

WAVELET-BASED ANALYSIS FOR FOULING DIAGNOSIS OF AN AIRCRAFT HEAT EXCHANGER

ABSTRACT OF THE DISCLOSURE

A method and apparatus for estimating a fouling state of a heat exchanger of an aircraft. Training sensor measurements are obtained of a parameter related to operation of the heat exchanger and a wavelet transform is applied to the training sensor measurements to obtain wavelet data. Data reduction is performed on the wavelet data to obtain representative features indicative of the training sensor measurements. A classifier is then trained to assign suitable fouling classes to the representative features. The trained classifier is used on testing sensor measurements from the heat exchanger to assign a fouling class to the testing sensor measurements in order to estimate the fouling state of the heat exchanger.

FIG.1