

**The British Deputy High Commission
Royal Society of Chemistry
Chemical Sciences and Innovation Symposium**

“CHEMISTRY AND INNOVATION – FROM SPIN-OUT TO MARKET”

Wednesday, 2nd December, 2009 – Mumbai

Alchemy, which many will not consider a science, gradually became the basis for the development of chemistry into the 17th century. However, perceivable impact of chemistry on humanity started being felt only in the second half of the 19th century.

Experts in this field often opine that the current form of human civilization has been made possible, to a great extent, through significant advancement in the science of chemistry and its role in modern technology. Chemistry is indeed an interface between the physical world on the one hand and the humanity on the other.

Nowadays, one finds a striking similarity between the developments of IT software and pharmaceutical chemistry. Both are innovation driven and belong to the knowledge economy. Scientists in both the communities try to generate innovative ideas, which can lead to commercialization of the science.

However, the nature of the commercialization process of these two sciences, seemingly similar in terms of innovativeness is quite different. In the software community, two people can implement an idea with minimal resource requirement and could end up with a profitable commercialized product, without much difficulty. In contrast, two chemists may come up with a brilliant idea, which in many cases, may require significant investment of resources much before to even think to get the initial product commercialized. Subsequent steps for scaling up will be a separate issue, altogether with more resource commitment.

As we all know, the process of commercialization in chemistry is, indeed, a much longer process, as these are not usually spare time projects, unlike computer softwares. The cost involved in testing out and implementing a new idea in chemistry is very high and may not even be possible without any robust institutional backing.

Despite all these challenges, in India commercialization process of Chemistry has already begun. The Chemistry Department of the University of Delhi has developed 11 patentable technologies for improved drug delivery system using nano-particles. One of such technologies was development of ‘smart’ hydrogel nano-particles for encapsulating water-soluble drugs. This technology was sold to Dabur Research Foundation in 1999.

Another nano-particle drug delivery technology, in the area of ophthalmology, was also commercialized by transferring it to Chandigarh based Panacea Biotech Ltd.

This process is expected to gain momentum in our country, contributing significantly to the progress the nation. “Commercializing Chemistry”, I reckon, will play a key role as India transforms itself into a knowledge superpower.