Special Issue

New Hole Transporting Materials for Perovskite Solar Cells

Message from the Guest Editor

A critical component in the PV system is the hole transporting material (HTM), which is essential for extracting the positive charges from the light absorber to the electrode.

Additionally, even though perovskite technology can overcome the current limits on PV manufacturing, it must comply with a lifetime expectation comparable to silicon-wafer based modules. However, due to the low conductivity of many HTMs in their pristine form they usually require the incorporation of dopants/additives to the layer, with limited stability. Moreover, perovskite materials suffer from severe decomposition activated by high temperature, ultraviolet light, and contamination from the environment. Therefore, not only are HTMs necessary to efficiently extract the photogenerated carriers at a low material cost, but also the surface passivation at the HTM interface could become a decissive factor to make this technology market-viable.

In this Special Issue, we would like to cover all important aspects concerning novel HTMs applied to perovskite PV, including photopysical investigations, studies on molecular interactions and aggregate formations, as well as innovations in solar cell architectures.

Guest Editor

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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