Advanced Strategies in Thin Film Engineering by Magnetron Sputtering

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Message from the Guest Editors

Recent years have witnessed the flourishing of numerous novel strategies based on the magnetron sputtering technique aimed at the advanced engineering of thin films, such as HiPIMS, combined vacuum processes, the implementation of complex precursor gases or the inclusion of particle guns in the reactor. At the forefront of these approaches, investigations focused on nanostructured coatings appear today as one of the priorities in many scientific and technological communities: The science behind them appears in most of the cases as a "terra incognita", fascinating both the fundamentalist, who imagines new concepts, and the experimenter, who can create and study new films with as of yet unprecedented performances.

These scientific and technological challenges, along with the existence of numerous scientific issues that have yet to be clarified in classical magnetron sputtering depositions (e.g., process control and stability, nanostructuration mechanisms, connection between film morphology and properties or upscaling procedures) have motivated us to edit a specialized volume containing the state-of-the-art that put together these innovative fundamental and applied research topics.
Message from the Editor-in-Chief

Now more than ever, research is called for to produce technologies and improve knowledge 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 at the center of most contemporary research. Surface science and engineering play a key role in this regard. Refining surfaces and their modifications provides new materials, architectures and processes with a huge potential to aid most societal challenges. *Coatings* is a well-established, peer-reviewed, online journal that focuses on the dissemination of publications in the field of surface science and engineering. *Coatings* publishes original research articles that report cutting-edge results and review papers on the hottest topics.

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