

## First International Conference on Material Sciences and Applied Physics (ICMSAP-2021)

The Department of Physics Pachhunga University College has organised the first international conference on Material Sciences and Applied Physics (ICMSAP-2021) 22nd-24th November 2021. The main objective of ICMSAP-2021 is to provide a platform to all researchers; scholars, faculties and students to participate, and interact with the dynamic scientists to know the recent advances, trends and technological development in the field of Material Sciences and Applied Physics which is taking place all across the globe. The local organising committee comprises of Dr. Shivraj Gurung (HOD & Chairman), Dr. Lalhriatzuala (Convener), Dr. Y. Rangeela Devi (Co-convener), Dr. Lalrinthara Pachuau (Co-convener), Dr. N. Suraj Kumar Singh (Co-convener), Dr. Lalmuanpuia Vanchhawng (Co-convener) and Dr. Dibya Prakash Rai (Convener). The conference was held in virtual mode via the Zoom platform. Dr. Shivraj Gurung was the chairman of ICMSAP-2021. The programme was moderated by Dr. Lalhriatzuala with all technical supports from Dr. Lalmuanpuia Vanchhawng.

We have invited many distinguished guests, among them our, hon'ble Vice-Chancellor of Mizoram University Prof. K. R. S. Sambasiva Rao was the Chief-Patron, Dr. Sanjeev K. Varshney, Adviser & Head, International Cooperation Division, DST, Govt of India was Chief Guest and the Patrons were, Prof. H. Lalthanzara, Principal PUC, Prof. R. K. Thapa (Retd. Professor MZU) and Prof. Tankeshwar Kumar (hon'ble VC of Central University of Haryana). Various eminent scientists from all over the world were invited to deliver the scientific talks. Among them a Distinguished Professor from Northeastern University (NU), Boston USA, Prof. Arun Bansil was one of the keynote speakers.

For all three days, the programme starts from 10:00AM to 4.30 PM but we have scheduled one Special talk at 6.30 PM as per the convenience of the Speakers from USA and Europe. There were altogether 26 lectures including keynote Talks, Special Talks, Plenary Talk and Invited Talk. Among the 26 speakers, 3 were from USA, 2 from Nepal, 1 from Russia, 1 from Latvia, 1 from Kenya, 1 from Turkey, 1 from Taiwan and 16 were from India.

The screenshot displays a Zoom meeting window. The main content is a presentation slide titled "Topology in condensed matter physics (bulk-edge correspondence)". The slide includes a 3D diagram of a surface interface between a "band insulator or vacuum" ( $Z_2=0$ ) and a "topological insulator" ( $Z_2=1$ ). An "inversion point (gapless point)" is shown where the bands cross. Below the diagram are two band structure plots showing the "gapless boundary state". A red arrow indicates "electron propagate" from the topological insulator side. A red text box at the bottom states: "The gapless boundary state is the hallmark of topological phase." The Zoom interface shows a "Participants (62)" list on the right, including names like Lalmuanpuia Van..., PUC (Host), Tay-Rong Chang (Co-host), and others. The bottom of the screen shows the Windows taskbar with the time 12:27 PM on 23-Nov-21.

On Day-1 22/11/2021, there was an inaugural function, the introduction of distinguished guests by chairman Dr. Gurung. Prof. J. K. Paynaik Pro-VC of MZU has delivered an inaugural speech followed by a short motivational speech from Patron hon'ble VC of Haryana Prof. T. Kumar. The technical session starts with the keynote talk from Prof. Mahesh Kumar from IIT Jodhpur in which he gave a detailed insight into a recent trend and growth of 2D materials for gas sensors. There was a short break of 10 min and Invited talk begins at 12.10 PM to 4.30 PM. Prof. Sugata Chowdhury delivered a special talk on 2D topological materials at 6.30PM.

On Day-2 23/11/2021, Prof. Bansil a distinguished Professor of NU, USA has delivered a talk on Topological Quantum phases: Novel Superconductors and Ultra-Thin film. Thereafter our Chief-Guest Dr. Sanjeev K. Varshney delivered a plenary talk. The talk was very insightful with full of motivation for young students and scholars about the career opportunities in a different field, he also talks about the supporting role of DST for uplifting S&T in India, its international relations through science diplomacy. This lecture was attended by our MSc. Students as well. The technical session goes as usual from 12.10 AM to 4.30 PM and a Special talk from Prof. R. I. Eglitis on analysis of surfaces of ABO<sub>3</sub> type perovskite materials.

On Day-3 24/11/2021, the programme starts with the two keynote talk from Prof. V. Madhuria from CUTN Tamil Nadu and Prof. M.K. Kashyap from JNU New Delhi. There were 6 invited talk and one special talk @ 6.30 PM from Dr. H. Hafiz from USA on Li-ion batteries.

On all these three days we have got immense support from all our colleagues from PUC, Zirtiri Science College and MZU for chairing the sessions which makes our events go uninterruptedly smooth.

155 participants have registered for participation from all over the world 125 participants from India, 13 from Pakistan, 10 from Nepal, 6 from Algeria, 2 from Kenya, 1 from Morocco, 1 from Poland, 1 from Taiwan, 1 from UAE, 1 from Egypt, 1 from Palestine, 1 from Japan and 1 from Vietnam. The programme was concluded with comments and suggestions from the participants. We have collected feedback from all the participants and participation certificates were given based on their attendance. We have also distributed the certificates of Appreciations to all our speakers and advisory committee members.

We believe that the non-stop lectures in these 3-Days from eminent professors/scientists and the active participation of young scholars from all over the world have made this first ICMSAP-2021 a grand success. The success of the first ICMSAP-2021 has given us positive vibes and more confidence in continuing ICMSAP as an annual event.