



Section B

Dear Members

I wish all the members and their families a happy, prosperous and healthy **Dasera** and **Diwali**. I hope you are all comfortable with electronic edition of our *ICE*. This time let us have some thing on Industry- Institute interaction.

As the Institute is committed primarily to disseminating technical knowledge, managerial skills, research and development and continuing education for the growth of chemical and its allied industry, we should strive for an harmonious link between the industry and technical educational institutions and play an important role to foster interaction between academia and industry, which will enhance the economic growth of the country and will provide good opportunities to students for employment. What happened in all these years? Let us look back against the backdrop of the specific needs and expectations of the industry and aspirations of the academia.

The areas in which interaction is possible are:

- Industry support to basic research for knowledge creation and continuing education programmes.
- Industry participation in technology developments.
- Academic intervention in solving specific industry problems and laboratory utilization by industry.

Of the above, industry support to basic research and for continuing education has been meagre whereas industry participation in technology development, particularly by large public sector enterprises, has been significant. Industrial problem solving constitutes, by and large, a successful initiative, though not to its full potential, as interaction in this domain is largely contingent upon the presence of a strong industrial base and recognized expertise in the Institute/s of the region. Laboratory utilization by industry for developmental purposes and for material and product testing has seen some success. Continuing education programmes can be considered to be a platform for interaction, with participation from industry, which helps in their tieup.

Industry wants targeted development and time bound programme. Its investment is directed normally towards efforts that promise result-oriented solutions. Large-scale industry has the resources to invest in initiatives for new technology development, but it often tends to rely on bought out technologies, generally from abroad. Academic intervention may be required in minor technological innovations/modifications aimed at technology absorption/implementation. In the case of medium and small-scale industries, the needs are primarily oriented towards their problem solving, with support required in the areas of design, process improvement as well as plant and machinery performance, etc. There may be some appreciation, specifically in the case of medium- scale industry, for parallel exploration of a new product line triggering a focussed developmental activity. It might be carried out in-house or in collaboration with the academia. Small-scale industries dealing with specific products or ancillary units acting as feeders to medium- or large-scale industry do not generally seem to have development-driven needs. In this case, problem solving may simply amount to product testing and production enhancement in terms of quantity and quality. Industry wants its technical personnel to improve theirs skills by sending them to continuing education programmes. Such initiative is beneficial for the industry-academia interaction if it does not hamper their working.

The primary focus of interest for academicians is invariably a problem that throws up an intellectual challenge. Technology development involves understanding as well as exploration of a concept and alternative methodologies, etc., related to process and design improvement. Academic environments value the autonomy of the individual researcher

and there is a strong preference for working towards creation of knowledge in specialized fields/areas. Typically, academic interest in the multi-dimensionality of a problem leads to exploration of a variety of options for arriving at a solution. This exercise consumes both time and effort and the result may often be inimical to what the industry would regard as a wholesome solution.

The gap between the industry's needs and the academic community's aspirations appears to be considerably large. There is a strong feeling, at least in the academic circles, that unless technology-driven initiatives find a surer place in the industrial sector, the academia-industry interaction is likely to remain confined to developmental activities with limited research-based content. With little or no acknowledgement of research-intensive needs on the part of industry and the marginal interest that purely development related activities evoke amongst the academia, the academia-industry interaction does not appear to be resting on very firm grounds. Moreover, there appears to be a critical mismatch in relative perceptions of the two on the issue of how technology development is to be achieved. For academia, technology development amounts to conceptualization and execution coupled with validation at the laboratory level. For industry, the interest lies in translating the laboratory-validated concept into a commercial proposition, where the most important considerations are those of economic viability. The industrial R&D in the country should actually be focussed on this phase of technology development where laboratory models are scaled up and converted into commercially viable products/processes.

With technology-driven entrepreneurship coming up in the country in a big way, the academia is bound to be more amenable to a closer/good interaction with industry. Small and medium sectors, which are also going to be a major force in the sunrise IT industry, could possibly be the catalytic agent in this change. This sector of industry may need technological inputs from the academia in certain identified niche areas. What is needed is a support system to ensure a focussed involvement of both academia and industry. If academic institutes are prepared to offer themselves for this endeavour, then it is imperative that they develop systems and procedures to ensure that industry expectations are met without any compromise on academic aspirations. At this situation, academia with industry would conceive of and take up short-term, small-budget, targeted exploration/development activity which, on the one hand, would instil confidence in the industry, and, on the other, encourage it to embark on long-term research-driven development initiatives.

Compulsions of a global market are bound to force industry in general to look afresh at their R&D efforts. This process must be guided by a complete paradigm shift from a simple capital-intensive trading setup to a technology-driven entrepreneurial one. Industry could set up research consortia/technology with a view to encouraging research-driven technology development either in-house or in collaboration with the academia. Simultaneously, if the academia could tilt the focus of basic research towards application as well, interaction with industry would receive further impetus.

There is a need to create avenues for a close academia and industry interaction through all the phases of technology development, starting from conceptualization down to commercialization. Such linkups may acknowledge and capitalize on the relative strengths of the academia and industry.

Academia and industry should come together shedding their egoisms/differences with flexible attitudes and work together for the development of both the society and the country.

Yours truly,

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