

عنوان مقاله:

Standard Addition Connected to Selective Zone Discovering for Quantification in the Unknown Mixtures

محل انتشار:

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خلاصه مقاله:

Univariate calibration method is a simple, cheap and easy to use procedure in analytical chemistry. A univariate analysis will be successful if a selective signal can be found for the analyte(s). In this work, two simple ways were used to find the selective signals, spectral ratio plot (SRP) and loading plot (LP). Both of them were able to discover the selective regions in the recorded data sets. For SRP, the spectral profiles of unknown mixture and standard sample of analyte were necessary. However, in LP, multivariate data of standard addition procedure was necessary to discover the selective zones. After discovering the selective wavelengths, the standard addition method can be used to determine the concentration of given analyte. The standard addition curve was interpolated to reduce any bias error. To demonstrate the ability of LP and SRP, several synthetic and real datasets were analyzed and the results were reported. The SRP and LP were used to determine some additives in food and hygienic real samples using spectrophotometric data.

کلمات کلیدی:

Principal component analysis, Spectral ratio plot, Loading plot, Spectral selective region, Preservatives, Standard addition

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