



A REPORT

on

Two Days

International Webinar

on

"Advanced Materials and Their Applications"

June 16 & 17, 2020

Organized by

Department of Physics

Dr. Hari Singh Gour University, Sagar (MP)

(A Central University),

Theme of Webinar:

Advanced Materials are at the heart of technological developments that touch our lives. It find applications such as electronic materials for communication and information technology, Material Science for Better Engineering education, sensors for intelligent environment, energy materials for renewable energy and environment, light alloys for better transportation, materials for strategic applications and more. Nanomaterials and nanotechnology is the study of properties and application of extremely small things. It brings together all the other science fields, such as chemistry, biology, physics, materials science, and engineering.

The Webinar on Advanced materials and their applications aims to proclaim knowledge and share new ideas amongst the professionals, industrialists and students from various research areas of Materials Science, Nanotechnology, Chemistry, physics and Mathematics. The webinar gives a platform to scientists and researchers to share their experiences and findings during this COVID-19 pandemic period.

Dates of webinar: June 16 & 17, 2020.

Inaugural Details

It was a two days webinar organized by department of Physics, School of Physical and mathematical Sciences during June 16 & 17, 2020 in Online Mode on Zoom platform. During Inauguration of the webinar Dr. Rekha Garg Solanki, Convener of the webinar introduced the audience about the theme of the webinar and Prof. Ranveer Kumar, head of the department gave welcome address

and introduced audience to the University and Department of Physics. Prof. Diwakar Shukla, Dean of School, Prof H Thomas (VC nominee) addressed the virtual gathering and Prof. Anurag Shrivastava, ABV - Indian Institute of Information Technology and Management, Gwalior was the chief guest of the program. He enlightened the importance of materials in modern technological developments. The vote of thanks was given by Dr. K S Mathur, assistant professor, Department of mathematics as co-convener of the webinar.

Details of Technical session:

In technical session of June 16, 2020 the first talk was delivered by **Prof. Anurag Shrivastava**, ABV - Indian Institute of Information Technology and Management, Gwalior on silicon technology and materials for future technological devices. In his talk he had focused on existing technological devices, future technological devices and computational prediction of materials properties through various computational tools. The second talk was delivered by **Prof. Namita Brahme**, Department Pt. Ravishankar Shula University Raipur (CG). She gave a wonderful talk on basics of Luminescence. She discussed the luminescence phenomena in brief and introduced virtual audience webinar materials synthesis and analysis of their luminescent properties. Prof U P Verma was not able to connect in the virtual gathering of webinar. The last talk was of **Prof. P. D. Sahare**, Department of Physics and astrophysics, Delhi University, Delhi. He gave a wonderful talk on material synthesis, characterization and their device applications. He was made a brief and long discussion on various synthesis techniques, prepared samples and analyzed results. The talk was very useful for research scholars as well as faculties working on advanced materials.

On the second day of webinar there were four talks on various topics. The very first talk was at 9:00 am **of Prof. Ravindra Pandey**, Professor & Chair 108 Fisher Hall Michigan Tech. University, Houghton (USA). Michigan Technical University, USA. He gave a wonderful talk to the PG and PhD students on Nanomaterials: A brief discussion. His talk was based on nanomaterials brief introduction and its importance. The next talk was of **Prof. P. K. Bajpai**, Guru Ghasidas University, Bilaspur (C.G.). His talk was on Ion beam technology and its applications in advanced material research. He explained the ion beam technology in brief and uses of that for the analysis of various properties of advanced materials. The third talk of the day was of **Prof. P. Rajaram**, SoS Jiwaji University, Gwalior. His talk was on thin films synthesis techniques and their applications for solar cell devices. He described the thin film synthesis methods in briefs and also discussed the advantages and drawbacks of various thin film synthesis methods. He had discussed the process of the preparation of thin films solar cells. The last lecture of the webinar was delivered by **Dr. Rakesh Pandey**, scientist E, SSPL, DRDO Delhi. He discussed the quantum mechanical tunneling concept to applications. He was briefly described the device based applications of the several of quantum mechanics based approximation methods like WKB approximation.

Details of the participants

The webinar has 314 registered participants out of which 14.3 percent were research scholars, 60.5percent were faculty members and 20.1 percent were students. Remaining was of various other groups as shown in the figure 1.

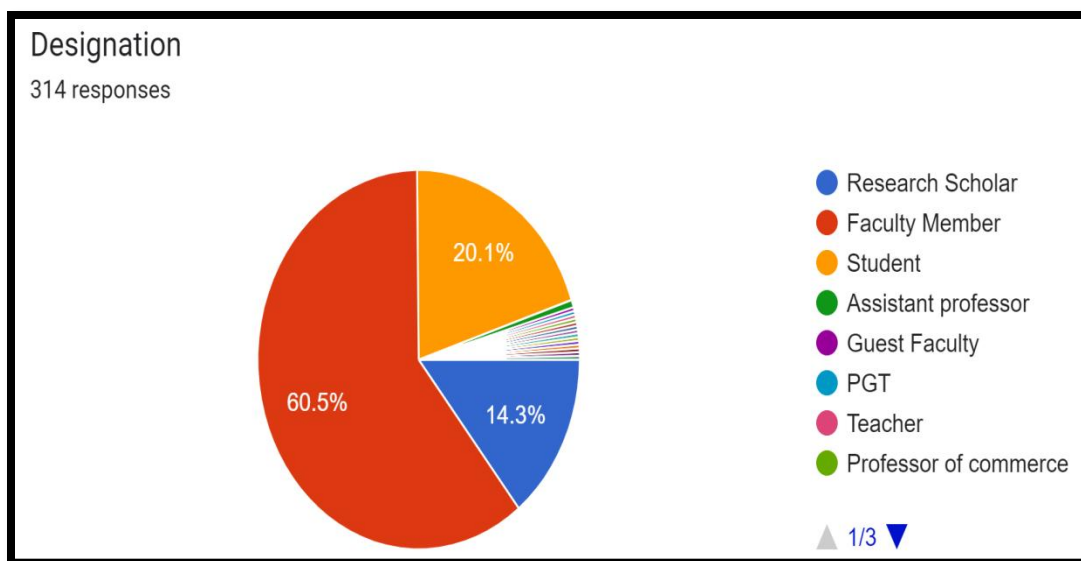


Fig.1 Details of the registered participants

Details of Valedictory Session

The valedictory session was the official declaration of the ending of the **Two days International Webinar on Advanced Materials and Their Applications**. The valedictory session was addressed by Dr Ranveer Kumar Head of the department of Physics, Prof. Diwakar Shukla, Dean of School, Prof H Thomas (VC nominee). The participants were highly appreciated the lectures of the webinar. At the end of the session the vote of thanks was delivered by Dr Rekha Garg Solanki, Convener of the webinar and with the permission of chair declared the end of the webinar.

