Special Issue

Advances in Atomic Layer Deposition Process, Applications and Modeling

Message from the Guest Editor

Atomic Layer Deposition (ALD), with its precise control over the deposition of thin, conformal films at the atomic scale, is widely used for surface and interface modification, as well as for enhancing oxidation resistance in metals and functional materials. This Special Issue will explore the diverse applications of ALD, particularly in the enhancement in lithium (Li) and sodium (Na)-ion batteries, as well as solid-state batteries. Additionally, it will investigate various ALD film deposition processes and their influence on material properties and performance. Furthermore, the Special Issue will examine the failure mechanisms of materials before and after ALD modification, in conjunction with electron microscopy characterization. Advanced modeling approaches will also be discussed, offering a holistic understanding of how ALD can be optimized for next-generation energy storage technologies. This Special Issue is designed to provide a comprehensive overview of the latest advancements in ALD, focusing on its potential to revolutionize various fields.

Guest Editor

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Deadline for manuscript submissions

20 October 2025



an Open Access Journal by MDPI

Impact Factor 3.2 CiteScore 6.4 Indexed in PubMed



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About the Journal

Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. Materials provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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