



Government City College (A)

Nayapul, Hyderabad

Affiliated to Osmania University

Accredited with 2.76 B⁺⁺ Grade

<https://qdcts.cgg.gov.in/charminar.edu>



Report on

International Conference on Advances in Smart Nano-materials (ICASNM-22)

March 24th & 25th 2022

Government City College (Autonomous), Hyderabad

Affiliated to Osmania University, NAAC "B⁺⁺" Grade with CGPA 2.76

Department of Physics



A Two Day International Conference
on
Advances in Smart NanoMaterials
Blended Mode (Offline & Online)

UNDER THE GRANTS OF RUSA (Rashtriya Uchchatar Shiksha Abhiyan)





Faculty Members

 Chair person Dr. P. Bala Bhaskar MSc., PhD Principal Government City College(A), Hyderabad, Telangana	Dr. S. E. Naina Vinodini Asst. Professor, In-charge Department of Physics Dr. K. Parvathalu Asst. Professor Department of Physics Mr. J. Bhem Rajam Asst. Professor Department of Physics	Dr. Y. Vasudeva Reddy Asst. Professor Department of Physics Dr. D. Chinni Krishna Associate Professor Department of Physics Mrs. Soujanya Laxmi Asst. Professor Department of Physics
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On 24-25th March, 2022 @10am to 5Pm

The main aim of this conference was to bring together leading academicians, researchers, technocrats, practitioners, and students to exchange and share their experiences and research outputs on all aspects of advances in smart nanomaterials. It was also meant to provide a premier interdisciplinary platform to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered and solutions adopted in the field of smart nano-materials. In this connection, the conference was initiated in March 10, 2022 and 7member executive committee was formed along with principal of the college. The executive committee identified subject expertise globally from five different countries, took approval of their willingness to support the conference, and formed an advisory board and a scientific committee. The initiation of the idea of this conference originated through the vision of our commissioner, Sr. Navin Mittal IAS, who extended his constant and unflinching support. The perpetual encouragement from Principal of the college Dr. P. Bala Bhaskar played a catalytic role. The faculty members from the department of physics and other department faculty members gave their valuable inputs at various stages.

Nanotechnology is umbrella term that covers all interdisciplinary research fields of science and engineering departments. Nanotechnology has a potential to create many new smart nano-materials and devices ranging from biomedical, textile industry, bio-foldable devices, energy production, drug deliver and cancer treatment, flexible electronics etc. Smart Nano Materials have enabled progress in many areas and brought a revolutionary change in the wide range of industrial applications. The environment initiative's is the need of the hour in the advancement of smart nanomaterials with potential impact on global economy. This conference is organized under the grants of RUSA (Rashtriva Uchchatar Abhiyan), Nampally, Hyderabad.

The committee finalized ten themes that included functional nanomaterials, polymer nanocomposites, Sustainable Materials and Structural Systems, thermoelectric organic materials, fuel cells, solar cells, Bio cells, Batteries, and Nanophotonics, and topics related to smart nanomaterial's. The conference preparations started with the call for abstracts; 55 abstracts were received. The next step was the call for papers, and papers submitted by authors, 20 were accepted for oral presentations and 10 for poster presentations. The process is on the way to the Conference Proceedings. 55 abstracts are published as souvenir with paramount publishing house New Delhi with ISBN number: 978-93-93259-25-27.



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The First International Conference on Advances in smart nano-materials(ICASNM-22) held on 24th and 25th March 2022 at Department of Physics, Government City College (A), Osmania University, Hyderabad, Telangana brought together 400 participants from various academic colleges, Universities, and industry across the globe. The honourable speakers are from five different countries such as USA, UK, Germany, New Zealand, India (IITH, IITG, HCU, Osmania University). This was a two day International conference organized by the Department of Physics and was sponsored by RUSA, CCE, Nampally, Hyderabad.

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 Department of Physics
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 HYD, TS, India

Organizing Secretary
Dr. K. Sadhana
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 Department of Physics
 Saifabad PG College
 HYD, TS, India

Co-Conveners
Dr. Anusuya Pal
 Post Doctoral Fellow
 Department of Physics
 University of Warwick, UK

Dr. K. Parvathalu
 Asst. Professor
 PhD & Post Doc from USA
 Department of Physics
 GCC, OU, HYD, India

Convener **Organizing Secretary** **Co-Conveners**

Dr. S. E. Naina Vinodini
 Asst. Professor, In-charge
 Department of Physics,
 GCC, OU, HYD
 TS, India (+91) 9949214767

Dr. K. Parvathalu
 Asst. Professor
 Department of Physics,
 GCC, OU, HYD
 TS, India (+91) 9440237082

Dr. Y. Vasudeva Reddy
 Asst. Professor
 Department of Physics,
 GCC, OU, HYD,
 TS, India (+91) 9440136451

Dr. D. Chinni Krishna
 Associate Professor
 Department of Physics,
 GCC, OU, HYD,
 TS, India (+91) 9885301628

Organizing Committee →

Mr. J. Bhem Rajam
 Asst. Professor

Mrs. Soujanya Laxmi
 Asst. Professor

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 Department of Physics,
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Asst. Prof. Dr. R. Sridhar
 Asst. Professor
 COE, GCC, OU, TS, India

