

Editorial

Special Issue “Functional Oxide Thin Films and Nanostructures: Growth, Properties, and Applications”

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It has been almost three years since we enthusiastically accepted the offer to be guest editors for this Special Issue of *Coatings*, entitled “Functional Oxide Thin Films and Nanostructures: Growth, Properties, and Applications”.

Recent materials nanotechnologies have introduced the possibility of fabricating oxide thin films on a nanometric level, and this possibility also applies to nanocomposites. In parallel, recent measurement technologies can supply characterizations of their unique properties arising from limited regions of surfaces and interfaces. This Special Issue provides an opportunity to share surface-related science and engineering topics on oxide thin films and nanocomposites in an interactive and interdisciplinary manner. The goal is to elucidate commonalities and differences between multilayer interfaces and nanocomposite grain boundaries.

This Special Issue of *Coatings* was intended as an effort to bridge the gap between materials science and the applications of oxide thin films and nanostructures.

Originally, the topics of interest included but were not limited to: novel technologies to fabricate oxide nanomaterials; flexible and mechanically rigid oxide materials; wide categories of functional oxides (semiconducting, superconducting, magnetic, ferroelectric, multiferroic, optical); the understanding of structures and properties of oxide materials effectively exhibiting the above functions; the similarities and differences between “normal thin films” and “ultrathin films and multilayers”, influenced by surfaces and interfaces; and the similarities and differences between “normal composites” and “nanocomposites”, influenced by larger and smaller grains.

The ten published papers reflect the original spirit of the Special Issue, ranging from nanoparticles [1,2] to thin films [3–8] to heterostructures [9] and homojunctions [10] and covering various aspects of oxide-materials preparation, characterization, and applications.

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