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Editorial

Nanomaterials for Nanooptoelectronics Device Applications

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Nanomaterials are a new class of materials, with dimensions in the 0.1 μm~0.1 nm range, that provide great potentials of improving and enhancing the performance and functionality of many industrial products. Nanostructures, based on their shapes, can be categorized into uniform zero-dimensional (0D), elongated one-dimensional (1D), and planar two-dimensional (2D) structures. The recent emphasis on the nanomaterial research is put on 1D nanostructures at the expense of 0D and 2D ones, perhaps due to the intriguing possibility of using them in a majority of short-term future applications. The most successful examples are seen in the microelectronic, green energy or display where these have always meant a greater performance ever since the invention of transistors, invertors, and lightings, for example, higher density of integration, faster response, lower cost, and less power consumption.

In recent years, the nanomaterials for nanooptoelectronics device applications have been highly developed in various fields, due to their flexibility and light weight for daily use. As a result, the field of nanooptoelectronics device has been the subject of intensive researches and investigations. In addition, nanooptoelectronics devices are environmentally sustainable due to the abundant availability of the nanostructured raw materials. The chance to share and discuss these crucial nanooptoelectronics developments in a timely and influential forum is important. This special issue selects 20 papers about display, solar cell materials, devices, and processing, nanoscale luminescent materials, and other related fields. This special issue enables interdisciplinary collaboration between engineering technologists and science in the industrials and academic field.

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