# *BER and MSE performance of MIMO-OFDM systems using channel estimation technique*

***[1]Megha Dhote, [2]Vivek Kumar, [3]Sohan Yaduvanshi, [4]Prathiksha Pal**

[*1]Assistat Professor, Department of Electronics& Communication Engineering, Bhopal Institute of Technology, Bhopal (M.P) India

[2,3,4]Department of Electronics& Communication Engineering, Bhopal Institute of Technology, Bhopal (M.P) India

*Corresponding Author: Megha  Dhote*
*Email: meghadhote76250@gmail.com*

## Abstract:

Next generation mobile systems will use multiple antennas at the transmitter and receiver to achieve higher capacity and diversity gain at high speeds. By transmitting through multiple transmitting and receiving antennas, multiple wireless data pipes are created. A transmitted signal while propagating through the wireless channel undergoes multipath fading effect accompanied by noise and interference. Mitigation of these effects and increase in throughput is only possible if the channel is accurately estimated at the receiver in order to perform channel estimation.

Depending on the rate of channel fading, whether gradual or rapid, various authors have proposed adaptive channel estimators utilizing LMS, RLS, and NLMS algorithms. These methods may necessitate statistical channel data or may exhibit suboptimal efficiency. In terms of performance or computations. In order to overcome the above effects, the work focuses on the QR-RLS based channel estimation method for MIMO-OFDM systems.

The algorithm proposed, employing the QR-RLS channel estimation technique, offers reduced mean square error (MSE) and bit error rate (BER) when contrasted with preceding channel estimation methods.