



## Advanced Materials for Energy Conversion and Storage Processes

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### Message from the Guest Editors

Dear Colleagues,

This Special Issue's topics include, but are not limited to, the following:

- The development of novel nanostructured materials for energy storage.
- Artificial intelligence and machine learning techniques for energy conversion and storage devices and systems.
- Battery materials: Lithium-ion cathodes, anodes, and solid electrolytes. Smart energy devices are also being developed for energy storage and conversion.
- Fuel cells, including proton exchange membranes (PEMs), catalysts, non-precious metal catalysts, and electrode materials (e.g., carbon nanotubes, graphene).
- Solar cells: Materials such as perovskite-based compounds, inorganic photovoltaics, and quantum dots for improved light absorption and charge transport in solar cells are being used.
- Hydrogen storage materials, including metal hydrides, carbon-based materials, and porous frameworks.
- Smart grid technologies, including energy storage systems, sensors, and power electronics. Materials like superconductors, wide-bandgap semiconductors, and advanced composites are being developed to enable the integration of renewable energy sources and improve grid stability.





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## Message from the Editor-in-Chief

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