Last date to submit abstract 22/03/22	Note: Published with ISSN Journal Publication	Last date to submit full paper 10/04/22
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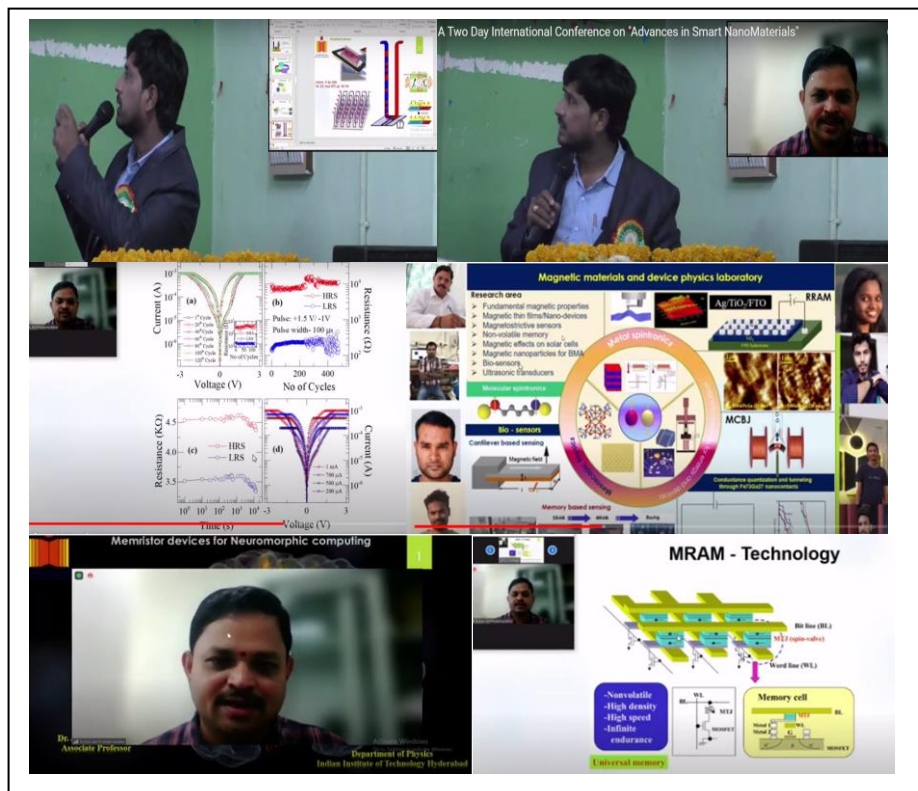


Inaugural Session: Guest of Honour, Joint Director of CCE, Dr.DSRRajendra Singh delivering the message about conference, inaugural address by principal Dr.P.BalaBhaskar

This summary captures a two-day conference of inaugural session and keynote addresses, which took place at 10am on March 24th, 2022. Joint Director of CCE, Dr.DSRRajendraSingh has given valuable information related to smart nano-materials. He has enlightened all with his presentation related to importance of nanotechnology and its applications such as fibre optics, textile industry, drug deliver, painting industry and cleaning industrial applications. IQAC coordinator Dr.Neeraja madam has given wonderful information related grants and importance of conference. The vice -principal of collegeDr.Aijaj Sultana madam gave wonderful information related term Nano and its origin. She also mentioned that nanotechnology play very important role in day to day life and its impact of positive effect of society. The principal of the college Dr.P.BalaBhaskaer sir thanked for all speaker for accepting as a speaker for this international conference. He has mentioned that nanotechnology can change the world with its applications. He also mentioned that this conference would help a lot for the UG/PG students and faculty from other research institutions and colleges across the world.

Invited Speaker Prof. Gary Mankey from University of Alabama, USA and summary of capture of his work, received question from – Prof. Dr. J. Suryanarayana from IITH.

The first speaker Prof. Gary Mankey is from University of Alabama, USA and he has delivered his talk on **Probing Nanoscale Magnetic Structure with Photons, Neutrons, and Electrons** which is very **interesting topic** to current advances in nanotechnology. He focused and gave very informative talk on electron diffraction, light scattering and neutron scattering. This would give complete structural information of materials and devices. He presented very well visualization of spin arrangement, chirality and helical spin dy layers. Dr. J. Suryanarayana IIT Hyderabad asked question related thin film- reflection related spacing. Dr. Parvathalu Kalakonda from City College is also asked question related to strength of magnetic field which we can apply to know structural information for super lattices.

