nous changes in properties occur as a function of pressure. Luckily, pressure-induced transformations are ubiquitous. A number of talks as well as poster presentations were concerned with phase-transformation studies. The transition that figured prominently was the crystalline to amorphous. First reported in silicon dioxide (SiO_2), this type of transition has been seen in a variety of systems in recent years. The Indian contribution in this area has been notable. S. K. Sikka's (BARC) talk on pressure-induced glasses highlighted this phenomenon, and presentations from the Indira Gandhi Centre for Atomic Research, Kalpakkam, and the Indian Institute of Science (IISc), Bangalore, reinforced the theme of pressure-induced amorphization.

The Raman Research Institute (RRI) group in Bangalore has made significant contributions to liquid crystals under pressure and was the first to discover interesting phase-diagram features and multicritical points. A full session devoted to the subject brought out several noteworthy aspects connected with this state of aggregation. The highlight was a lucid lecture by Shashidhar of the Naval Research Laboratory, Washington, DC, formerly a member of the RRI group.

The concluding scientific session was on buckminsterfullerene, the novel C_{60} molecular solid. G. Baskaran of The Institute of Mathematical Sciences, Madras, gave a general introduction to the physics so far accumulated on the material. Ruoff reported pressure studies on the elastic properties and bulk modulus. A. K. Sood (IISc) and Aoki discussed the pressure dependence of the electronic energy gap in C_{60} and its implications for superconductivity and optical properties.

The materials-technology aspect of high-pressure research is usually dominated by Soviet contributions (as I have noted in earlier AIRAPT meetings). Since the Soviet presence at this conference was insignificant, there were only a few presentations on the subject. However, the talk by Vagarali of General Electric, the pioneer in diamond technology, was a very significant one, as it dealt with the growth of isotopically pure diamond, a material of great scientific and technological interest.

The poster papers were largely contributions from high-pressure researchers in India. A substantial part were theoretical contributions from the Anna University and Bhopal groups, on band structure, pressure-induced superconductivity, and theoretical calculations of phase transitions in compound semiconductors. In experimental contributions, kinetic studies on pressure-induced phase transitions and thermoelectric power measurements in high-pressure research are a forte of the NAL group; the presentations on these topics were notable. It is pleasing to see that high-pressure Raman spectroscopy is taking root in India; this was reflected in contributions from several institutions. Hopefully the conference has enthused the high-pressure community in this country to take up research in frontline topics and make outstanding contributions to modern high-pressure research.

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Push for non-accelerator particle physics

A small group of scientists from universities and other academic and research institutions met, 18 to 20 November, at the Indian Institute of Science (IISc) in Bangalore to discuss topics that fall in the area designated as non-accelerator particle physics (NAPP). In July the Department of Science and Technology's (DST) Programme Advisory Committee on plasma, high-energy and nuclear physics had reviewed the status of NAPP in India, and adopted a resolution urging DST to ensure continued accessibility to the low-background-radiation deep-mine research facility at Kolar Gold Fields (see *Current Science*, 1991, **61**, 308). The KGF facility, of Bombay's Tata Institute of Fundamental Research, is well known for work on cosmic-ray neutrinos and the search for proton decay, one of the testable consequences of Grand Unified Theories (GUT).

Study of the fundamental aspects of the physics of elementary particles and fields without recourse to gigantic man-made high-energy particle accelerators such as the superconducting super collider or the large hadron collider has its own fascination and advantages. For one, in view of the smallness of the scale of experiments, the scientist is able to participate in all its aspects—from the theoretical motivations that initiate the study to the design of the instruments and the methodology and finally the analysis of the results. Again, the low-energy consequences of the Grand Unification of all the forces at high energy might indeed provide the most accessible and clearest signatures of the physics that lies beyond the so-called Standard Model. India has a great tradition in NAPP, and the work has involved cosmic-ray* and other astrophysical observations as probes of the properties of elementary particles; a variety of 'table-top' experiments have also been performed to probe fundamental aspects of physical laws.

*See 'Special section', this issue.

Among the topics discussed in the IISc meeting were: 1. discrete symmetries and their experimental tests, such as the electric dipole moments of electrons and neutrons; 2. nuclear-physics experiments that probe discrete symmetries and the mass of the neutrino; 3. study of the fundamental aspects of quantum mechanics and its nonlinearities with experiments like optical multiphoton interferometry; 4. the quark content of the photon and the interactions of TeV gamma rays; 5. search for new intermediate-range forces; 6. gravitation experiments; 7. experimental searches for dark matter; 8. study of new physics through ultra-high-energy gamma-ray and neutrino astronomies; 9. study of solar neutrinos; 10. phenomenological, theoretical, astrophysical and cosmological studies relevant to NAPP. One of the objectives of the meeting, coordinated by N. Mukunda of IISc's Centre for Theoretical Studies, was to assess India's capabilities to evolve strategies for new initiatives.

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