Special Issue

Advances in Thin Films for Photovoltaic Applications

Message from the Guest Editor

Photovoltaics (PV) is one of the major players for the transition to a sustainable energy future. Research at solar cell level is active on many fronts to find more efficient and cost-effective solutions: high efficiency c-Si solar cell concepts (a-Si:H/c-Si heterojunction, novel carrier-selective passivating contact schemes, etc.), thin-film technologies (hybrid perovskites, CIGS, CdTe, CZTS, III-V compounds, etc.), and tandem approaches combining c-Si and thin-film technologies to overcome the single-junction efficiency limit. All these solar cell versions are stacked structures where thin films are widely employed with different roles, such as carrier selective contacts, passivation layers, electrodes (opaque and transparent), components with optical functionalities for efficient management of sunlight, or even as the core light-absorber (thin-film PV).
The aim of this Special Issue is to collect and share the latest progress in terms of properties, fabrication processes, mechanisms, and applications of this broad variety of thin films for PV (active layers, supportive layers, and external coatings) in all the technologies under investigation and development.

Guest Editor

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Deadline for manuscript submissions

closed (30 June 2020)

Coatings

an Open Access Journal by MDPI

Impact Factor 2.8
CiteScore 5.4

mdpi.com/si/26482

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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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