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Surface Engineering and Thin Film Processing Technologies for Energy-Efficient Applications

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Message from the Guest Editor

Producing energy without consuming too much is a challenge we have to face nowadays, and in terms of photovoltaic, passive or active solar filtering, energy storage, or photocatalytic applications, smart thin-film production could be the solution.

Despite the high reproducibility and atomic-scale control that physical methods benefit from, only the solution-based methods (dip-coating, spin-coating, blade-coating, spraying, evaporation, or printing) allow fine control over layer composition, thickness and porosity, versatility in doping and precursor choice and low or room-temperature growth of materials.

However not all the processes are readily scalable and this special issue will precisely address this problem. The following aspects will be developed in this issue:

Green, chemical, up-scalable routes for thin functional films processing and device fabrication

Innovative solution strategies for increasing the thin film performance

Representative parameters assessment for high-scale thin films performance evaluation

Film fabrication up-scaling perspectives and limitations

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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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