Editorial

The 16th AICEME ended successfully. At the Conference we have discussed two important topics of the day, namely

I) Non-conventional engineering materials, and

II) Prospects of petro-chemicals and coal-based industries in Eastern India.

In the changing trend of technology the topics chosen are very relevant as well as timely. Often we confront with different questions from various corners of the society namely : What is the social relevance of technology ? What is technovation ? What is technology transfer ? Ther are host of other questions as well. The answers of all these questions obviously are beyond the scope of our present discussions ; however, it is true that scientific knowledge is given practical shape by engineers. Engineering innovations become technology only when they get social acceptance. The process, in fact, is not simple always for there are various techniques and ways by which scientific discoveries and engineering innovations get differed and accepted in the society.

In any engineering innovations and applications there are always two aspects that enable these to put into practice. These are : materials and the machineries.

Materials plays the principal if not the foremost role in the practical world. Be it buildings for human habitation or structures for space-ship or impliments of cultivations or micro-chips for computer we require materials, conventional and non-conventional, to manufacture them. When a material could be easily available, durable, strong and at the same time cheap it would get a place in engineering applications. But unless it is readily acceptable to different engineers and technologists it cannot be considered as a true engineering material. In the country we spend over Rs. 1300 crores annually on research and development. Out of these only a insignificant amount is spent on material development. This is not at all healthy for sustained growth and development. Change of attitude and priority in planning are obviously the need of the moment.

The PVC and other synthetic and non-conventional materials including composites developed during the last few decades have changed the scenario of engineering and technology. Countries like ours unfortunately could not catch up the modern trend of engineering and technology in many areas for various reasons ; however, dearth of appropriate mterials is perhaps the most important factor among these. Coming back to the

scenario of the engineering industries of the country we find that the Eastern Region, which was even 20/25 years from now was a prime industrial area of the country, has been lagging far behind the other regions for quite some time. Again it is well-known that most of the end products of petro-chemical industries are raw-materials for various secondary industries—small, medium and even large ones. Coal is abundunt in this part. For this in the changing context of technology coal-based petro-chemical industries in this region would be more desirable than petroleum based petrochemicals. Many believe that coal-based petro-chemical industries would be able to inject the vital force needed very much to boost the ecnnomy of the region. In Assam we should go for gas-based petrochemical industries for there are gas fields there. It is unfortunate but true that we are burning a colossal amount of gas coming out of the experimental holes drilled by the ONGC in Sibsagar, Naharkatia and other regions there. We are yet not sure whether we should call such a practice a crime when there is fuel crisis in Assam and for that matter everywhere in the country !

During the 16th AICEME we have discussed both the development aspects and usage aspects of some non-conventional engineering materials and indegenous use of these materials in various ways. For instance, construction materials for buildings are not only costly but also are quite heavy. For that reason the structures of building would be more costly particularly for multi-storeyed buildings and other tall structures. Some new materials have been developed at the Civil Engineering Department, Jadavpur University which could be used for partition walls. We are aware that it would take long time before people will accept some of these materials for their uses which are not only light and durable but cheap. More works are also needed for the improvements of these materials before the materials could be commer cially exploited. We also want to draw the attention of the concerned authorities to this.

We have also discussed during the conference two important problems confronting the society, namely energy crisis and water crisis (the paper on energy is included in this issue and the paper about water problems was published in the previous issue of the Journal of the Association).

The various papers read and discussed at the 16th AICEME are printed in this volume. The proceeding of the 16th AICEME published in this volume will speak for themselves about the potential gain we achieved by this Conference.

Lastly, we put in record our sincere thanks and gratitude to the DST, Government of India for granting Rs. 12,000 to publish the proceedings of the 16th AICEME. We also thank the delegates, authors, participants and advertisers in this issue of the Journal for helping us in different ways in organising the 16th AICEME successfully.