

Dr. Mehboob Ul Amin

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Summary

Electronics and Communication Engineering researcher and educator specializing in wireless communication, LTE/LTE-Advanced, cognitive radio, and resource allocation. 6+ years of academic experience with 30+ peer-reviewed publications (Springer/Elsevier/IEEE), book chapters, and multi-institution collaborations. Expertise in MIMO systems, OFDM, relay networks, beamforming, and PAPR reduction techniques. Experienced in teaching undergraduate and postgraduate courses, laboratory management, and student supervision. Corporate experience includes GSM/LTE network operations and maintenance with BSNL and Ericsson India.

Skills

- Wireless Communication: LTE/LTE-Advanced, 5G networks, cognitive radio, MIMO-OFDM, relay networks, beamforming
- Signal Processing: PAPR reduction, sphere decoders, filter bank multicarrier (FBMC), resource allocation
- Network Technologies: GSM, CDMA, LTE, microwave systems, RBS maintenance, interference mitigation
- Modeling & Simulation: MATLAB, CST Studio Suite, optimization techniques for wireless systems
- Academia: Course design, laboratory management, student mentoring, thesis supervision, peer review

Experience

Assistant Professor (Contractual), Dept. of Electronics and Instrumentation Technology — University of Kashmir, Srinagar | Jun 2018–Present

- Teach undergraduate and postgraduate courses in wireless communication, signal processing, and electronics.
- Manage and maintain departmental laboratories; supervise M.Tech. students in dissertation work.
- Conduct research on LTE-Advanced, cognitive radio, IRS-assisted NOMA, and deep reinforcement learning for resource allocation.

Operation and Maintenance Engineer — Ericsson India Pvt. Ltd. | Prior to 2018

- Handled RBS (2206, 2204, 2964), microwave antennas, and various RBS faults (VSWR, RX diversity loss, RX path imbalance).

- Managed GSM, CDMA, and LTE projects; performed E1 patching and network troubleshooting.
- Worked on BTS maintenance, power plant management, and mobile networking systems.

Trainee — DOT/BSNL | Prior to 2018

- Trained in switching in GSM mobile systems, mobile networking, BTS maintenance, and power plant management.
- Gained hands-on experience in network media and telecommunications infrastructure.

Research Scholar (Full-time) — University of Kashmir | 2014–2018

Ph.D. Thesis (2018): Design Analysis and Implementation Techniques for Interference Mitigation and Precoding in 4G LTE.

Education

Ph.D., Electronics and Communication — University of Kashmir, 2018

M.Tech., Electronics and Communication — University of Kashmir, 2013

B.Tech., Electronics and Communication — University of Kashmir, 2011

Selected Publications

- Subba Amin; Javaid A. Sheikh; **Mehboob-Ul Amin**; Bilal Ahmad Malik, “Subba Amin; Javaid A. Sheikh; Mehboob-Ul Amin; Bilal Ahmad Malik”, *International Journal of Wireless and Mobile Computing*, vol. 27, no. 3, pp. 217 – 228, 2024.
- Subba Amin, Javaid A. Sheikh, **Mehboob-ul-Amin**, Bilal A. Malik, “A deep reinforcement learning for energy efficient resource allocation Intelligent Reflecting Surface (IRS) driven Non-Orthogonal Multiple Access Beamforming (NOMA-BF)”, *Physical Communication*, vol. 60, pp. 1- 14, 2023.
- Priyanka Mishra, **Mehboob ul Amin**, “Performance evaluation for low complexity cascaded Sphere Decoders using K best detection algorithm” *ICT Express*, Elsevier, vol. 7, no. 2, pp. 234-238, June 2021.
- Javaid A. Sheikh, **Mehboob-ul-Amin**, Shabir A. Parah, and G. M. Bhat, “Impact of antenna and beam-selection-based sectored relay planning for performance evaluation of 4G LTE-A tri-sectored cell”, *Digital Communications and Networks*, Elsevier vol. 5, no. 2, pp.121-130, 2019.
- **Mehboob ul Amin**, J. A. Sheikh, S. A. Parah, and G. M. Bhat, “Analytical analysis and effect of scrambling on inter-relay interference in a tri-sectored LTE-A network”, *International Journal of Wireless and Mobile Computing*, vol. 14, no. 2, pp. 149- 163, 2018.
- Javaid A. Sheikh, **Mehboob-ul-Amin**, Shabir A. Parah, and G. M. Bhat, “Towards green capacity in massive MIMO based 4G-LTE a cell using beam-forming vector

