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Nanoscience and nanotechnology, collectively called nanotechnology, are emerging disciplines that have attracted enormous research interest for about three decades. Nanotechnology is not a single process nor does it involve a specific type of material. Instead, the term covers all aspects of the production of materials, devices, and systems by manipulating matter at the nanoscale.¹ Nanotechnology is widely considered to be the latest key technology, able to change our lives in many ways, and all the more so because it is becoming increasingly linked with advances in many different scientific fields. The tremendous progress of nanotechnologies during the last decades has led to a greater availability of techniques for the fabrication of nanometric structures with controlled composition and dimensions, resulting in nanostructures with very specific properties and several functionalities.

The Nanostructured Thin Films IV conference was held in San Diego, California, on 23–25 August 2011. Around 50 papers were submitted encompassing topics covering many relevant aspects of nanostructured thin films, from modeling, fabrication, and characterization to practical applications. As such, eight sessions were arranged, namely Plasmonics, Optics, Homogenization Studies, Applications, Nanostructured Porous Silicon, and Fabrication and Characterization I, II, and III. Additionally, the opening session was devoted to green nanotechnology.

This special section of the *Journal of Nanophotonics* comprises a set of selected papers that have been expanded from those presented during the Nanostructured Thin Films IV conference.

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References

1. R. J. Martín-Palma and A. Lakhtakia, *Nanotechnology: A Crash Course*, SPIE Press, Bellingham, WA (2010).