

# Tentative Outline

## Special Thematic Issue for the journal NANOTEC

### Advanced Materials and Devices for Optoelectronics

Sectional Editor: Baiquan Liu

#### • Scope of the Thematic Issue:

Advanced materials and devices have received broad and intense attention from both academia and industry due to the great potential in a wide range of optoelectronic applications including light-emitting diodes, solar cells, lasers, detectors, sensors, and so on. Emerging concepts, strategies and techniques are believed to be beneficial to the syntheses of optoelectronic materials, the understanding of device engineering, the optimization of film morphologies, the exploration of interfacial contacts, the innovation of device architectures, and the investigation of working mechanisms. On the other hand, the use of theoretical simulations in advanced materials and devices science gives new insights into the intrinsic properties of optoelectronic science, which may introduce the potential of further unexplored applications. Therefore, the development of advanced materials and devices for optoelectronics is of particular significance. The goal of this Thematic Issue is to cover the recent developments in the field of advanced materials and devices, including novel concepts, fundamental research, and theoretical results.

**Keywords:** optoelectronic, material, interface, morphology, device, mechanism

#### Sub-topics:

The sub-topics to be covered within the issue are:

- Synthetic and characterization methodologies for materials
- Optical and electrical characteristics of materials
- Film morphology
- Interfacial and surface chemistry
- Applications of optoelectronic materials
- Working mechanisms of optoelectronic devices
- Theoretical modeling
- Challenges in development of optoelectronic materials and devices

#### Tentative titles of the articles:

- 1, A review on quasi two-dimensional perovskite-based light-emitting diodes
- 2, Reduced-dimensional perovskites for light emission
- 3, Research progress of environmentally friendly copper-based perovskite optoelectronic devices
- 4, Research and progress of inorganic infrared electrochromic materials and devices
- 5, On Emerging Evolution and Critical Perspectives of DUV LED packaging Technologies.
- 6, Silver-based compounds nanocrystals for emerging applications
- 7, AlGaIn based UVC LEDs: recent developments and applications
- 8, Crystallization Regulation of Solution-processed Two-dimensional Perovskite Solar Cells
- 9, Exciplex based WOLEDs: recent developments and applications of exciplex.
- 10, Recent progress of colloidal quantum well optoelectronic devices

#### Schedule:

✧ Thematic issue submission deadline: 28/02/2023

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