

Banaskantha District Kelavani Mandal, Palanpur
Managed
RR Mehta College of Science & CL Parikh College of Commerce, Palanpur
National Conference

on
“Role of Basic Sciences in Emerging Technologies”
(6th January, 2023)

REPORT

INTRODUCTION:

On 6th January, 2023 the Banaskantha District Kelavani Mandal, Palanpur sponsored national conference on **“Role of Basic Sciences in Emerging Technologies”**. It was jointly organized by the Department of Physics and IQAC, RR Mehta College of Science & CL Parikh College of Commerce, Palanpur. The main focus was on various fields of basic sciences which offered wide information to the participants. One year ago, at the time of submission of proposal to the BKDK Mandal, the organizing committee of the national conference took into consideration the resolution of United Nations General Assembly declaring the year 2022 as the ‘International Year of Basic Sciences for Sustainable Development’. The International Science Council recognizes the effort, intent and objective of the UN General Assembly to keep basic sciences as the necessity for overall sustainable development. Broadly, it includes the disciplines of Physics, Mathematics, Chemistry and Biology as they provide the fundamental understanding of natural phenomena and the processes by which natural resources are transformed through modern technology. The scientific research continuously generates knowledge that shapes an all-inclusive developed society through the emerging technologies. The national conference became a unique opportunity to convince researchers, scientists, academicians, students and common people that when the basic sciences are applied, it gives effective, efficient and sustainable

results to the society and the planet earth, particularly in diagnosing critical health issues, the food quality and environment challenges. It is realized that the emerging technology is heavily dependent on most of the fundamental scientific knowledge what we call basic scientific research.

In the conference total **258** academicians and scientists from various universities and national laboratories from across the nation participated and had contributed about **164** research papers. In detail, there were **43** oral presentations, **121** poster presentations and **94** participations were registered.

INAUGURAL FUNCTION

The inaugural function was initiated by prayer and lighting the lamps by guests.

The guests were felicitated by bouquets and welcomed verbally by Dr. YB Dabgar, Principal, RR Mehta College of Science & CL Parikh College of Commerce, Palanpur.

The details about the conference were given by Dr. RJ Pathak, Organizing Secretary and Head, Physics Department.

The inaugural function of national conference was presided over by honorable Mr. Vipul Modi, Managing Trustee, Banaskantha District Kelavani Mandal, Palanpur.

The chief guest, Honorable Prof. JJ Vora, Vice Chancellor, Hemchandracharya North Gujarat University, Patan, could not make it possible to present himself due to some unavoidable reasons.

The Keynote speaker and our esteemed guest Mr. Maulik Bhavsar, who is the Head of Atomic Clock Development Division, Space Application Centre, ISRO, Ahmedabad delivered his speech on “**Application of advanced technologies for Communication and Navigation satellites**”. He focused on the design of space-borne instruments for ISRO missions and development and operationalization of applications of space technology for societal benefits. He imparted that the

applications covered communication, broadcasting, navigation, meteorology, environment monitoring and natural resources survey and education in size, weight and power (swap) along with indigenization of technology has always remained prime objective for the of communication and navigation payload designs. He said that some of the technologies and indigenization of Atomic clock has contributed significantly in achieving the goal. Application of these technologies along with basic understanding of communication and navigation satellite was discussed.

The Presidential address was delivered by Hon'ble Mr. Vipul Modi, Managing Trustee, Banaskantha District Kelavani Mandal, Palanpur. He expressed his happiness and said that the academic activities and making academic interactions is reality of this campus and that research, interpretative techniques are continuous process and rapid development of basic sciences has paved way for development of new technologies. In his concluding remarks, he said that today's science is tomorrow's technology. He congratulated organizers and participants of the National conference.

The vote of thanks in inaugural function was proposed by Dr. Deepti Tiwari.

