

physical and physicochemical properties of new and novel solid-state materials. Specific achievements are in the areas of electronic ceramics, use of powder metallurgical techniques for their fabrication, ternary low- T_c and high- T_c ceramic oxide superconductors, ionically conducting solids, ternary alloys and materials for chemically trapping solar energy. Emphasis has also been in the search for crystal structure-physical property correlations in ordered inorganic solids and alloy systems.

Subrahmanyam, N. C., School of Life Sciences, University of Hyderabad, Hyderabad

He is responsible for the discovery of selective chromosomal elimination leading to haploid formation following inter-specific hybridization in barley.

Venkatesh, Y. V., Department of Electrical Engineering, Indian Institute of Science, Bangalore



His research work has ranged from topics in system theory to computer vision. His stability and instability results for non-linear time varying feedback sys-

tems are the most general known to date. In the course of his work, he has come out with new differential and function-space inequalities which form the basis for his results. His recent work is on remote sensing data processing, object recognition for robotic vision, stereo-image analysis, quad- and oct-trees as data structures for image analysis, reconstruction of signals from zero-crossing information, wavelets and neural networks for vision.

INSA medal for young scientists, 1991

Ajayaghosh, A., Regional Research Laboratory, Trivandrum

He has made a mark in the application of known chemical reactions to the preparation of polymer-supported reagents. This has led to the synthesis of oligopeptides (up to decapeptide) using polymeric supports which are removable by photolysis.

Amarendra, G., Materials Science Division, Indira Gandhi Centre for Atomic Research, Kalpakkam

He has done experimental studies of neutron- and alpha-irradiated metals and alloys by positron annihilation spectroscopy technique, leading to a better understanding of underlying mechanisms pertaining to behaviour of helium in metals responsible for degrading effects on the mechanical properties of materials.

Bagchi, Suvendra Nath, Department of Biological Sciences, Rani Durgavati University, Jabalpur

He has made intensive studies on the pathway of nitrate reduction in the bloom-forming cyanobacterium *Phormidium uncinatum* and provided evidence that an allelochemical substance inhibitory of *Microcystis* blooms is produced by *Oscillatoria* sp.

Bhaskarwar, Ashok N., Department of Chemical Engineering, Indian Institute of Technology, New Delhi

He has elucidated the understanding of foam-bed reactors by theoretical modelling, computer simulations and experiments leading to the conception of a new photochemical film reactor configuration.

Chakrabarti, Partha Pratim, Department of Computer Science and Engineering, Indian Institute of Technology, Kharagpur

He has developed multi-dimensional heuristic search techniques in artificial intelligence for solving a wide variety of difficult optimization problems.

Das, Bibhu Ranjan, Molecular Biology and Genetic Engineering Unit, Institute of Life Sciences, Bhubaneswar

He has carried out studies on changes in the structure and function of chromatin of neuron during postnatal early development. He has shown unique and versatile role of poly ADP-ribosylation in chromatin structure and function using cDNA probe for poly-ADP-ribose synthetase for the expression of synthetase gene.

Kumar, Vinay, Solid State Physics Division, Bhabha Atomic Research Centre, Bombay

He has contributed to the elucidation of the structure and function of carbonic anhydrase isoenzymes and for the solution of the first globular three-dimensional protein structure in India by X-ray diffraction methods.

Mazumdar, Shyamalava, Chemical Physics Group, Tata Institute of Fundamental Research, Bombay

He has made outstanding contributions to the area of bio-inorganic chemistry, particularly, to the studies on heme in micellar solution as model of heme proteins, and to the structural aspect of the micelles encapsulating heme. He has devised a method, using NMR, to determine the micellar structural features.

Mohanty, Ajit Kumar, Nuclear Physics Division, Bhabha Atomic Research Centre, Bombay

He has done theoretical work on the development of a new energy dependent potential for heavy ion reactions to explain the enhancement of fusion excitation functions and broadening of compound nucleus spin distributions. He has contributed to the work of

heavy ion-induced fragment angular distributions with the pelletron accelerator, leading to experimental confirmation of pre-equilibrium fission phenomenon.

Murthy, C. Siva Ram, Department of Computer Science and Engineering, Indian Institute of Technology, Madras. He has developed many innovative algorithms for the assignment of tasks in parallel computers to ensure their optimal performance.

Padma, S., School of Chemistry University of Hyderabad, Hyderabad

She has made outstanding contributions to the synthesis of extremely interesting molecules such as 6-prismane and garudane. She possesses deep insight into the mechanism of the chemical transformations involved in the synthesis.

Rajaram, Nirmala, Immunology Division, Cancer Research Institute, Tata Memorial Centre, Bombay. She has worked on the cytotoxic mechanism in oral cancer in three different lymphoid compartments.

Sengupta, Pulak, Department of Geological Sciences, Jadavpur University, Calcutta

He introduced for the first time in the Eastern Ghats granulites of India a P-T-t route, involving three phases of metamorphic-tectonic evolution on the basis of geothermo-barometric work and correlating it with textural evidence.

Uma, Kuchibhotla, Molecular Biophysics Unit, Indian Institute of Science, Bangalore

She has contributed to the area of *de novo* design of protein mimics and developed approaches to the construction of stereochemically rigid peptide helices. Her research has covered the area of peptide design and characterization.

PERSONAL NEWS

Nucleus of chemical activity

An obituary of Jagdish Shankar

Jagdish Shankar, a distinguished fellow of the Indian Academy of Sciences and a former head of the chemistry division at the Bhabha Atomic Research Centre, Trombay, expired on 31 January 1992 at the age of 80 years at Bombay. Till the day before his demise Shankar was actively associated with research and development in chemistry and was even attending a symposium on radiation and photochemistry at the centre.

After obtaining the master's degree, his work on determining molecular orientation from X-ray diffraction studies and magnetic anisotropic data won him the PhD degree from Bombay University in 1939. Commencing with the Institute of Science, Bombay, Shankar taught in different institutions for about a decade. During his tenure at Delhi University he proceeded to the US and took an M S in chemical engineering at Columbia University in 1947.

At the invitation of H J Bhabha, who was chairman of the Atomic Energy Commission, Shankar joined the then Atomic Energy Establishment, Trombay (now Bhabha Atomic Research Centre) in 1949 as chief chemist with the

mandate of formulating and executing the chemistry programmes in the nascent nuclear technology. Although his laboratories were located in temporary



sheds, soon the address of 414-A Cadell Road became synonymous with chemistry activities of India's atomic energy programmes for years.

Under the leadership of Shankar well-equipped laboratories for analytical chemistry, spectroscopy and advanced research in the emerging field of recoil chemistry were established. Besides, he initiated and encouraged research in solid state chemistry, X-ray and electron diffraction, thermal analysis and radiation chemistry. As the programmes initiated by him expanded and flourished, divisions of analytical chemistry, spectroscopy, applied chemistry and chemical engineering were established out of the chemistry division. His chemical engineering background came in handy in establishing solvent extraction, ion exchange, distillation and zone refining units for preparing high-purity materials required in the exacting nuclear and electronics industries. Based on the developmental work carried out in the division, a high-purity-materials plant was set up as part of the Nuclear Fuel Complex at Hyderabad to manufacture B, Nb, Ta, Se, Au, etc.

The knowledge accrued over the years of work on the radiolysis of aqueous media during his tenure and afterwards became very useful in ex-