

INTERNATIONAL SYMPOSIUM ON FIBRES AND COMPOSITES

An International Symposium on Fibres and Composites, jointly sponsored by the National Physical Laboratory (NPL), and Department of Science & Technology, was held at the NPL on 19-20 January 1976. Besides scientists from various R & D laboratories, and representatives of the industry and the user organisations from within the country, a number of distinguished scientists from abroad also participated in this Symposium. The Symposium, the first one of its kind to be held in India, was inaugurated by Dr. A. Ramachandran, Secretary to the Government of India, Department of Science & Technology.

Dr. A.R. Verma, Director, NPL, gave the welcome address, wherein he said that the main driving force behind this Symposium and the prime focus of its immediate attention, was the UNDP sponsored project on fibres and composites in which six Indian institutions were participating. These include (i) National Physical Laboratory, New Delhi, (ii) National Aeronautical Laboratory, Bangalore, (iii) Central Leather Research Institute, Madras, (iv) Central Glass & Ceramic Research Institute, Calcutta, (v) Indian Institute of Technology, Kanpur and (vi) Vikram Sarabhai Space Centre, Trivandrum. The work at these six institutions was being coordinated and financially supported by the Department of Science & Technology who were providing the Indian counterpart contribution for this project.

In his introductory remarks on the UNDP project on fibres and composites, Dr. V.G. Bhide, Project-Coordinator of the project from the side of India, said, 'We have amongst us almost all the research workers working in this field in various laboratories in India. We have also amongst us, representatives of industries who are manufacturing a variety of products out of glass fibre composites. It is also fortunate that present amongst us are some of the representatives of users of fibre composites and their products. It is, therefore, a happy augury that we have in this gathering experts, research workers, manufacturers, users, and the Government representatives. With this participation, I am sure that the future of composite industry in India is extremely bright.' He said that taking the clue from the glass fibres, efforts were directed to see whether polymer fibres could be made flawless so as to yield high strength and

high modulus fibres, thereby bringing carbon fibres on the scene. However, it was obvious that these fibres, as they are, cannot be used as engineering materials, thus, necessitating formation of composites. This, he said, was an emerging technology even in advanced countries, but one could well imagine the impact of this technology in various industries. With the unique properties that the composites possess, they could find ever-increasing applications in several sectors of the national economy which include agriculture, fisheries, chemicals, engineering industry and aerospace industry etc. The aim of this project had, therefore, been to develop competence and to establish production of glass and carbon fibres, to make composites, and to design and fabricate composite products of utility in all these areas. He said that the project was not only inter-institutional but also interdisciplinary in character, with specific tasks assigned to each participating institution in a manner so as to take maximum advantage of my point of and competence, and added, 'What is most important from their strength view and from the point of view of the success of the project is the fact that every worker in this project is excited about it and dedicated to it. We are conscious that this novel experiment of harnessing the strong points in various laboratories to achieve a desired goal is being watched with interest by every one in the country.'

The remarks from Dr. V.G. Bhide were followed by remarks from Mr. G. Lubin, UNDP Project Co-ordinator. The inaugural function ended with a vote of thanks from Dr. G.C. Jain, Head, Division of Materials, NPL.

There were four technical sessions. Dr. R. Bacon, Parma Technical Centre, Union Carbide Corporation, USA, gave the keynote address for the first session on 'Raw Materials: Resin/Matrix', which was followed by eight other technical papers. The keynote address for the second session on 'Product and Product Processing', was delivered by Dr. S. Dastin, Grumman Aerospace Corporation, USA. This session had six presented papers. The third session was devoted to 'Analysis and Design' with the keynote address by Dr. C. Chamis, Lewis Research Centre, Cleveland, Ohio, USA, followed by nine papers. The last technical session was devoted to 'Testing and Quality Control', with the keynote address by Dr. Peter J. Donohue, Materials and Process Department, Grumman Aerospace Corporation, followed by eight other technical papers. All the four keynote addresses presented the global scene in the respective areas of the four technical sessions. Out of the other thirty-one papers covered under the four technical sessions, 3 were from abroad, and 28 were from within the country. The deliberations at the Symposium were also supplemented by technical film shows.

The Symposium was followed by a three-day workshop wherein the

technical problems faced by the various R & D laboratories were discussed in detail. An exhibition displaying various reinforced plastics products was also arranged at this occasion.

The proceedings of the Symposium were brought out in a mimeographed form, and they run into two volumes.