

Special Issue

AI-Driven Analysis and Applications of Nanoscale and Single-Molecule Systems

Message from the Guest Editor

Artificial intelligence (AI) and machine learning (ML) have emerged as powerful tools to decode nanoscale and single-molecule signals, enabling pattern recognition, feature extraction, and predictive modeling beyond traditional statistical approaches. This Special Issue welcomes original research articles and reviews that explore the intersection of AI and nanoscale/single-molecule systems. Topics of interest include, but are not limited to the following:

- AI-based signal processing for single-molecule measurements
- Deep learning for nanoscale imaging and spectroscopy
- Machine learning-assisted molecular identification and sequencing
- Data-driven modeling of nanoscale transport and tunneling phenomena
- AI-enabled biosensing and nanodevice optimization
- Applications in biomedical diagnostics, materials science, and quantum technologies.

We aim to provide a comprehensive platform for interdisciplinary contributions that bridge nanoscience, molecular engineering, and data science, accelerating innovation in both fundamental research and practical applications.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

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.

Editor-in-Chief

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