

## Abstract

Nowadays, technology has grown exponentially, especially multimedia sector. A lot of devices offering high-resolution picture taking feature, which in return resulting in increasing the file size of the pictures. Storage capacity though is not actually a problem since now there are many storage devices with big capacity and affordable prices. The problem lies in data transferring need. Most of people now prefer uploading their digital works on social media or online galleries and they need faster data transferring rate, considering how slow the internet connection in this country. The solution to this problem is a mechanism to reduce file size. Firas A Jassim offering a solution for picture compression, which called Five Modulus Method. By adding this process on JPEG compression, This method is able to reduce file size with better compression ratio, about 60% better than JPEG format.

In this research, the combination of FMM-JPEG method is applied on two types of pictures, SD pictures (standard definition) and SHD (Super High Definition) with each divided into three categories : 1. Photography, 2. CGI, 3. Grayscale. From the research, the researcher found the best combination which is adding FMM process before doing JPEG compression. This FMM-JPEG scheme (referred as FJPEG on future notice) is best applied for photography and grayscale pictures, where the compression result is highest, approximately 60-65%. On the other hand, grayscale compression result has the highest PNSR value compared to other types of pictures.

**Keywords:** Image, compression, lossy, JPEG, FJPEG, Five Modulus JPEG, photography, CGI, grayscale