

Proceedings of the Winter School on Laser Material Processing

Foreword

Due to their remarkable characteristics, lasers are finding wide applications in all areas of science and technology. Realizing the need to promote work in India in this important area, the Indian Physics Association and the Department of Science and Technology are organising a series of workshops/schools on specialized topics in this area. The first school in this series was on 'Laser Material Processing' held at the Department of Physics and the Centre for Advanced Study in Materials Science of the University of Poona from 16 to 21 November 1987. This special issue of the Bulletin of Materials Science is essentially the proceedings of this school. The school was organized by Prof. S B Ogale who is also editing this special issue.

During the school, laser material processing was reviewed by scientists active in this area. The talks could be broadly divided into four groups. Lasers for material processing were reviewed in two talks, one on gas lasers and the other on solid state lasers. Using lasers for conventional processes such as welding, cutting, heat treatment etc. were reviewed in three talks. When these processes are applied to semiconductors, considerations are different. One has to understand and worry about physical processes taking place at microlevels. Laser applications to semiconductors were reviewed in three talks. Lasers are not just to replace conventional sources of heat in material processing. Newer techniques such as laser-induced chemical vapour deposition, laser-induced etching etc. were reviewed by four speakers.

Although not exhaustive, the contents of this school give an excellent overview of this important field. It is hoped that this volume would be useful to experts and novices alike. The purpose of the school and this special issue was to provide researchers already in the field or thinking of entering it as well as industrial users an overview of the potentials of lasers in material processing. This has been achieved to a large extent by the work put in by the authors and by Prof. Ogale and his colleagues who have edited the manuscript to make this issue more coherent.

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