Technical Sessions-I

The first invited talk was delivered by Dr. Mahendrakumar Khandpekar, Professor, Materials Research Lab, Department of Physics, B. K. Birla College of Arts, Science and Commerce (Autonomous), Kalyan, Maharashtra. The talk broadly focused on “**Synthesis and Surface Modification of Lanthanum Fluoride Nanoparticles for Optical & Biological Applications**”.

He discussed wide applications in optical device, telecommunication, electroluminescent device and bio –analytical sensors and bio-medical imaging. Nano materials were prepared by rapid route using single pot synthesis using

microwave drying. In his talk it was noted that coating CeF_3 with organic ligand, the distance between the luminescent lanthanide ions increases whereas that between surface quenchers decreases thereby reducing the non-radiative pathways. The luminescent intensity and lifetime of the ligand coated Nano-plates would be thus enhanced. Recent interest in Cerium fluoride is as a highly radiation-resistive, high density and fast response host material in scintillation detectors. He focused on the development of a variety of water soluble lanthanum fluoride nanoparticles modified with amino acids like glycine, cystine, alanine, leucine, arginine and histidine. The synthesis and detailed characterization of these amino acid modified Lanthanum Fluoride nanoparticles were presented. The session was anchored by Dr. KV Mehta and the introduction of the speaker and vote of thanks was presented by Dr. Deepti Tiwari.

The Second invited talk was delivered by Dr. Utpal S. Joshi, Professor, School of Science, Gujarat University, Ahmedabad. He focused on “**The world of Nano Materials: From Basic Sciences to Applications**”. According to him, present generation has witnessed very rapid growth of advanced materials for cutting edge technologies such as sensors, new semiconductor chips, memory materials, biocompatible advanced diagnostic materials, photo catalysts, solar cells and thermoelectric as well as the high temperature superconductivity. The role of Nano-materials with exciting functionalities covers almost all branches of science and technology. Opportunities and challenges in this exciting field of Nano-science and technology were highlighted. The session was anchored by Dr. Dhruv Pandya and the introduction of the speaker and vote of thanks was presented by Prof. PV Modh.

Technical Sessions-II

The competitions of Oral presentation under different subjects and categories were organized in the respective departments. The competitions for Poster presentations were arranged on second floor of the science laboratories.

Total 31 competitions were conducted in different categories in different subjects. Total 36 jury members from different institutes of Gujarat and out of Gujarat rendered their services in all the competitions.

Technical Sessions-III

In third technical session Mr. Vishal Muliya, Science Communicator, Scientoon Maker & Science Poet, Jamnagar, delivered his own written and compiled science poems, scientoons on amazing facts and science comedy. He gave many examples and tried his best to make science terminology easier and interesting for the students. He also gave messages for the eradication of superstitions through effective power point presentation. The session was very interesting and enjoyable for all the participants who were present in the evening session after the hectic schedule of the national conference.

The session was anchored by Dr. Dhruv Pandya and the introduction of the speaker and vote of thanks was presented by Dr. Jyotindra Mahyavanshi.

VALEDICTORY FUNCTION

The valedictory function was presided over by Dr. K.D. Samal, Assistant Director, BKDK Mandal, Palanpur and Dr. MV Hathi chaired the function as a chief guest. Principal Dr. YB Dabar and two Jury members Dr. VD Patel, Head, Physics Dept.

Science College Mehasana and Dr. Govind Varde, Professor, Govt., Science College, Tharad, Dr. KV Mehta, Organising Secretary shared the dais.

Two jury members gave their critical comments and suggestion to the participants for their best presentations. Feedbacks from the participants were invited and were delivered by them.

Dr. KD Samal and Dr. MV Hathi expressed their feelings on the occasion and gave suggestions and blessed and congratulated the organizers and participants.

The results of 51 competitions were declared and the winners were felicitated with certificates by the guests on dais and off the dais. The function was anchored by Prof. Vijay Parmar and vote of thanks was presented by Dr. KV Mehta.

The conference was declared as over and all departed after singing the national anthem.

Shades of the Conference



















