Abstract

A supervised learning depending on the resilient propagation neural network (RPROP) procedure has been used to solve the problem of FTIR charts recognition of the organic materials by training features extracted from two methods; principal component analysis (PCA) and discrete wavelet transform (DWT). During the testing process, it was found that; the best results are obtained from features that obtained from the principal component analysis, which in turn achieve a higher accuracy rate as well as the lowest false positive rate (where it gets accuracy rate about 97.22%, where the false positive rate about 2.7%), where DWT get an accuracy rate about 91.6%, where the false positive rate about 8.3%.

References

PCA and DWT with Resilient ANN based Organic Compounds Charts Recognition


Index Terms

Computer Science  Applied Sciences
Keywords

FTIR spectrum; Discrete Wavelet Transform; Principal Component Analysis; Resilient Propagation Neural Network