

# **INTERNATIONAL CONFERENCE ON RECENT TRENDS IN THEORETICAL AND APPLIED PHYSICS (ICRTTAP)**

**ORGANIZED BY**

**RESEARCH AND POST GRADUATE DEPARTMENT OF PHYSICS**

**SREE NARAYANA COLLEGE, KOLLAM**

**IN ASSOCIATION WITH**

**KERALA STATE HIGHER EDUCATION COUNCIL, THIRUVANANTHAPURAM**

**DECEMBER 14<sup>th</sup>- 16<sup>th</sup> 2020.**

## **Conference Report**

Science and technology emerge when imagination of human minds reach its destination, reality. All of the today's technologies were dreams that kept our great scientists awake as said by Dr. A.P.J. Abdul Kalam. When many of such great brains worked together, it resulted in applications which were once thought of just wonders. So brainstorming is inevitable when comes to the field of research be it theoretical or applied. That is what we planned. A togetherness for new thoughts from different regions of world in the hottest topics of contemporary research. In that way we are really gratified as our mission is accomplished at its full stretch. In this era of pandemic, disseminating knowledge using the best available mode is to be used. So we thought of organizing an online conference incorporating persons from different countries. The platform we used was Google meet.

Well begun is half done. We began our three days' knowledge festival in the most perfect way. We got Honourable Vice Chancellor of University of Kerala Prof. V. P. Mahadevan Pillai, who probably be the best choice of its kind for inaugurating such a scientific endeavour. The inauguration session started at 9.30 AM. The function was streamed through YouTube live also. Our Principal Dr. R. Sunil Kumar preceded over the function. A warm welcome was offered by Dr. S. Sankar, Asst Professor, Dept of Physics to all the distinguished guests, participants of the conference, teachers and faculties of our college as well as other colleges. The chief guest of the session Prof. V. P. Mahadevan Pillai rendered a very nice key note address which was really informative to all the listeners which pointed out the need for development that is environment friendly. Principal Dr. R. Sunil Kumar on his presidential address emphasised the need for development in field of Science and Technology

for a better tomorrow. Dr. R. Raveendran, Research Officer, S. N. Trusts and UGC Emeritus Professor, Department of Physics, Dr. V. L. Pushpa, Coordinator, Research Cell & Head of Department of Chemistry, and Dr. S. V. Manoj IQAC coordinator also felicitated the function. Dr. G. Sajeev Kumar, Head of Department of Physics rendered words of gratitude to the distinguished guests and participants of the session. More than hundred participants were present in the inaugural session.

First technical session of the program started at 11. 30 AM. The session was handled by Dr. S. Suresh Babu Scientist G & Head, Aerosol Trace gases and Radiative Forcing (ATRF), Vikram Sarabhai Space Centre, Thiruvananthapuram on the topic “Aerosols and Climate”. He figured out the importance of study of aerosols which controls our atmospheric conditions. The participants were very enthusiastic throughout the informative session. The interaction session followed by the invited talk was very lively with a lot of queries from the side of participants. First oral presentation session was on Earth and Planetary Science at 3.00 PM of the day chaired by Dr. Rakesh Chandran S. B., Asst Professor, Department of Physics, S. D. College, Alappuzha. Participants presented their works and were followed by active interactions. Second technical session was at 6.00 PM handled by Dr. Ajey Jacob, Application Specific Intelligent Computing Lab (ASIC Lab), Information Sciences Institute (ISI), University of Southern California (USC), USA on the Topic Hardware for Intelligent Computing. The session was a travel through the world of latest development in the field of Artificial Intelligence and its building materials in simplest words. The participants actively engaged the resource person with a lot questions making the session more fruitful.

Second day of the Conference, 15 December 2020 was started with oral presentations on Multifunctional Materials was chaired by Dr. Deepak Nand, Assistant Professor, Department of Physics Sree Narayana College for Women, Kollam. Participants presented their works and the session also witnessed live interaction session of the participants with the respected chair as well as audience. Third technical session of the conference was on Dr. Simone Stracka, Assistant Professor, University & INFN Pisa, Italy on the topic “Noble Liquid Detectors for Dark Matter Searches” at 3: 00 PM. Dr Simon presented the latest developments in the field of particle detectors made of noble metals starting from the basics of particle Physics and dark matter. Participants were very active and were eager to know different aspects of the ongoing research in the field. Fourth technical session was handled by Dr. Balan Nannan, Distinguished Professor, Chinese Academy of Sciences /Institute of Space Science, Shandong University, Weihai, China on the topic “Space Weather”.

Influence of space weather on the high tech society was well depicted by the resource person. The participants utilized his research experience and teaching skills to understand more about space weather dynamics.

Final day session started with the fifth technical session engaged by Dr. Deepak Samuel, Associate Professor and Head, Department of Physics, Central University of Karnataka, Gulbarga on the topic “Recent Advancement in Proton Therapy”. Application of Particle Physics in medical field was well explained by the resource person. Active participation of the participants once again made the session very lively. Third oral presentation session was on Nuclear and Radiation Physics & Computational Physics chaired by Dr. M Muhammed Salim, Department of Physics, T.K.M.C.A.S., Kollam. Participants presented their works and the session was very well oriented and lively with discussion. The last technical session was on the topic “Carbon Nanotube Based Multifunctional Materials for Electrification of Transport” handled by Dr. Moumita Rana, Research Associate, Multifunctional Nanocomposite Group, IMDEA Materials Institute, Madrid. The session was an exploration of the latest developments in the field of multifunctional materials especially carbon nanotube. Active participation from the side of participants made the resource person to make the session livelier and more informative.

Valedictory session began at 5.00 PM. Dr Dedhila Devadathan, Assistant Professor, Department of Physics welcomed the guests and participants to the session. Dr. R Sunil Kumar, Principal presided over the function. We were really fortunate to have Dr. Balan Nannan, Distinguished Professor, Chinese Academy of Sciences /Institute of Space Science, Shandong University, Weihai, China as our chief guest for the session. Dr. Roxy M S, Asst. Professor, Department of Physics, announced the award winners of oral presentation sessions in the three categories. Mrs. Aiswarya. S, Research Scholar, Department of Physics, National Institute of Technology, Calicut, Ms. Sabna. M, Assistant Professor, Department of Physics, M.E.S Ponnani College and Dr. Ayishabi. P. K, Assistant Professor, Department of Physics, K.M.M Govt. Women's College, Kannur bagged the award for best paper in the categories Earth and Planetary Science Multifunctional materials and Nuclear and Radiation Physics, Computational Physics respectively. Dr Vidya S, conference chair and Asst Professor, Department of Physics gave away the vote of thanks to the ceremony.

All the sessions, both technical and paper presentation sessions were indeed very informative and witnessed the brainstorming of young budding researchers

in the presence of veterans of the field. So we, the organizers of the conference feel very much satisfied. Being the coordinator of this conference, I extend my sincere words of gratitude to many. All my colleagues in the Department without whom we cannot make this happen. Our principal, IQAC and Kerala State Higher Education Council is specially remembered on this occasion with whole hearted thanks. The chairs of oral Presentation sessions are to be mentioned in particular. Dr. Rakesh Chandran, Dr. Deepak Nand and Dr. Muhammed Salim for their active involvement in the sessions. We have a brilliant group of scholars from many parts of the world in our national and international advisory committee who helped us a lot to organise our programme in the most successful way. Last but not the least I thank each and every one participated in this event.