

## Preface

Atomic & molecular physics and lasers have benefited each other, for a very long time. Lasers were invented only due to the theoretical work by Einstein, Rabi and others towards understanding atom–light interactions, and in turn, lasers provided a very useful tool for producing and probing atomic species with higher efficiency and better precision and hence for understanding structures and functions of atoms and molecules. This knowledge in turn helped in the invention of better lasers. Thus, they are interlinked to each other.

In recent times, the atomic/molecular physics has been benefited even more by the application of laser-based tools. Laser-induced breakdown spectroscopy, laser-produced plasma, precision spectroscopy of atoms, optical cooling of atoms, creation of exotic atomic species such as BEC etc. are a few of the applications wherein lasers are used in atomic physics. Hence a conference was organized under the auspice of ISAMP, on 'Interaction of Lasers with Atoms, Molecules and Clusters' at University of Hyderabad in January 2012. The conference was jointly organized by School of Physics, ACRHEM of University of Hyderabad as well as TCIS Hyderabad, under the umbrella organization of the ISAMP.

ISAMP is the acronym for Indian Society of Atomic and Molecular Physics – a gathering of scientists involved in research on various areas of atomic and molecular physics. Started in 1975 in Ahmedabad, it has grown in size and scope, encompassing diverse ranges of scientific interests. Under its auspice, a national conference on Atomic and Molecular Physics is organized once in two years, and a smaller thematic conference, focussed on a specific topic, in the intervening years. The conference on 'Interaction of Lasers with Atoms, Molecules and Clusters' is one such. A few of the selected papers presented in this conference are brought forward in this issue.

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