

## Editorial

---

In the first fortnight of October every year, the scientific community eagerly awaits the announcement of Nobel Awards, the symbol of highest recognition, a scientist aspires to receive for her/his work in basic sciences. Instituted in 1901 as per the will of Alfred Nobel, the Nobel Awards are conferred on those who have done their best to serve mankind in the field of Physics, Chemistry, Medicine, Literature and Peace. "Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel" has been added since 1969 though technically it is not a Nobel award but its announcements and presentations are made along with it. The Nobel awards for Physics and Chemistry are announced by the Swedish Academy of Science. The Nobel Prize in Physics for the year 2009 has been shared by three scientists – Charles K. Kao, Willard S. Boyle, and George E. Smith. Charles K. Kao receives the award for his "groundbreaking achievements concerning the transmission of light in fibres for optical communication" while Makoto Kobayashi and Toshihide Maskawa were nominated for the "invention of an imaging semiconductor circuit – the CCD sensor". Nobel Prize in Chemistry has been awarded by the Swedish Academy of Science to Venkatraman Ramakrishnan, Thomas A. Steitz, and Ada E. Yonath for enlightening the science community on the 'structure and function of the ribosome'. Nobel Prize for Physiology and Medicine is to be shared by three scientists – Elizabeth H. Blackburn, Carol W. Greider, and Jack W. Szostak for their discovery "how chromosomes

are protected by telomeres and the telomerase enzyme". The lead article of this issue attempts to highlight the work of these Nobel laureates and its significance for future developments. This year's announcement for the Nobel Prize in chemistry had special significance for Indians as also our education system, as one of the awardees, Venkatraman Ramakrishnan, happens to be an Indian American. Venkatraman Ramakrishnan is the third Indian American, after Hargobind Khorana and S. Chandrasekhar, who has been bestowed with this honour. Venkatraman Ramakrishnan has been a brilliant student right from his school days. In fact, as a student of the then higher secondary stage (Class XII) in 1968, he was selected for award of scholarship under National Science Talent Search Scheme (NSTS) instituted by the NCERT in 1963 for nurturance of talent in science.

It has been our endeavour to keep our patrons abreast with recent developments in basic sciences and upcoming technologies through articles, features and science news. In the last few years, an attempt has been made through the articles and science news through the pages of this journal to highlight important developments in the field of nanotechnology. An article presenting a design of a curriculum to introduce nanotechnology as a subject of study at the higher secondary stage has been included in this issue. It is envisaged that educationists, especially curriculum developers, would ponder over the

implications in the event such a futuristic technology is accepted at school stage. Holography is another technology, which in recent past have become quite common, particularly as a potent tool to protect copy right infringements. To have a three dimensional view of a picture with a holograph is always a fascinating experience. Students often wonder how holographs are produced and what the scientific principle behind it is. It is envisaged that the article on this subject would facilitate understanding the basic principles of holography.

Studies on various aspects of science education besides providing us ideas for improving quality of teaching science in schools, also give us an in-depth understanding about issues and problems that need be addressed. In recent times 'episodic conceptualisation' has been identified as one of the origins of pupils' alternative conceptions. It is hypothesised that the episodic format of the form, content, and mode of presentation of two interrelated concepts, say

kinetic energy and work, is likely to generate two isolated, mutually independent cognitive structures amongst learners often emanating from the manner these are presented in the textbook and by the teachers in the classroom. The research design, methodology and outcome of a study on episodic conceptualisation and its implications form the basis of another article in this issue. Children's concepts on some aspects of environment, application of computers in teaching learning of science, theory of metacognition and its role in learning and teaching are some other issues on which articles find a place in this number, in addition to regular features like the 'Science News', 'WebWatch' and 'You've Asked'.

We sincerely hope that our readers would find the articles, features and news items interesting and educative. Your valuable suggestions, observations and comments are always a source of inspiration and guide us to bring further improvement in the quality of the journal.