

## 'Research yet to unleash nano applications in biosciences'

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Nanobiotechnology is an interdisciplinary field which cannot be ignored at any point in the biotech industrial sector. It has contributed more importance in converting research into applications, especially drug delivery system and drug discovery process.

Surveillance report in the recent past shows that several consumer products with the application of nanotechnology are not yet found majorly in biotechnological products.

More research is require to unleash nano applications in biological sciences, and hence there is less contribution by the Indian industry who have so far lead the biotech market.

Product research in nanobiotechnology is carried by very few Indian lifescience companies which is alarming signal to all their comrades.

Says Mr Baskar Viswanathan, director of research, BioLim Biosolutions, "Queries and demands in the existing biotechnology market have set immense potential to describe the opportunities in nanobiotechnology sector. The key role played by the nano materials in the biotech products are widely followed by western countries. Hence the market achievement is huge and

the opportunities it floods in to the biotech market will inclusively set new trends in our biotech commodities."

Western cultures are more and more branded with the buzz word 'nano' in the consumer products, for instance, microelectronics, cosmetics, pharmaceuticals and food industries.

Our biotech market ratio are predominantly lead by the pharma sector in terms of biosimilars, and its drug delivery process.

"Revolution can be brought into the pharma market if it can overcome several drawbacks in the drug delivery process," comments Mr Viswanathan. "Whereas, drug delivery process was ultimately determining the overall consequence of the administered drug. Huge opportunities are opening up for latest practices in nano-enabled machines and vehicles for drug administration with patient compliance," he further added.

Environmental pollution is still an unraveled area where research demand is put forth hugely for biotech industries, whereby the nano materials it can constructively decrease pollutants. Hence, there is a big market share to be played by the nanobiotechnology products.

"However, lack of public awareness in identifying nano products is another reason for trailing inputs in the nano sector. Few healthcare, especially, cosmetic products are being released in markets with the involvement of nanotechnology, which is gathering less attraction in the crowd," explains Dr Viswanathan.

Mr Viswanathan feels that nanotechnology can work with any object making it better than how it was previously.

"There are several examples which can be mentioned in areas like textiles, electronics, cosmetics, pharmaceuticals and food. Nanotechnology has become, apparently, applicable in all these areas especially, skin lotion creams to protect from UV sun light for longer time, stain free fabrics, anti-infection bandages with higher efficiency, accurate pregnancy test kit, anti-microbial water purifiers, and anti-sensitive tooth pastes for preventing dental sensitivity. Nanotechnology has already influenced few other applications in molecular recognition principle in diagnosis as well as drug development process, but yet to reach the consumer products," elucidates Mr Viswanathan.

Hence in different perspective nanotechnology can be applied to any field where demands for improvisation exists.