- based sectored relay planning”, *Wireless Personal Communications*, vol. 97, Springer nature, no. 4, pp. 5767- 5781, 2017.
- Javaid A. Sheikh, ZA Iqbal, **Mehboob-ul-Amin**, Shabir A. Parah, and G. M. Bhat, “ A New Filter Bank Multicarrier Based Cognitive Radio for 5G Networks Using Optimization Techniques” *Wireless Personal Communications*, Springer nature vol.112, no. 2, pp. 1265- 1280,2020
 - J.A. Sheikh, **Mehboob ul Amin**, S.A. Parah, S. Amin, and G.M. Bhat, “On exploiting MIMO technology for achieving maximum detection probability and mitigating interference in tri- sectored co-operative cognitive radio networks”, *International Journal of Wireless and Mobile Computing*, vol. 13, no. 3, pp. 200-216, 2017.
 - J.A. Sheikh, **Mehboob ul Amin**, S.A. Parah, S. Amin, and G.M. Bhat, “Multicarrier Modulated Signal for Cognitive Radio with Low Peak-to-Average Power Ratio”, *International Journal of Applied Mathematics Electronics and Computers*, vol. 4, no. 4, 2016.
 - Priyanka Mishra, **Mehboob ul Amin**, “PAPR reduction in OFDM using various coding techniques”, *Int. J. Wireless and Mobile Computing*, vol. 15, no. 1, pp. 16-20, 2018.
 - Priyanka Mishra, **Mehboob ul Amin**, C K Shukla,” Various Space-Time Block Codes over different modulation techniques using a new Sphere Decoder”, *International Journal of Engineering & Technology*, vol. 7, no. 4, pp. 4282-4289, 2018.
 - Priyanka Mishra, **Mehboob ul Amin**, C K Shukla,” Low complexity decoding algorithm for rotated quasi orthogonal space time block codes for modified sphere decoder”, *International Journal of Applied Engineering Research*, vol. 13, no. 21, pp. 15203-15211, 2018.
 - Javaid A. Sheikh, ZA Iqbal, **Mehboob-ul-Amin**, Shabir A. Parah, and G. M. Bhat, “ A New Bio-Inspired Method of PAPR Reduction In Filter Bank Multi-carrier Modulation System”. *Journal of Engineering Science and Technology*, vol 17 Issue 2 April 2022.
 - Javaid A Sheikh, **Mehboob ul Amin**, SA Parah, G.M Bhat, “Capacity Enhancement and Performance Evaluation in 4G LTE-Advanced Networks Using Sectored Relaying” *Engineering Maths*, vol. 5, no. 45, pp. 12-16, 2016.
 - Subba Amin, **Mehboob ul Amin**, GM Bhat, “Spectrum Sensing in Cognitive Radio at different SNRs using MIMO technique” *International Journal of Advance Research in Science and Engineering*, vol. 7, no. 4, pp. 1102-1110, March 2018.
 - **Mehboob Ul Amin**, Priyanka Mishra, “Overview of PAPR Reduction Coding Techniques for OFDM”, *International Journal of Advance Research in Science and Engineering*, vol. 07, no.5, April 2018.
 - Priyanka Mishra, **Mehboob-ul- Amin**, “PAPR Reduction in DVB Based MIMO OFDM System Using Various Coding Techniques”, *International Journal of Engineering Research*, vol. 7, no.1, pp. 14-93, 1 Jan. 2018.
 - Saba Amin, Anurag Sharma, **Mehboob ul Amin**, JA. Sheikh, SA Parrah, GM. Bhat, “PAPR reduction in MIMO-OFDM System for various M-Ary Phase Modulations using

