

## Message from Convener

### *Better Materials for Better Living*



**Dr. M. A. Shah**

Few would debate imperative to technologies and fewer bother about how to plan for it. Our state has been quite on a receiving end when it comes to key feature of modern living. No wonder we are dependent and lagging behind in latest avenues. There should have been macro policy for planning investment in innovations or adoption of newer technologies. If we are to progress and address pressing challenges of modern scientific intellect, I suggest attention to nanotechnology and other parallel updated streams of science and engineering.

Let me explain how and why? Technological Science is developing and expanding at a dazzling speed. The emerging field of nanoscience is leading to a technological revolution in the world. It is the next industrial revolution and almost all industries will be radically transformed by it in few years and this technology would directly benefit a common man when it comes to commercial use. It has already established a beachhead in the economy in various sectors. Researchers from across academic disciplines could harvest solutions for the major crises facing the world in terms of energy, water shortages, hunger, an ailing environment, inefficient education, terrorism, poverty, fatal viruses and fatal diseases using the technique developed.

The rapid pace of discoveries and developments in the realm of nano indicates that this newly emerging field is different from others and therefore gives rise to specific questions, although there are problems common to other advanced technologies. The aim of exploring the world of nano is to discover new properties and to translate new knowledge into the manufacturing process for obtained enhanced structures and components with novel chemical physical or biological properties. This futuristic manufacturing method can virtually invade and pervade all areas of human life, since it modifies the identity of all mater, animate and inanimate. It will for sure revolutionize human society in an ever unprecedented manner. It is certain that that this new scientific branch and associated technology will generate desired but also undesired results, which will have consequences for the society at large and change its structure, organization and functioning in the larger term. Different aspects relevant to nanosciences and nanotechnology

need to be woven into the nanodiscourse and thus we are looking into these specific aspects with focus on the developing world.

The emphasis in nanosciences and nanotechnology, hailed as the science of the future and the technology of the next generation and believed to possess infinite market potential, lies on the control, manipulation and construction of matter at the atomic and molecular level. Recent studies have revealed that the significance and importance of nanotechnology for foresting economic growth, human health and incrementing wealth in the developing world. Possible applications of nanotechnology in the fight against poverty will be addressed with practical examples. The most successful examples are in micro-electronics, where smaller has always meant greater performance ever since the invention of transistor: faster response, lower cost and less power consumption. The unique properties of nanomaterials have motivated the researchers to develop the simpler and inexpensive techniques to produce nanostructures of technologically important materials.

It offers not just better products but a vastly improved manufacturing process. A computer can make copies of data files-essentially as many copies as you want at little or no cost. It may only be matter of time until the building of products becomes as cheap as coping of files. There is a misconception that nanotechnology is related only to high profile scientists and that it would provide technical assistance in complicated projects not related to common man. But this technology would directly benefit a common man when it comes to commercial use. But till then there is an immediate need to convert this science with proper technology. It has already established a beachhead in the economy. The clothing industry is starting to feel the effects of nanotech. The production of smart-clothing is easily possible by putting a nano-coating on the fabric. Fabric industries are using embedded nanoparticles to create stain repellent Khakis. This seemingly simple innovation will impact not only Khaki wearers, but dry cleaners, who will find business declining, detergent makers, who will find less of their product moving off the shelf and stain removal makers who will experience a sharp decrease in customers. Imagine a shirt which protects you from cold during chilly weather, as well as provides you cooling effect during the hot season. Also, if it is light colored at high temperature, it could transform into dark color during winters, so as to provide soothing effect. It has played a major role in development of sensors. If these sensors are fitted into the uniform of soldiers and their blood comes in contact with the sensor, it would pass information about the wearer's condition to the headquarters. Besides, the sensors we are talking about can even help in monitoring of environment and could provide data on the amount of undesirable elements present in the atmosphere. This modest, fairly low tech approach of nanotechnology is just a small tip of a vast iceberg-an iceberg that threatens to sink even the unsinkable companies.

To plan for future, we need to conduct high level international conferences. It is a pleasure to note in this connection that NIT Srinagar ([www.nitsri.net](http://www.nitsri.net)) in collaboration with IIT Kharagpur ([www.iitkgp.ac.in](http://www.iitkgp.ac.in)) is organising the 5th edition of International Conference on "**Nanotechnology for Better Living NBL -2019**" from 7-11 April, 2019, in association with many prestigious institutions across globe and within the state to handover this new technology to younger generation. NBL-19 will provide an interdisciplinary platform for experts in academia, industry

and government to discuss new ideas, research results, applications and experience on all aspects of Nanosciences & Nanotechnologies. The invited speakers include distinguished scientists, science advisers to governments and eminent researchers cutting across disciplines.

**Sincerely yours**  
**Dr. Shah M. A.**