

## Color image authentication using a zone-corrected error-monitoring quantization-based watermarking technique

**Authors:** Hazem Al-Otum

**Abstract:** This article presents a semifragile color image watermarking technique for content authentication. The proposed technique can be implemented with color images and embeds a watermarking sequence into the lowfrequency coefficients of the approximation, horizontal, and vertical sub-bands of a modified two-leveled discrete wavelet transform. This is obtained by inserting a predefined value, collected from two of the three R, G, and B color layers, into the third color layer. This gives an ability to monitor modifications by observing the changes occurring in the color layer where the watermark is embedded. Here, two measures were developed to check the technique copyright and authentication performances. Experimental results have shown a high accuracy in detecting and localizing intentional attacks while exhibiting a high robustness against common image processing attacks