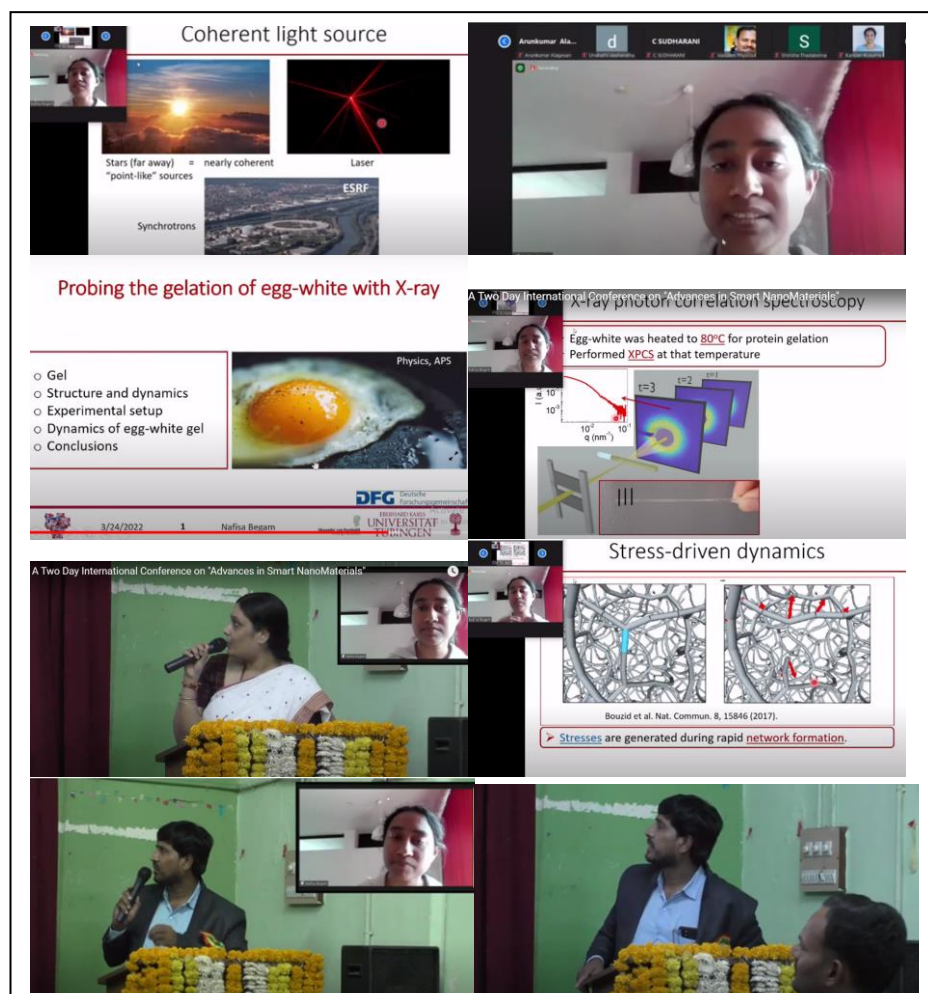


Invited Speaker Assoc. Prof. J. Suryanarayana from IIT Hyderabad, USA and summary of captures of his work.

The second speaker is Assoc. Prof. Dr. J. Suryanarayana from IIT Hyderabad and he has delivered Memristor Devices for Neuromorphic computing. He has given wonderful information regarding memristor devices, resistive switching, MRAM, CMOS, FRA, PCM

RRAM technology etc. with using magnetic materials. He also mentioned those developing high storage materials, future storage devices and their simplification, advantages and disadvantages. It is a big challenge for scientist to keep small area and increasing storage. RRAM is the one which has excellent features such high speed, scalability, low power and simple structure. The questions are received from Dr.K.Parvathalu City College regarding effect GO coating and how structure influence on stability and conductivity. He has explained in a great manner with lots applications and has motivated many faculties, students across the globe.

Dr.Nafisabegam is eminent speaker from Institute of Applied Physics, University of Tuebingen, Germany. She has delivered a talk on Probing the Gelation of Egg White with X-Rays. She has explained gelation and structure of egg white in a great manner with X-ray scattering technique. In Egg gelation, Static structure is remaining same, but dynamic structure changes with time. Questions are received from various faculty members and students. Dr.Y.Vasudeva Reddy asked question related gelation temperature of egg and its stability.



Invited Speaker Dr.Nafisa Begum from Institute of Applied Physics, University of Tuebingen, Germany and summary of captures of her work.

Assoc.Professor Dr.D.Pamu is eminent speaker from IITG, India. He has delivered a talk on Development of Nano ceramics for Electronic Applications. He has presented his work and dynamics, structure information of Nano ceramic materials. He has been working dielectric and thermal physical properties of materials which can be very useful in many industrial applications. He has explained structural, optical, electrical studies of Nanocrystalline thin films in a great manner with industrial applications. Questions are received from various faculty members and students. Mr.Ratan Kumar PhysicsAsst.Professor at GDC Sangareddyasked question“how does the grain shape effect of electrical conductivity.Dr.Y.Vasudeva Reddy has asked question related volume of unit cellvs temperatureand how do we keep constant density of bulk materials. Dr.K.ParvathalyAsst.Professor City College, has asked question related to DSC data of scan rates, porosity and its influence on dynamic of structure. Dr.SowjanyaAsst.Professor GDC Gajwel has raised question related resonance frequency of materials. He has explained in a great manner for all questions.

