

Nanotechnology: An Urgent Need

Francisco M. Marquez Linares

Nanomaterials Research Group, School of Science and Technology, USA.
Email: fmarquez@suagm.edu

Received June 1st, 2013, revised July 2nd, 2013; accepted July 9th, 2013

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From the first forecasts and expectations of nanotechnology, in the late 90s, there are many things that have changed and too many expectations not fulfilled. By 2050, the population is expected to exceed 9 billion people. At that time, or even before, the situation in the world can be very difficult if we do not put all the means at our disposal.

It is true that nanotechnology has helped to improve many things, including life expectancy, but it is also true that environmental sustainability should be promoted so that in a few years, our descendants may have a decent life.

Improvements obviously go through the scientific and technological development. Developing countries understand this and are investing significantly in research and development. Yet, there is much, very much, to do. The current global crisis has jeopardized the technological development of many countries. In countries like Spain, where public investment was never enough, the crisis has imposed savage cuts in science. These cuts, which for some people are not transcendental, will mark a before and after in the development of this and many other countries. Deficiencies of these countries are overcome,

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at least partially, by the expectations of investment, research development and growth potential of other countries like China. However, the design of a "future" must be necessarily a global action that addresses specific objectives such as the Climate Change, water scarcity, environmental pollution and energy. These objectives can be achieved with the help of nanotechnology.

The main areas of development in nanotechnology include the production and storage of energy, environmental diagnostics and cleanup, development of new nanocomposites, synthesis of increasingly efficient chemical, biological and physical sensors, cell and tissue-based sensors, nanomedicine and manufacturing at the nanoscale. During the coming years, these and other areas will need to be globally coordinated and developed in a sustainable manner.