Automatic Partial Discharge and Noise Signals Separation using Arithmetic Coding in Time Domain and Magnitude Distributions in Frequency Domain

Abstract

This invention relates to a system and method for separating partial discharge and noise signals from digital signals. The system comprises a data collecting module configured to recording and translating electromagnetic signals measured from a sensor to digital signals and a data processing module configured to: receive digital signals from the data collecting module; generate a feature from a time domain for each of the digital signals; generate a plurality of features from a frequency domain for each of the digital signals; apply clustering algorithm on the generated features for all the digital signals to identify a plurality of distinct clusters; and display each distinct cluster on a Phase-Resolved Partial Discharge (PRPD) chart.

Figure 2 to accompany the abstract