- Discreet Wavelet Transform Algorithm”, Australian Journal of Information Technology and Communication, If=0.78, ISSN:2203-2843.
- Javaid A Sheikh, Sakina Akther, Sahir Majeed, **Mehboob ul Amin**, S.A. Parrah, “On the Design and Performance Evaluation of DWT based Compressed Speech Transmission with Convolutional Coding”, *Commun Appl Electron*, vol. 4, no. 9, pp. 36-40, 2016.
 - Javaid A Sheikh, **Mehboob ul Amin**, Sakina Akther, Sahir Majeed, S.A. Parrah, “On the Design and Performance Evaluation of Peak to Average Power Ratio (PAPR) using Hybrid Transform Techniques in MIMO-OFDM”, *International Journal of Computer Applications*, vol. 141, no. 4, May 2016.
 - **Mehboob ul Amin**, Javaid Skeikh, S.A Parrah, G.M Bhat, “A new method for PAPR reduction in OFDM using Embedded Transform Techniques”, *Elixir Network Engg (UK) ISSN 2229-712X*.
 - **Mehboob ul Amin**, Javaid Skeikh, S.A Parrah, G.M Bhat, “A new method for PAPR reduction in MIMO-OFDM using combination of OSTBC Encoder and T×T Spreading”, *Elixir Network Engg(UK) ISSN 2229-712X*.
 - **Mehboob ul Amin**, R. Singh, and J.A. Skeikh, “A New Method for PAPR Reduction in MIMOOFDM Using Combination of OSTBC Encoder and DCT Matrix”, *International Journal of Recent Technology and Engineering (IJRTE)*, vol. 2, no. 2, 2013.
 - **Mehboob Ul Amin**, J.A. Skeikh, S.A. Parrah, and G.M. Bhat, “Performance evaluation of various MIMO based digital modulation techniques using Minimum mean square error (MMSE) combining”, *Elixir Network Engg (UK)* , 2013.
 - Ijlal Hyder Rafiqi, Javed Ashraf, **Mehboob ul Amin**, M.T Beg, G.Mohiudin Bhat, “Performance Evaluation of Multiple Input Multiple Output Orthogonal Frequency Division Multiplexing (Mimo-OFDM) for Alamouti Space Time Block Code using Various Digital Modulation Techniques” *International Journal of Soft Computing and Engineering (IJSCE)*, vol. 4, no. 3, July 2014.

International Conference

- **Mehboob ul Amin** and G. Singh, “Power Optimization of Intelligent Reflecting Surface assisted NOMA for Wireless Communication Networks,” *2022 5th International Conference on Multimedia, Signal Processing and Communication Technologies (IMPACT)*, Aligarh, India, 2022, pp. 1-4.
- P. Mishra, **Mehboob ul Amin** and G. Singh, “Deep Learning based MIMO detection in 6G Wireless Communication System,” *2023 International Conference on Computational Intelligence and Knowledge Economy (ICCIKE)*, Dubai, United Arab Emirates, 2023, pp. 366-369.
- S. Amin, J. A. Sheikh, **Mehboob ul Amin** and B. A. Malik, “Resource Allocation in CR networks using Beamforming Optimization,” *2022 5th International Conference on Multimedia, Signal Processing and Communication Technologies (IMPACT)*, Aligarh, India, 2022, pp. 1-4.

- **Mehboob ul Amin**, J.A Sheikh, S.A. Parah, and G.M. Bhat, “Novel hybrid technique for PAPR reduction in OVSA based OSTBC OFDM system”, In *2015 Annual IEEE India Conference (INDICON)*, IEEE, pp. 1-6, December 2015.
- Javaid A. Sheikh, Shabir A. Parrah, G. Mohiuddin Bhat, **Mehboob ul Amin**, “PAPR reduction in MIMO- OFDM system using combination of OSTBC encoder and Spreading Code Sequences”, *Proceedings of IEEE International Conference on Multimedia Signal Processing and Communication Technologies- IMPACT*, pp. 11-15), IEEE, November 2013.
- Javaid A. Sheikh, **Mehboob-ul-Amin**, Shabir A. Parah, G. Mohiudin Bhat, “Improving the Network capacity and Coverage of 4G-LTE-Advanced System using Relaying Technology”, *2015 International Conference on Advances in Computers, Communication and Electronic Engineering*, pp. 491-494, 2015.

