

Need for a Paradigm Shift in Quality Philosophy as applicable to Nanotechnology

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Abstract

One of the most promising emerging technologies is nanotechnology, which is making deep and interdisciplinary forays in to divers engineering disciplines. The benefits of quickly embracing this technology need to be understood to appreciate the penetration of nanotech products in our society. Many developing countries are following development programs like those of India, and which are at times much more aggressive with scant regard towards environment. Nations in their rush towards acquisition of nanotechnology for betterment of their people or regional power gains have apparently paid scant attention to Quality assurance, Environmental, health and safety issues of nanotechnology. The problem has been compounded due to absence of over encompassing laws as nanotechnology is a nascent technology.

Nations see strategic interests in products emanating from emerging technologies; in that they hope to be in a position of strength to exploit arising opportunities when such technologies start to have impact on global economy.

However, the effect that such technologies will have during the next decade on the marketplace is difficult to estimate because of potentially new and unanticipated applications. The pervasive nature of nanotechnology research, and the anticipated outcomes that will influence future industrial products, implies the need to focus on areas where concerns are likely to arise.

The unchecked long-term use of nanotechnology application in civil and military can lead to disastrous results for the humanity. Since there appear to be quality related grey areas in production and surveillance of such products, question arises as to what role Quality should play, such that it assists in building an inclusive society in harmony with the environment. It is time probably, that quality needs to be enveloping the conceptual stage of a product, its useful life and right up to its disposal and reuse. The paper will address such issues and underpin a view that it may be time for a paradigm shift in Quality philosophy in the manner it needs to be applied to nanotechnologies.