



## Editorial

# *Universal Journal of Nanoscience*—For a Greater Knowledge of Nanoscience

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It is my great pleasure to welcome you to *Universal Journal of Nanoscience (UJN)*, an international, peer-reviewed, open access journal published online by Universal Wiser Publisher (UWP), which is dedicated to nanoscience and nanotechnology.

Nanoscience and nanotechnology are the study and application of extremely small things (usually less than 100 billionths of a meter) that deal with the control of matter at the atomic and molecular scale, and can be used across all the other science fields, such as chemistry, biology, physics, materials science, and engineering. Although modern nanoscience and nanotechnology are quite new, nanoscale materials were used for centuries. Medieval stained-glass windows in which alternate-sized gold and silver particles created colors are an example of how nanotechnology was used in the pre-modern era. The concept behind nanoscience began with a lecture entitled “*There’s Plenty of Room at the Bottom*” by physicist Richard Feynman on December 29, 1959, which described a process in which scientists would be able to manipulate and control individual atoms and molecules [1]. In 1974, in his explorations of ultraprecision machining, Professor Norio Taniguchi coined the term “*Nanotechnology*” to describe semiconductor fabrication processes such as thin film deposition and ion beam milling [2]. Since the 1980s, it is with the invention of new instruments, such as scanning tunneling microscope (STM) and atomic force microscope (AFM), which make it possible to “see”, “touch” and “move” individual atoms, that modern nanotechnology has started [3].

Among many outstanding works related to nanotechnology, three recent developments and their applications highlight the research front in Nanoscience. First, the rapid progress in nanomaterials and their tremendous achievements have motivated researchers to adopt some of these technologies in energy systems, such as lithium-ion batteries and supercapacitors, used in many consumer electronics and large-scale storage for the power grid and electric vehicles, for which rapid charging/discharging reaction is required [4]. Second, nanocarrier nanotechnology can provide multiple chemical formulations of biocompatible nanoparticles (amino acids, natural compounds) enabling the efficient delivery of therapeutic drugs for infections and autoimmune diseases, as well as cancer. The use of nanoparticles in biological applications has rapidly progressed to practical applications in the diagnosis and treatment of human cancer. Upon binding nanoparticles with biomolecules, they can be used to localize the cancerous area as well as for traceable drug delivery with high affinity and specificity [5]. Third, the high photoresponsivity of novel photodetector based on semiconductor quantum dots and reduced graphene oxide (rGO) heterostructure was explained in terms of charge transfer caused by appropriate band alignment across the interface between dots and rGO, where dimensionality and quantum confinement of nanostructures synergistically enhance the overall performance of the device [6].

*UJN* provides an advance forum for the nanoscience and nanotechnology research at the interfaces of chemistry, biology, medicine, materials science, physics, and engineering. The experimental details must be fully documented and the results reliably reproduced. *UJN* aims to publish works relevant to nanoscience areas of interest, which include, but are not limited to: nanomaterials, nanomedicine, nanoelectronics, nanostructures, nanotechnology, nanometrology, nanofabrication, applied nanoscience, computation of nanoscience. Authors are encouraged to submit reviews, original research papers, communications, letters, and short notes that are relevant to any field of study involving nanoscience and nanotechnology.

I hope this exciting project piques the interest of the nanoscience community, that you enjoy reading *Universal Journal of Nanoscience*, and we are looking forward to receiving your manuscripts for publication in this journal!

## References

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