ABSTRACT

This final project discusses about the simulation and analysis of image processing in coal classification using color features. This research is expected to help people to be more intelligently chooses the type of coal that will be purchased. So, the amount of criminal in coal cases can be decrease. It used 3 types of coal which are analyzed below: coal with a high calorie value, medium, and low. Visually, these three types of coal can be distinguished based on its color. As for the step that is carried out in this study are: image acquisition, preprocessing, features extraction, and classification. The main method that is used for the purposes of the analysis is the Discrete Cosine Transform (DCT), Fuzzy Color Histogram (FCH), and K-Nearest Neighbor (K-NN). This research compares between DCT and FCH as a feature extraction method. Parameters measured is the accuracy level and computation time. This research uses 90 data. It contains 10 trial data and 20 test data for each class. The best accuracy in DCT method when the block size is 8×8, was 78,33%. Meanwhile, FCH method got 61,67%. Based on computation time, both method need less than 20 secons to get the output. Overall, FCH need less computational time than DCT.

Keywords: Coal classifications, FCH, DCT, K-NN