Development of nanoceramics & thin films for microwave and electronic applications
 Prof. D. Pamu
 Department of Physics & Centre for Nanotechnology,
 IIT Guwahati, Guwahati-781005

DIELECTRIC RESONATOR DEVICES

Applications:
 • RADAR DETECTORS
 • COBLESS PHONES, GLOBAL POSITIONING SYSTEMS
 • MULTIPLEXERS, COMBINERS
 • SATELLITE AND MILITARY COMMUNICATION SYSTEMS

Impedance analysis

Real impedance, Z' (kohm) vs Frequency (Hz) (a)
 Imaginary impedance, Z'' (kohm) vs Frequency (Hz) (b)

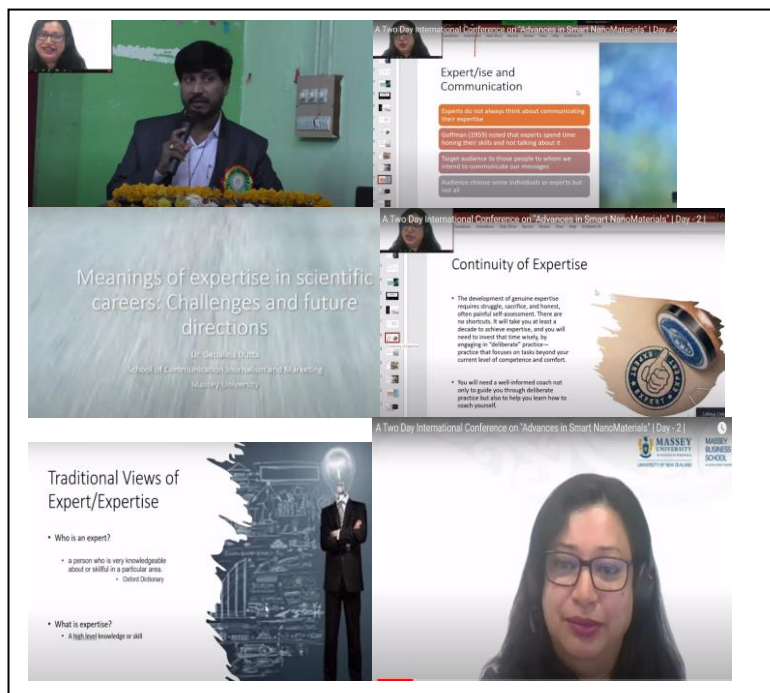
The frequency response of (a) real (Z') and (b) imaginary (Z'') impedance of MZrT sample at various temperatures (298 K- 478 K).
 Thermally activated non-Debye like relaxation

SEM images of MZrT ceramics sintered at (a) 850°C, (b) 900°C, (c) 950°C & (d) 1000°C for 3 h.

- Uniform grain morphology was produced at 950°C on sintering for 3 h.
- The grain sizes achieved for the samples were in the range of 2.53-5.29µm.

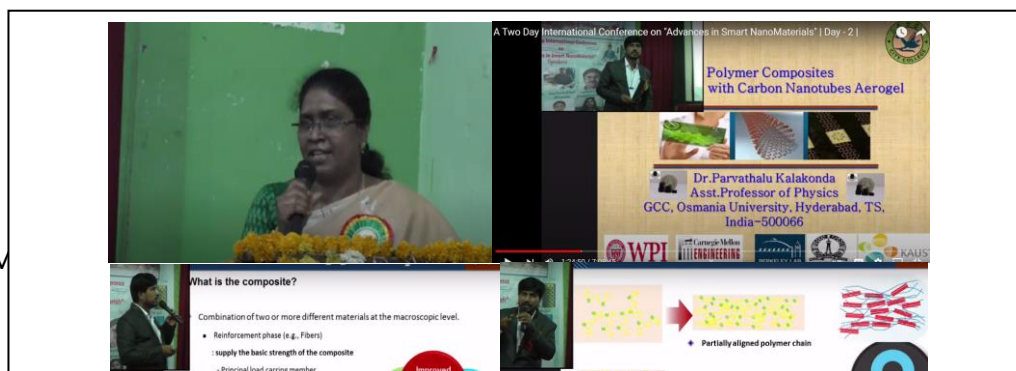
Presentation of Invited Speaker Assoc. Prof. Dr.D.Pamufrom IITG, India and summary of captures of his work.

Dr. Debalina Dutta is an eminent speaker from the Faculty of School of Communication and Journalism, Massey University, New Zealand. She has presented on the Meaning of Expertise in Scientific Careers: Challenges and Future Directions. Her presentation was highly interactive, involving participants and addressing their questions. She provided numerous examples, such as hard work, dedication, confidence, traditions, and roots, which carry a wealth of information to society in order to become a great expert in any given field. The presentation was very active with participants.



Presentation of Invited Speaker Dr. Debalina Dutta, Faculty of School of Communication and Journalism, Massey University, New Zealand

Dr. Parvathalu Kalakonda, Asst. Professor, is a speaker from Government City College, Osmania University. He delivered his talk on Aligned polymer composites with Carbon Nanotubes Aerogels. He explained the importance and differences of aligned composites and non-aligned composites. In the case of aligned composites, there is improvement in thermal, electrical, and mechanical properties. He presented the right nanomaterials and fabrication methodology for smart nanotechnology research and devices. Questions were received from research faculty and students regarding types of nanotubes and aspect ratio. Dr. Pavan Kumar, Dept. of Physics, Matrusree Engineering College raised a question about multi-walled carbon nanotubes.

