 1, pp. 99-113, Feb. 2023.
8. **D. Kumar**, P. K. Singya, and V. Bhatia, "ASER Analysis of Hybrid Receiver Based SWIPT Two-Way Relay Network", *IEEE Transactions on Vehicular Technology*, vol. 70, no. 10, pp. 10018-10030, Oct. 2021.

Journals:

1. **D. Kumar**, S. Yan, O. L. A. López, and A. Al-Dweik, "Full-Duplex D2D Communication via Active RIS: Performance Under System Imperfections", *IEEE Wireless Communications Letters*, vol. 15, pp. 1757-1761, Feb. 2026.
2. A. B. Khattak, A. Azarbahram, **D. Kumar**, M. Latva-Aho, and O. L. A. López, "End-to-End Joint Waveform and Beamforming Optimization for RF Wireless Power Transfer with Hybrid Transmit Architecture and Non-Linear Energy Harvesters," *IEEE Internet of Things Journal*, vol. 13, no. 6, pp. 10196-10212, 15 March, 2026.
3. F. Karim, N. H. Mahmood, A. S. De Sena, **D. Kumar**, B. Clerckx and M. Latva-Aho, "Uplink Rate Splitting Multiple Access with Imperfect Channel State Information and Interference Cancellation," *IEEE Wireless Communications Letters*, vol. 14, no. 5, pp. 1316-1320, May 2025.
4. C. K. Singh, **D. Kumar**, J. J. Lehtomäki, Z. Khan, M. Latva-Aho and P. K. Upadhyay, "Analysis With Deep Learning of Robust UAV-Mounted Active IRS NOMA Networks with Imperfections", *IEEE Open Journal of the Communications Society*, vol. 5, pp. 7878-7899, Dec. 2024.
5. V. Sharma, **D. Kumar**, S. Sharma, V. Bhatia, O. Krejcar, and P. Brida, "Performance of IRS-Assisted MIMO THz System Using Compressed Sensing-Based Measurement Matrix", *IEEE Access*, vol. 12, pp. 144950-144964, Oct. 2024.

6. **D. Kumar**, P. K. Singya, J. Nebhen, and V. Bhatia, "Performance of SWIPT-Enabled FD TWR Network With Hardware Impairments and Imperfect CSI", *IEEE Systems Journal*, vol. 17, no. 1, pp. 1224-1234, Mar. 2023.
7. **D. Kumar**, P. K. Singya, O. Krejcar, K. Choi, and V. Bhatia, "On Performance of Intelligent Reflecting Surface aided Wireless Powered IoT Network with HIs", *IEEE Communications Letters*, vol. 27, no. 2, pp. 502-506, Feb. 2023.
8. B. Talukdar, **D. Kumar**, and W. Arif, "Performance Analysis of a Prediction-Sensing Based Cooperative Energy Harvesting CRN Over Rician Fading Channels", *Springer Wireless Personal Communications*, vol. no. 127, pp. 3637-3658, Jul. 2022.
9. B. Talukdar, **D. Kumar**, S. Hoque, and W. Arif, "Estimation based Cyclostationary Detection for Energy Harvesting Cooperative Cognitive Radio Network", *Springer Telecommunication Systems*, vol. no. 79, pp. 133-150, Nov. 2021.

Book:

1. V. Bhatia, Z. Ding, K. Singh, A. Baghel, A. S. Parihar, **D. Kumar**, *Advanced NOMA Techniques for Heterogeneous Cellular Networks*, Springer Cham, Dec. 2025.

Book Chapters:

1. **D. Kumar**, V. Bhatia, "Performance of RIS-Assisted IoT Network with Hardware Imperfections", *Electromagnetic Signal and Information Theory: From Synergizing Three Realms to Evolution of Next Generation Communications*, Elsevier, 2025 (Accepted).
2. **D. Kumar**, S. Iyer, O. L. A. Lopez "Evolution of Mobile Networks", *Intelligent Spectrum Management: Towards 6G*, John Wiley & Sons, Inc., Dec. 2024.
3. B. Talukdar, **D. Kumar**, S. Hoque, W. Arif "Cooperative Spectrum Sensing in Energy Harvesting Cognitive Radio Networks Under Diverse Distribution Models", *5G and Beyond Wireless Systems*. Springer Series in Wireless Technology. Springer, Singapore, Aug. 2020.

Conferences:

