Editorial

Applications of Advanced Nanomaterials to Microelectronic and Photonic Devices

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The scope of the special issue is as follows. Nanomaterials which provide one of the greatest potentials for improving performance and extended capabilities of products in a number of industrial sectors are a new class of materials, having dimensions in the 1~100 nm range. Nanostructures can be divided into zero-dimensional, one-dimensional, and two-dimensional based on their shapes. The recent emphasis in the nanomaterials 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 microelectronics, where “smaller” has always meant a greater performance ever since the invention of transistors: for example, higher density of integration, faster response, lower cost, and less power consumption. In recent years, applications of advanced nanomaterials on microelectronic and photonic devices have been a highly developing field, due to the flexibility and light weight for daily use, which has the potential to be deployable. This special issue selects many papers about advanced nanomaterials on microelectronic and photonic devices topics. It enables interdisciplinary collaboration between science and engineering technologists in the academic and industrial fields.

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