Special Issue

Emerging Techniques and Trends in Food Analysis and Quality Control

Message from the Guest Editors

Contemporary food production and distribution challenges require innovative solutions in food quality analysis and control. In this context, new analytical techniques uniquely enable fast, precise, and multifaceted assessment of food composition and quality. In recent years, spectroscopic technologies such as near-infrared, Raman, and nuclear magnetic resonance spectroscopy have been advancing rapidly, enabling non-invasive chemical composition analysis. Equally important are chromatographic techniques, which, when combined with other methods (e.g., mass spectrometry), offer extremely high sensitivity and specificity, allowing the detection of even trace amounts of substances. The use of artificial intelligence (AI) in food analysis and food quality control opens up new perspectives. AI can support analytical processes by analyzing large datasets, identifying patterns, and predicting potential quality problems. Combining AI with analytical techniques should enable the identification of subtle relationships in data, leading to more precise forecasts and decisions on food quality.

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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