

## Abstract

Nowadays someone can publish his arts in form of digital data easily and cheap, and accessible by many people through the internet. But problem emerge when there is other people claiming the arts as its property or alter some of the data. This cause the importance of protection to copyrights, one of them is with the method watermarking.

Applying of watermarking technique at digital data especially image, said to be good if the data inserted invisible to the eye and its carrier image do not have quality degradation and also if data inserted have robustness to various signal processing. At this final project implement watermarking at digital image using Inverse Difference Pyramid Decomposition method with Complex Hadamard Transform (IDP-CHT) which expecting the image obtained as a result of watermarking with good performance.

Watermark insertion by using IDP (Inverse Difference Pyramid Decomposition) matrix size of  $4 \times 4$  yielding better result image quality if compared to IDP matrix size of  $8 \times 8$  and  $16 \times 16$ . Better result image quality found at low detail image. Watermark inserted at high detail image more robust when given attack of Gaussian Blur, Rescaling, and JPEG compression, watermark inserted at low detail image only robust to Gaussian Blur attack.

**Keywords:** Watermarking, Inverse Difference Pyramid Decomposition, Complex Hadamard Transform