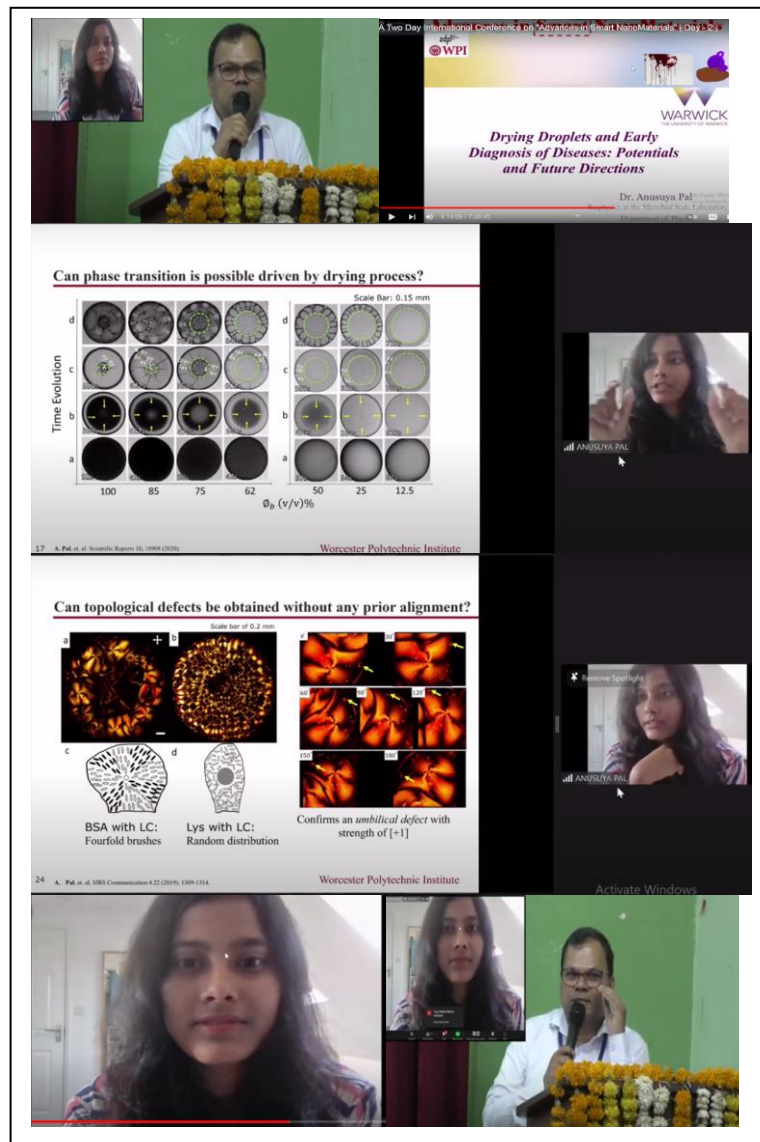


ICASNM

physics

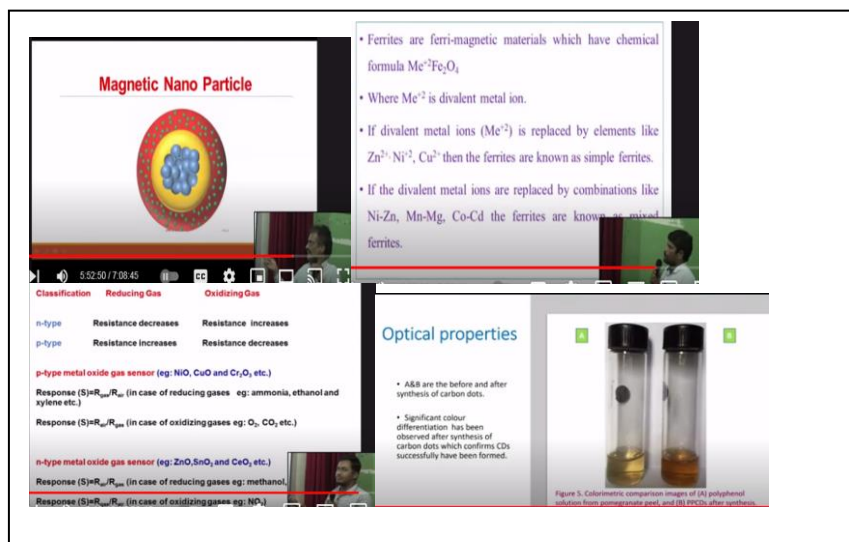
Presentation of Speaker Dr.ParvathaluKalakondais from Faculty of Government City College(A), Osmania University, Hyderabad, India.

Dr.Anusuya Pal is a speaker from Department of Physics, University of Warwick, UK. She has delivered her talk on drying droplets and early diagnosis of diseases: potential and future directions. She has explained importance of colloidal droplets and bio-colloidal droplets with examples. She has presented Structure analysis of blood dried films and the origin or mechanics of dried blood droplets.



Presentation of Speaker Dr.Anusuya Palis from Dept of Physics, University Warwick, UK.

Paper Presentations



Oral presentations (offline and online) are received from faculty members and students across the country

The oral presentations have received from various universities, colleges, and research institutes. We have arranged presentations in blended mode: offline and online. The conference gave an opportunity to young researchers, faculty members, students to interact with the international speakers in the field of nanotechnology. The proceedings of the conference will be published after peer review process.

