

## The OQAM-OFDM System Using WPT/IWPT Replaced FFT/IFFT

**Authors :** Alaa H. Thabet, Ehab F. Badran, Moustafa H. Aly

**Abstract :** With the rapid expand of wireless digital communications, demand for wireless systems that are reliable and have a high spectral efficiency have increased too. FBMC scheme based on the OFDM/OQAM has been recognized for its good performance to achieve high data rates. Fast Fourier Transforms (FFT) has been used to produce the orthogonal sub-carriers. Due to the drawbacks of OFDM -FFT based system which are the high peak-to-average ratio (PAR) and the synchronization. In this paper, Wavelet Packet Transform (WPT) is used in the place of FFT, and show better performance.

**Keywords :** OQAM-OFDM, wavelet packet transform, PAPR, FFT

**Conference Title :** ICWCN 2015 : International Conference on Wireless Communications and Networking

**Conference Location :** Lisbon, Portugal

**Conference Dates :** April 16-17, 2015