2020

Preface

Follow this and additional works at: https://www.jfda-online.com/journal

Part of the Food Science Commons, Medicinal Chemistry and Pharmaceutics Commons, Pharmacology Commons, and the Toxicology Commons

Recommended Citation

Preface

Huan-Tsung Chang [a], Yu-Fen Huang [b]

[a] Department of Chemistry, National Taiwan University, Taiwan
[b] Institute of Analytical and Environmental Sciences, National Tsing Hua University, Taiwan

Nanoscale science and technology have been the most innovative fields over the past decade and promise to be important in many fields like food science in the near future. Nanotechnology allows precise control and manipulation of matters at the nanometer level, with desired physiochemical properties such as high catalytic activity and strong photoluminescence. Nanotechnology has shown unprecedented opportunities for the preparation of materials and fabrication of systems for many revolutionary applications in medicine, cosmetics, agriculture and food.

Food safety remains a critical issue worldwide. Food contaminated with harmful pathogens, microbes, toxins or chemical substances such as pesticides, veterinary drugs, antibiotics, environmental pollutants, as well as illegal additives and adulterants contributes to more than 200 diseases, posing a serious threat to human health. In order to manage and address the problems associated with foodborne illnesses, it is highly desirable to develop sensitive, easy-to-use and affordable analytical approaches for rapid detection of food contaminants and toxicants. Many nanomaterial-based sensors have shown their advantages over conventional tools to ensure the safety and quality of foodstuffs, including simplicity, low cost, and on-site analysis.

This special issue includes 11 review articles that provide a comprehensive overview of the current advances in the design and development of nanomaterial-based sensors for food analysis. The issue focuses on the use of nanomaterials such as noble metal nanoparticles, metal nanoclusters, quantum dots and carbon dots for food analysis through colorimetric, fluorescent, and electrochemical detections. Recent trends in the development of portable and robust devices for rapid assessment of food safety as well as the challenges for practical implementation and future research directions are also provided.

We are extremely grateful to the authors and peer-reviewers for contributing their expertise and perspectives to this special issue. The editors would also like to thank Ms. Lily Chiu, the executive editors of JFDA, for her efforts and hard working.