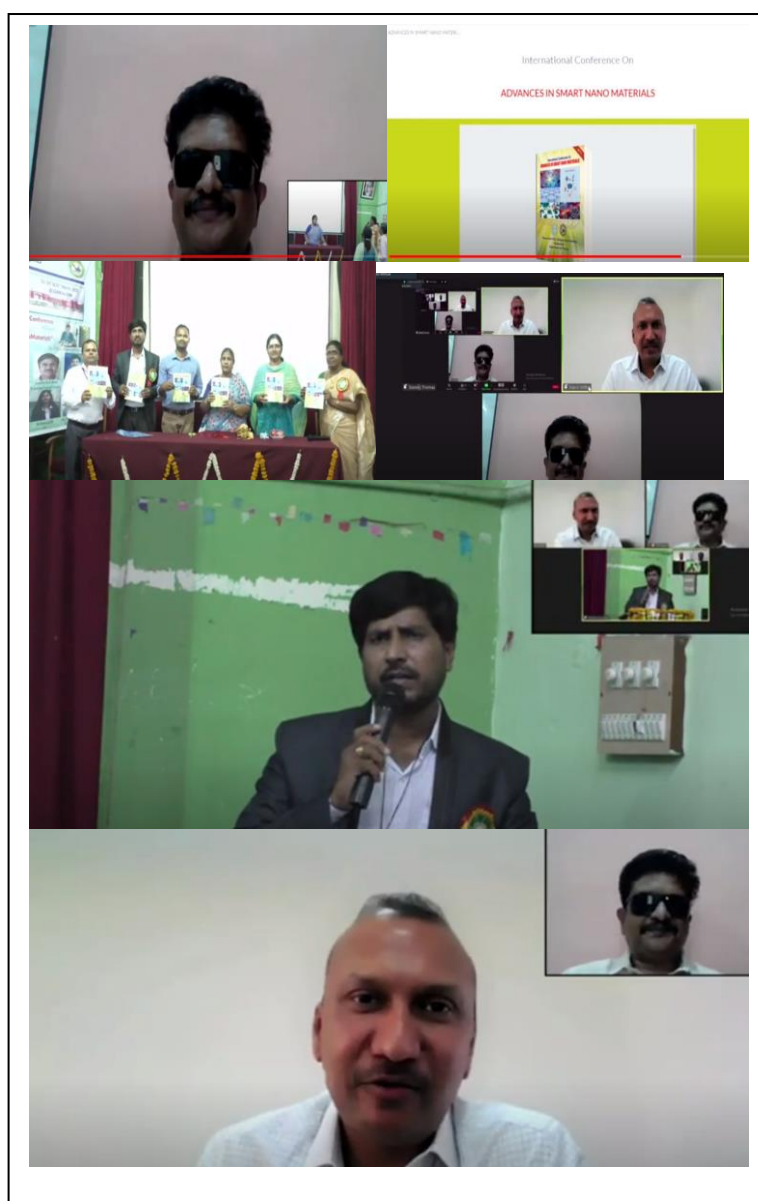
Poster Presentations



Poster presentations) are received from faculty members and students across the country and the judges committee are reviewing/interacting with the posters presentation participants

The poster presentations have received from various universities,colleges, and research institutes. We have arranged poster presentations in only physical mode. The poster presentations gave an opportunity to see research scholars from various colleges and universities. The participants have interacted with the judges regarding their research work. The judges have selected the best three posters based on their research work, presentation skills etc. for the cash prize: first place-Rs.3000, second place-Rs.2000, Third place-Rs.1000.

Valedictory session:



Summary of captured pictures in Valedictory function, the eminent speakers are chief patron of the conference Sri.Navin Mittal IAS, Commissioner of Collegiate education, Principal Dr.P.BalaBhaskar, Faculty of City College.

The two day conference ended with a valedictory session. The report of the conference and its importance is given by Dr.NainaVinodhini Madam In-charge, Asst.Professor of Physics; City College.This was followed by a valedictory address by Dr.P.BalaBhaskar principal of the college. He has given a plan of vision to all faculty members of college to establish research center and explore research facilities. He also requested to commissioners to provide grants to establish research center at City College which could help a lot to buy chemicals, facilities. It also helps a lot to train or to establish research activities for UG/PG students.

The conference of Souvenir was released by the honorable chair of the conference Commissioner of Collegiate education Sri.Navin Mittal sir. The commissioner sir has mentioned that this conference is true international level standard and he also mentioned that nanoparticle has potential applications in a wide range of areas. He also mentioned that the proceedings of this conference would help a lot for the research society. He has complemented the faculty members of department of physics for organizing such a great event. He praised that City College is going to be top college in the state in terms of quality of research activities. He also insisted that the students should inculcate innovative ideas and aim to become future scientist and he also insisted that the constant updating of technical knowledge in new research area is necessary for academic growth of oneself. The delegates and faculty from various colleges gave a feedback on conference and they mentioned that it was organized in such a great manner. The session concluded with a vote of thanks proposed by Asst.Prof.Dr.K. Parvathalu, Dept of Physics, City College.