1. F. Karim, **D. Kumar**, P. Dharmawansa, N. H. Mahmood, A. S. De Sena, and M. Latva-Aho, "Impact of CSIR, SIC, and Hardware Impairments on the Ergodic Rate of Downlink RSMA", *IEEE Global Communications Conference (GLOBECOM)*, Taipei, Taiwan, 2025 (Accepted).
2. F. Karim, N. H. Mahmood, **D. Kumar**, A. S. De Sena, and M. Latva-Aho, "RSMA-Aided Full-Duplex Networks Under Imperfect CSI and SIC: Performance Evaluation", *2026 IEEE 23rd Consumer Communications & Networking Conference (CCNC)*, Las Vegas, NV, USA, pp. 1-7, Feb. 2026.
3. B. Talukdar, **D. Kumar**, and W. Arif, "Performance Analysis of TS/PS Protocol Based Cooperative Cognitive Radio Sensor Network with Imperfect CSI", *2025 IEEE Silchar Subsection Conference (SILCON)*, Chumukedima, Dimapur, India, pp. 1-7, Jan. 2026.
4. **D. Kumar**, C. K. Singh, O. L. Alcaraz López, V. Bhatia and M. Latva-aho, "On Performance of a RIS-Aided IoT Network with Direct Link and $\alpha - \mu$ Fading", *Joint European Conference on Networks and Communications & 6G Summit (EuCNC/6G Summit)*, Poznan, Poland, pp. 601-606, Jun. 2025.
5. C. C. Kumaradasa, **D. Kumar**, P. Rajatheva, and V. Bhatia "On Performance of Hybrid RIS-Aided NOMA Network," *IEEE Wireless Communications and Networking Conference (WCNC)*, Milan, Italy, pp. 1-6, 2025.
6. A. B. Khattak, O. L. A. López, A. Azarbahram, **D. Kumar**, and M. Latva-Aho, "End-to-End Waveform and Beamforming Optimization for RF Wireless Power Transfer," *IEEE International Workshop on Signal Processing Advances in Wireless Communications (SPAWC)*, Lucca, Italy, pp. 1-5, Sep. 2024.

7. F. Karim, N. H. Mahmood, A. S. De Sena, **D. Kumar**, O. L. A. Lopez and M. Latva-Aho, "SWIPT-Enabled RSMA Downlink Networks with Imperfect CSI and SIC," *IEEE Wireless Communications and Networking Conference (WCNC)*, Dubai, United Arab Emirates, pp. 1-6, Jul. 2024.
8. B. Talukdar, **D. Kumar** and W. Arif, "Performance of Energy Harvesting Cooperative Cognitive Radio Network Under Higher Order QAM Schemes," *TENCON 2023 - 2023 IEEE Region 10 Conference (TENCON)*, Chiang Mai, Thailand, pp. 1-6, Nov. 2023.
9. **D. Kumar**, P. K. Singya and V. Bhatia, "On Performance Analysis of FD TWR Network with Non-Linear EH Model and Imperfect SIC," *IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS)*, Gandhinagar, Gujarat, India, pp. 151-156, Aug. 2023.
10. **D. Kumar**, P. K. Singya and V. Bhatia, "Performance of SWIPT enabled Full Duplex IoT Network with Hardware Impairments and Imperfect SIC," *IEEE Wireless Communications and Networking Conference (WCNC)*, Glasgow, United Kingdom, pp. 1-6, Mar. 2023.
11. **D. Kumar**, P. K. Singya and V. Bhatia, "On Performance of Wireless-Powered FD Relaying Network with Imperfect SIC and Hardware Impairments", *IEEE National Conference on Communications (NCC)*, Guwahati, India, pp. 1-6, Mar. 2023.
12. **D. Kumar**, P. K. Singya and V. Bhatia, "Performance Analysis of SWIPT Enabled Decode-and-Forward based Cooperative Network", *IEEE International Conference on Communication Systems and Network Technologies (CSNT)*, Indore, India, pp. 476-481, Apr. 2022.
13. **D. Kumar**, P. K. Singya and V. Bhatia, "Impact of NLPA on SWIPT Enabled Two-Way AF Cooperative Network", *IEEE Vehicular Technology Conference (VTC2021-Spring)*, Helsinki, Finland, pp. 1-5, Apr. 2021.
14. **D. Kumar**, P. K. Singya and V. Bhatia, "Performance Analysis of Hybrid Two-Way Relay Network with NLPA and Hardware Impairments", *IEEE Wireless Communications and Networking Conference (WCNC)*, Nanjing, China, pp. 1-6, Mar. 2021.
15. B. Talukdar, **D. Kumar**, and W. Arif, "Performance Analysis of a SWIPT enabled Cognitive Radio Sensor Network using TS protocol", *IEEE Advanced Communication Technologies and Signal Processing (ACTS)*, Silchar, India, pp. 1-5, Feb. 2021.
16. B. Talukdar, **D. Kumar**, A. Kundu, and W. Arif, "Performance Analysis of an EH-CRN under Alpha-Mu Fading scenario", *IEEE Advanced Communication Technologies and Signal Processing (ACTS)*, Silchar, India, pp. 1-6, Feb. 2021.
17. S. Parvez, **D. Kumar**, and V. Bhatia, "On Performance of SWIPT Enabled Two-Way Relay System with Non-Linear Power Amplifier", *IEEE National Conference on Communications (NCC)*, Kharagpur, India, pp. 1-6, Apr. 2020.
18. B. Talukdar, **D. Kumar**, and W. Arif, "Analytical Modelling and Performance Evaluation of a Prediction based EH-Cooperative CRN under Erlang Distribution", *IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS)*, Goa, India, pp. 1-6, Jun. 2020.
19. **D. Kumar**, B. Talukdar, and W. Arif, "Performance Analysis of Prediction Based Sensing in Energy Harvesting Cooperative CRN", *IEEE International Conference on Advanced Computational and Communication Paradigms (ICACCP)*, Gangtok, India, pp. 1-6, Oct. 2019.
20. **D. Kumar**, B. Talukdar, and W. Arif, "Impact of Weibull Distribution on Prediction Based Sensing in Energy Harvesting Cooperative CRN", *IEEE International Conference on Signal Processing and Integrated Networks (SPIN)*, Noida, India, pp. 704-709, May 2019.