

Analysis of Food and Beverages

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We are delighted to introduce the “Analysis of Food and Beverages Section of Separations”, which focuses on developing and applying new approaches based on separation techniques for the characterization of foods and beverages. Hence, scholars have a specific forum for the rapid publication of original articles, short communications, and reviews on these topics. It is important to note that the role of separation techniques in these papers must be meaningful, either in the sample treatment or in the analytical determination. In addition, manuscripts must entail novelties, significant advances over other existing options, or open new fields for further exploration. All manuscripts to be considered in this section will undergo a rigorous peer-review process, and decisions will be based on recommendations from independent reviewers and editors’ criteria.

We will welcome improved extraction processes assisted by enzymes, ultrasounds, microwaves, pressurized liquids, or supercritical fluids, in which green solvents and “supersolvents” such as natural deep eutectic solvents gain popularity, especially due to their customizable nature for each type of analyte and matrix. Selective extraction and subsequent purification of sample extracts by conventional and dispersive solid-phase extraction, solid-phase microextraction, and membrane-assisted processes will be interesting options, especially when dealing with new stationary phases, fibers, or functionalized membranes.

Concerning the techniques of analysis, liquid chromatography, gas chromatography, and capillary electrophoresis are essential to characterizing food products and determining the components of interest. In this regard, methods based on new types of columns will deserve our attention. Apart from these well-established options, papers based on new instrumental platforms will also be welcome, such as 2D chromatography, ion mobility spectrometry, and microchip-based devices.

Beyond all the analytical developments that obviously deserve our attention, applications aimed at determining the compositional profiles of food, contaminants, toxins, and quality and fraud markers will be encouraged. In this field, society and the scientific community are increasingly concerned with food security, traceability, and authenticity. Therefore, in addition to determining toxic, harmful, allergenic, or potentially dangerous compounds for sensitive individuals, the assurance of quality attributes such as origin, variety, agricultural, and manufacturing practices will be essential. This topic can be approached in various ways, although combining separation methods with chemometrics has opened great opportunities for a more comprehensive approximation. Exploratory studies of chromatographic or electrophoretic data by multivariate methods represent a starting point along this line. These often precede other supervised studies to classify foods based on their characteristics or even quantify percentages of intentionally added impurities or adulterants.

Following, we highlight some hot topics mentioned above, although this list does not exclude other potential ones that could be of interest as well:

- Advanced extraction methods;
- Green solvents;
- Natural deep eutectic solvents;
- New stationary phases;



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- Membrane-assisted extraction;
- New chromatographic approaches;
- Ion mobility spectrometry in food analysis;
- Microchips in food analysis;
- Food contaminants and toxins;
- Food fraud and quality markers;
- Food authentication.

In short, the aims and scope of this section are broad and the possibilities diverse, always keeping in mind that the manuscripts submitted must be of high quality and deal with novel aspects of the analysis of food and beverages, with approximations in which the role of separation techniques is prominent. Separation editors, contributors, and reviewers will continue to strive to improve the quality and scientific impact of the papers published in this section.

Conflicts of Interest: The authors declare no conflict of interest.

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