

Special Issue on Multiple Spectrum Analysis for Food Quality and Safety

CALL FOR PAPERS

As technology develops, spectrum analysis has become the main method for the analysis and identification of compounds. Spectrum analysis includes a variety of methods, such as UV-visible spectroscopy (UV-vis), infrared spectroscopy (IR), Raman spectroscopy, nuclear magnetic resonance (NMR) spectroscopy, mass spectrometry (MS), high-performance liquid chromatography (HPLC), diode array detectors (DAD), and HPLC-MS. They have been widely used in the detection of food hazards and the classification of food quality due to their advantages of rapid and accurate detection, which is beneficial in the detection of pesticides, veterinary drugs, heavy metals, and biotoxins in food, and in the identification of food quality and its authenticity.

In recent years, chemometrics have been widely used in spectral analysis to increase the specificity and intelligence of the analysis. However, because of the complexity of food substrates, the construction of chemometrics with intelligent analysis still faces significant challenges. The specificity of most spectrum analysis is only targeted at a very limited number of reaction groups of compounds. Due to the significant detection interference caused by the complex food matrix, false negative results caused by trace amounts of harmful substances, and the failure of targeted detection caused by endless adulteration, the specificity, and sensitivity of spectrum analysis need to be further improved. Furthermore, with the most commonly used chemometrics algorithms, it is difficult to accurately extract and discriminate the huge amounts of data generated by mass spectrometry, such as ultra-high performance liquid chromatography-quadrupole time-of-flight mass spectrometry (UPLC-QTOF).

This Special Issue aims to create a forum of discussion on novel spectral analysis methods, like UV-vis, IR, Raman, NMR, MS, HPLC-DAD, and HPLC-MS, combining chemometrics algorithms for application to food quality and safety. Especially welcome are studies incorporating methods with novel detection mechanisms. We welcome both original research and review articles.

Potential topics include but are not limited to the following:

- ▶ Spectrum analysis of pesticides in food
- ▶ Spectrum analysis of veterinary drugs in food
- ▶ Spectrum analysis of heavy metals in food
- ▶ Spectrum analysis of biotoxins in food
- ▶ Spectrum analysis of food nutrients and functional compounds
- ▶ Classification of food shelf life and freshness
- ▶ Classification of food aging time
- ▶ Classification of food flavors
- ▶ Tracing of food geographical origins
- ▶ Untargeted or targeted detection of food adulterations and fraud

Authors can submit their manuscripts through the Manuscript Tracking System at <https://review.hindawi.com/submit?specialIssue=804152>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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Submission Deadline

Friday, 8 July 2022

Publication Date

November 2022