

In this issue

Lasers and chemical dynamics

Lasers have made a powerful impact on chemistry in the last few years. The area of chemical dynamics has seen an upsurge of activity with increasingly sophisticated application of lasers to probe molecular processes. The Special Section in this issue of *Current Science* focuses on the area of lasers and chemical dynamics and provides an overview of some aspects of Indian research in this field. Photodissociation processes are discussed in articles by Kalyanaraman and Sathyamurthy (page 319) and Uma and Das (page 307). While the former considers strategies for controlling the outcome of molecular collisions, the latter reviews studies on the dynamics of dissociation of alkyl iodides. Mathur (page 312) examines the application of translational energy spectrometry (TES) in delineating molecular potential energy surfaces and describes the spectrometer developed at the Tata Institute of Fundamental Research, Bombay. Spectroscopy is the subject of the contributions by Chakraborty and

Chowdhury (page 323) and Anandhi *et al.* (page 332). The former provide an overview of the use of supersonic jet laser-induced fluorescence to probe multi-minima potential energy surfaces, which are of particular importance in chemistry. The latter discuss potential uses of ultrafast laser spectroscopy in chemistry and biology. Dynamic events in the sub-nanosecond regime are amenable to study by these techniques.

Utilizing water resources

Water is the most distinctive constituent of the earth. It is water that set the stage for evolution of life. Water is the essential ingredient of life today. Therefore it is perhaps the most precious resource the earth provides for humankind. Fortunately the total quantity of freshwater on the earth far exceeds all the conceivable needs of the human population. Much of the water is inaccessible or unavailable. The remainder is unevenly distributed both from place to place and season to season.

With all this one would suppose that human beings would

be respectful of this precious commodity—that they would seek to safeguard its purity, maintain its natural sources. Yet people all over the world have been remarkably shortsighted and negligent. This is particularly true in this country. 'Water does fall from the heavens', but it is not free. In most parts of the world, an adequate and reliable supply of water can be had only by the active management of water resources. In order to meet the large demands of agriculture and industry, and the comparatively small but imperative demand of domestic consumption, water must be collected, stored, allocated and distributed. Human intervention in the natural water cycle always entails cost which sometimes is high, which many of the poorer countries cannot afford. Indeed, the future of our country will be compromised unless there is a significant improvement in the management of our water resources. Our doyen geologist admonishes (page 294) the wasteful methods we use and pleads for a sane and scientific approach to this problem.