

## IEEE Best Researcher Award and IEEE Best Teacher Award

Dr. C.Gururaj was awarded with IEEE Best Researcher Award and IEEE Best Teacher Award on 10/01/21 in the IEEE Bangalore Section 2021 AGM



**Dr Balachandra K,  
PG program in AI and ML from Purdue University**



This is to certify that

*Balachandra Kumaraswamy*

has successfully completed the

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*Christopher G. Brinton*

Dr. Christopher G. Brinton  
Assistant Professor of Electrical and  
Computer Engineering at Purdue University

Program delivered by

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Name: Dr.Vasantha Lakshmi M, Department of Electronics and Telecommunication

Title: Simulation study of PAPR reduction in OFDM schemes

Guide: Dr.B. Kanmani, Professor and Head, Department of Electronics and Telecommunication

Degree Awarded: January 2021



Abstract:

In OFDM modulation schemes, PAPR happens to be one major drawback, as the receivers need to be able to handle huge amplitude swings in the OFDM symbol, and the PAPR is dependent on the input bit pattern. Since, the input cannot be controlled, there arises a need to address the PAPR by other methods. OFDM symbols have been generated for all possible combinations for a selected modulation scheme; for example the BPSK - OFDM, the QPSK-OFDM, and computed the PAPR for every symbol. It is interesting and surprising to note that in the BPSK-OFDM scheme of modulation, irrespective of the symbol length, only FOUR symbols have a high PAPR, while all other symbols have relatively less PAPR (almost less than 50%). The researcher has explored this observation and proposed a lossy source coding technique, wherein these four OFDM symbols are not transmitted, and are replaced by any of the other symbols with less PAPR. This method introduces an error, but is less when the symbol length is

high. Similar analysis has been performed for the QPSK-OFDM and the Offset-QPSK-OFDM, and proposed appropriate source coding that introduces BER, but significantly reduces the PAPR. The proposed schemes can find application in wireless transmission schemes. Few of the proposed methods have also been implemented using suitable digital electronics circuits. Every significant observation has resulted in a publication. The Research scholar has performed extension research work in the specified area.