

**UNIVERSITI TEKNOLOGI MARA**

**IMPROVING STFBC MIMO OFDMA  
WITH CHANNEL ESTIMATION  
USING DFT AND DCT TECHNIQUE**

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## ABSTRACT

Full speed transmission and high capacity data rate become everyone's needs nowadays. Higher demand in rapid data transmission makes the wireless technology become more popular in this new modern era. The ability of wireless technology in supporting high data signal with the capability of MIMO antenna system and OFDMA modulation scheme in providing high data capacity and excellent performances. Therefore the alliances become one of the best solution that can fulfill everybody's dream come right in time to serve the demand. Thus, in this paper in order to boost the overall system performances, another alternative in diversity coding techniques using Space Time Frequency Block Code (STFBC) and channel estimation technique involving Discrete Fourier Transform (DFT) and Discrete Cosine Transform (DCT) are going to be investigated and tested to compare each performances in reducing losses and achieve maximum diversity order. The improvement was proven that by using STF block code\*and DCT channel estimation gain better performance in MIMO OFDMA system.

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