

## Special Issue

# AI-Driven Methods for Chemometric Spectroscopy: Algorithms and Applications

### Message from the Guest Editors

The integration of artificial intelligence (AI) and big data analytics with spectroscopic sensing has opened up new frontiers in chemical and material analysis. Traditional chemometric approaches often face limitations when dealing with high-dimensional, nonlinear, and noisy spectral data. Emerging AI-driven methods, including deep learning, transfer learning, and interpretable machine learning, offer powerful tools for extracting meaningful patterns, enhancing model robustness, and enabling real-time decision-making in complex sensing environments. This Special Issue invites original research and review articles focused on the development and application of intelligent algorithms for chemometric spectroscopy. Topics of interest include AI-based spectral preprocessing, regression and classification models, feature extraction, anomaly detection, and data fusion from multi-modal or multi-sensor platforms. We particularly welcome contributions demonstrating real-world applications. By bridging AI and spectroscopic chemometrics, this Special Issue will provide a forum for advancing next-generation intelligent sensing technologies and data-driven analytical frameworks.

### Guest Editors

Dr. Liang Zou

School of Information and Control Engineering, China University of Mining and Technology, Xuzhou 221116, China

Dr. Yue Huang

College of Food Science and Nutritional Engineering, China Agricultural University, Beijing 100085, China

### Deadline for manuscript submissions

27 July 2026



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Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland  
Tel: +41 61 683 77 34  
[sensors@mdpi.com](mailto:sensors@mdpi.com)

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### Editor-in-Chief

Prof. Dr. Vittorio M. N. Passaro  
Department of Electrical and Information Engineering, Politecnico di Bari, Via Orabona 4, 70126 Bari, Italy

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