Cash prizes Rs.3000 for the first place, Rs.2000 for the second place, Rs.1000 for the third place have given for the best poster presentations based on their research theme and presentation's: First Place: D.Swathi Social welfare Degree College, Vikarabad , Second place: AmuragPandey BSC students from GDC Hayathnagar, Third Place: B.Bramanandam team from Matrusree Engineering College, Hyderabad.

For the poster presentations, the conference research and Judges Committee have decided to give cash prizes for the best innovative poster presentations. The details of Cash prizes are

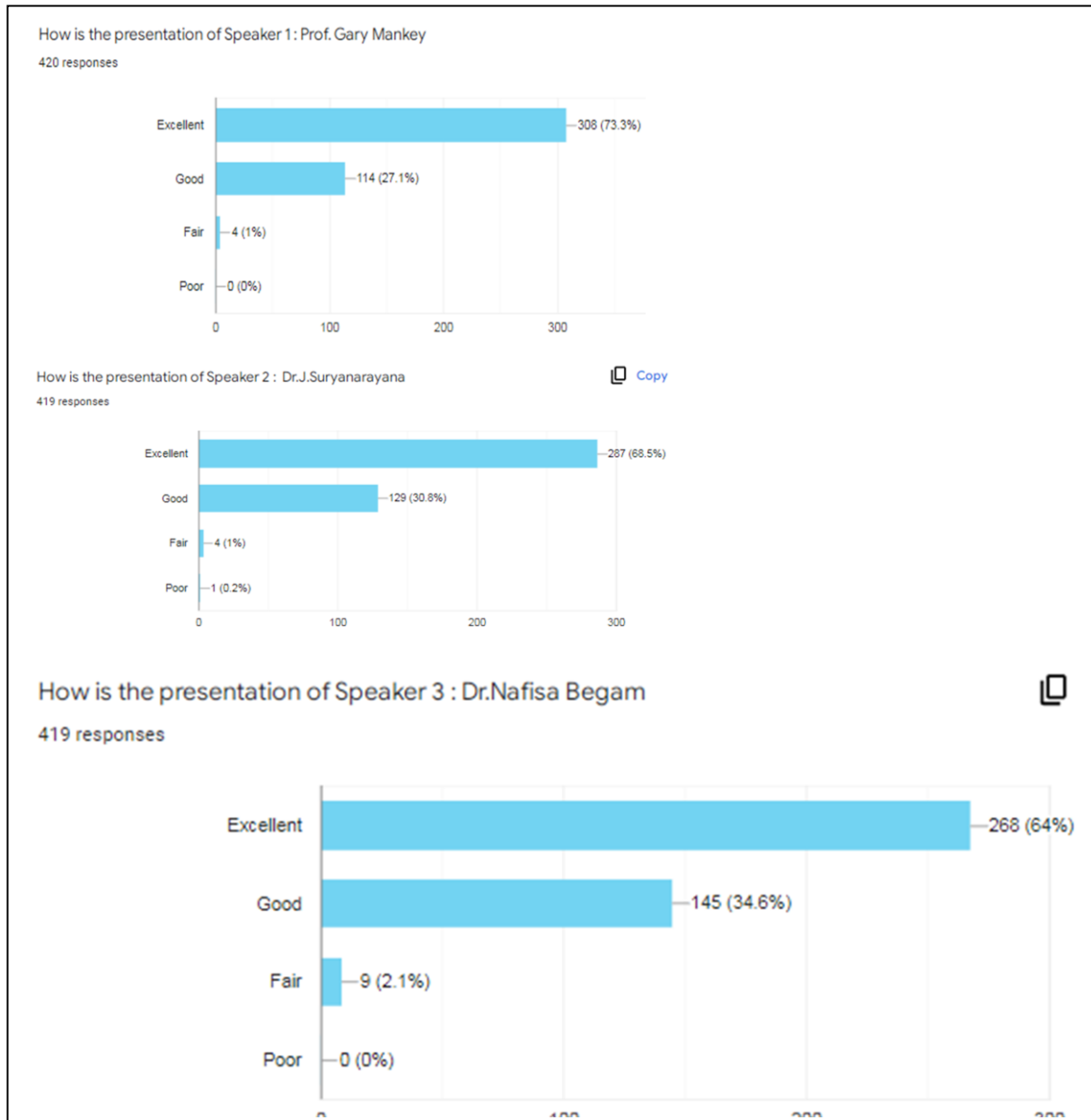
Rs.3000 for the first place, Rs.2000 for the second place, Rs.1000 for the third place. The judges have selected best three poster presentations based on various factors such theme, presentation, quality of research, quality of poster etc. The winners details are following: First Place: D.Swathi Asst.Professor from Social welfare Degree College, Vikarabad, Second place: AmuragPandey BSC student from GDC Hayathnagar, Third Place: B.Bramanandam B.Tech student from Matrusree Engineering College, Hyderabad.



Captured pictures with staff and faculty members of department of Physics, City College, Hyderabad.

