

Proceedings of the workshop on 'Hydrogen in Materials', New Delhi, 1994

FOREWORD

Hydrogen is a unique element in the periodic table. It is the lightest of elements and easily diffuses into materials. Its presence, therefore, in different materials causes interesting effects. Hydrogen is desirable for its advantageous effects in materials such as amorphous silicon, silicon nitride, diamond like carbon (DLC) film, etc. On the other hand, its presence is a great nuisance in metallic systems. In general, the presence of hydrogen affects the mechanical, electrical, chemical and spectroscopic properties of materials. The other interest in hydrogen is in the development of hydrogen storage materials. All these require a precise measurement of hydrogen in the materials. High energy heavy ions from NSC Pelletron provide a unique way of hydrogen depth profiling. A workshop was organized on 30 August 1994 at the Nuclear Science Centre (NSC), New Delhi to discuss in depth the various aspects of hydrogen in materials and possible applications of high energy ion beams in this area. Thirtyfive researchers from various research institutes and universities participated. There were seven invited talks and nine contributed presentations. The workshop began with opening remarks by Prof. G K Mehta, Director, NSC, on the facilities available to the research institutions, the existing opportunities and possibilities with high energy heavy ions in the engineering of materials. In the concluding remarks Prof. S C Agarwal, Indian Institute of Technology, Kanpur, highlighted the advantages of ion beam techniques in comparison with SIMS for hydrogen profiling.

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