Special Issue

Transparent Conducting Oxides for Optical Engineering: Progress in Theoretical and Experimental Approaches

Message from the Guest Editor

This Special Issue will highlight progress in the development of thin films and multilayers made with transparent conducting oxides (TCOs). Additionally, it will seek to advance our understanding of the interplay between the structural, transport, and optical properties of TCOs at a fundamental level. These materials have become ubiquitous in key modern technologies such as optoelectronics, photovoltaic cells, smart windows, light-emitting devices, and photonics, all of which are important to the development of society. To better adapt the material properties to application requirements, several issues must still be addressed, such as efficient and controllable *n/p*-type doping, or potential p-type TCOs with intrinsic higher holes mobility and functional broadband transparency. Highly performant TCO thin films need advances in processing and device integration. New synthesis methods should be developed to ensure real-time control of the concentration and distribution of defects and dopants.

- New TCO materials, thin films, and multilayers.
- Non-stoichiometric TCOs.
- Surface and interface engineering.
- Conduction mechanisms...

Guest Editor

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Message from the Editorial Board

Now more than ever, research is asked to deliver knowledge and technologies to solve the major challenges faced by our society. The development of new materials and devices for (without the ambition to be exhaustive) energy, health and food technology, together with the need for establishing processes that reduce the impact on critical resources and the environment, is indeed in the spotlight of most contemporary research. Surface science and engineering play a key role in this regard, with an incredible potential in delivering new and deep scientific understanding and technical solutions essential to solve most of the major societal challenges.
Coatings is a well-established, peerreviewed, online journal dedicated to the vibrant field of surface science and engineering. Coatings publishes original research articles that report cutting-edge results and review papers that make the point on the hottest research topics.

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