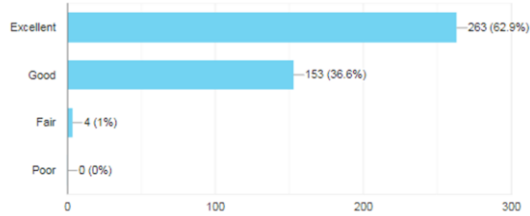
We have received feedback from faculty members, research students across the globe via Google form and received positive feedback regarding speaker research presentations, arrangements, the quality of speaker's presentations. The participants have mentioned and asked that it is good to keep or conduct conferences regularly in order to improve or get awareness on research or motivate students towards research and innovative projects.

Feedback from all participants:



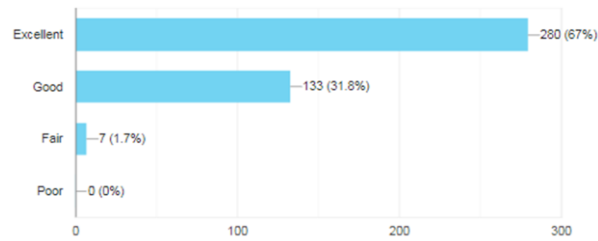
How is the presentation of Speaker 4 : Prof. D.Pamu

418 responses



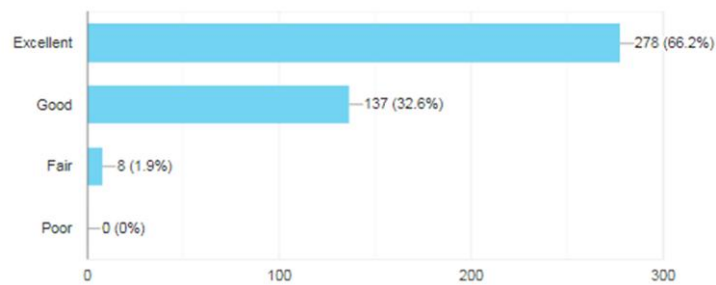
How is the presentation of Speaker 5 : Dr.Debalina

418 responses



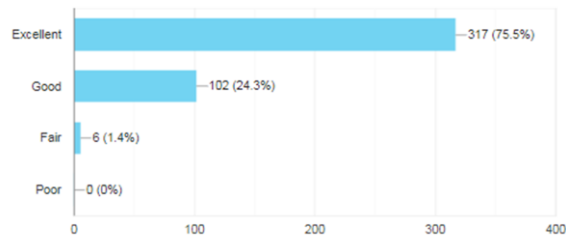
How is the presentation of Speaker 8 : Dr.Anusuya Pal

420 responses



How is the presentation of Speaker 7 : Dr.K.Parvathalu

420 responses



Feedback comments from all participants:

Overall presentation of all the speakers is very informative and excellent

Very nice and informative session

From my side I request organizers to conduct more conferences which are useful to students. This conference is a very informative and to our physics department
Useful session

Very good organization. good keep it up
Well organized

Please conduct this type of conference again

Thank You Sir Providing such a great information which is useful for us about nano tubes and explanation briefly about advanced in nano tubes and its applications and giving best motivation with small examples which we seen in our day to day life and It will be very useful for us in our height studies , Thankful to each and every sir of government city college

Thanks to organisers and the department of physics

Very useful session

Nice explanations by all speakers

Good Work

Thank you for wonderful and informative Conference sir ., Hope we will expect more like this Conferences from physics department sir and thank you one and all the organising team.

No finally it was Good presentations especially by parvathalu sir.

Everything was excellent and interesting as they were new things, which can be applicable in our knowledge

This Two days international conference is very informative and thanks you for conducting such a great conference

Good presentations

Very excellent platform to learn many things through this

It's a very good international Conference. It gained me lot of knowledge about Nano particles.

Overall it's a good conference conducted by the college.

Hoping such workshops in future

Good explanations by all the speakers

No suggestions this is wonderful conference that I have never seen. Thank you for all sir's and mam's

Superb presentation sir we learn more information today (no suggestions sir)
Excellent

Everyone has different ideology please share and communicate and encourage them
thank you all

It is a very excellent conference thank you for each and every reaches for your
presentation and valuable information

Very useful information for us

It's is very wonderful session. More knowledge gained from this. And How to be research
will be. By this I came to know that how the nano technology plays a important role in our
day-to-day life. Its very interesting. I request you to conduct this type of seminars which
helps every research scholars to share their information. Thank you for conducting this
seminar.

Thank you, conduct another conference related to Life sciences also
Wonderful Organising & Congratulations to all Organising committee
Motivated and research oriented research work

Most important topics sir farther future tqts for giving information
Very informative session.

provide YouTube link for all the sessions so that we can show the link to our students
during free time.

Thanks to organisers for giving me the opportunity.
Good conducting seminars, well explained all Professors

We are very thankful to you all.....
Good organization thank's to organization
It's best

Tq for conducting this two day conference on advances in smart nano materials. it was very
useful session.

We are thankful to you all sir, All the best....
Excellent programme

Interesting topics. Very good organizing committee

The Department of Physics has completed successfully the event of International conference
on advances in Smart Nanomaterials. The faculty members and research scholars have
participated from various Universities, Colleges, and Institutions across the globe in blended
mode. Hence, with this experience, we are going to conduct International conference series
every year to promote research and technology for the research community.