Book Chapter

- **Mehboob Ul Amin** and G. Singh, “Machine Learning Empowered Resource Allocation to Reconfigurable Intelligent Surface Supported”, *5G and Beyond Wireless Networks: Technology, Network Deployments, and Materials for Antenna Design*, pp. 1-12, 2024, CRC Press.
- Priyanka Mishra and **Mehboob Ul Amin**, “Evaluating the Performance of Quasi and Rotated Quasi OSTBC System with Advanced Detection Techniques for 5G and IoT Applications”, in *Enabling Technologies for Next Generation Wireless Communications*, Ch. No. 14, pp 259-271, ISBN: 978-0-367-42249-3 (hbk) ISBN: 978-1-003-00347-2 (ebk) published by CRC Press (Taylor and Francis).
- Sheikh, Javaid A., **Mehboob Ul Amin**, Shabir A. Parah, and G. Mohiuddin Bhat, “Resource Allocation in Co-Operative Relay Networks for IOT Driven Broadband Multimedia Services.” In *Handbook of Multimedia Information Security: Techniques and Applications*, pp. 703-721. Springer, Cham, 2019.
- Sadaf Aijaz, Javaid A. Sheikh, Tanzeela Ashraf, **Mehboob-ul-Amin**, “Design and simulation of bio-inspired algorithm based cognitive radio for 5G networks”, in the book entitled *Enabling Technologies for Next Generation Wireless Communication*, Taylor and Francis, CRC press, ISBN: 978-0-367-42249-3(lbk), 978-1-003-00347-2 (ebk), pp, 177-194 (2021).
- Tanzeela Ashraf, Javaid A. Sheikh, Sadaf Aijaz, **Mehboob-ul-Amin**, “Design and Simulation of New Beamforming based Cognitive Radio for 5G”, in the book entitled *Enabling Technologies for Next Generation Wireless Communication*, Taylor and Francis, CRC press, ISBN: 978-0-367- 42249-3(lbk), 978-1-003-00347-2(ebk), pp,239-258 (2021).
- Javaid A. Sheikh, Arshid Iqbal Khan, **Mehboob Ul Amin**, G. Mohiuddin Bhat “Energy Efficient Resource Allocation for LSA Array Based 5G Wireless Communication Systems Using Convex Optimization Techniques”, *Applications of Artificial Intelligence Techniques in Engineering*, Springer H. Malik et al. (eds.), *Applications of Artificial Intelligence Techniques in Engineering, Advances in Intelligent Systems and Computing* 698, https://doi.org/10.1007/978-981-13-1819-1_13.

Awards & Recognition

- Best Paper Award — "Overview of PAPR Reduction Coding Techniques for OFDM", ICT Globalization & Automation-2018, IIMT College of Engineering, Greater Noida, April 2018.

Teaching & Service

Courses: Wireless Communication; Antenna and Wave Propagation; Digital Signal Processing; Microwave and RF Engineering; Electronics and Instrumentation.

Workshops/FDPs: Modern Wireless Communication Systems and Antenna Engineering (NIT Sikkim, 2021); Modern Antennas for Futuristic Wireless Communication Technologies (NIT Sikkim, 2021); CST Studio Suite RF Simulation (MNIT Jaipur, 2020); Antenna Design and Signal Processing for 5G and IoT (MNNIT Allahabad, 2017).

Student Supervision: Active supervision of M.Tech. students in dissertation work on wireless communication, cognitive radio, and signal processing.

Laboratory Management: Responsible for managing and maintaining departmental laboratories at University of Kashmir.

Projects

- Major Project (B.Tech): Design and Development of Novel Beam Forming Antenna System for CDMA.
- M.Tech Thesis: Simulation Modeling of MIMO-OFDM with the improvement in the reduction of PAPR for various M-Ary Phase modulations.
- Ph.D Thesis: Design Analysis and Implementation Techniques for Interference Mitigation and Precoding in 4G LTE.