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Preprocessing method of online oil chromatographic data based on adaptive wavelet analysis

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Due to the influence of external environment and the error of measuring equipment, on-line oil chromatogram data contains obvious noise and the signal oscillates. The monitoring data is difficult to be directly applied on analysis of the equipment state. In this paper, a novel wavelet based de-noising method is proposed for preprocessing the on-line oil chromatography data. By analyzing the characteristics of on-line oil chromatographic data, the method of determining the decomposition level based on the probability distribution of wavelet coefficients and the method of determining the threshold value based on outliers conservation were proposed. The improved wavelet de-noising method is applied on analyzing the on-line oil chromatographic data of a defective UHV reactor. The results show that the proposed method is feasible and effective.

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