

FACULTY DEVELOPMENT PROGRAM

on

“Recent Advances in Basic and Applied Sciences”

December 11 - 16, 2023

Detailed Report

An online, one week faculty Development Programme (FDP) on Recent Advances in Basic and Applied Sciences was organized by Department of Physics, Chemistry and IQAC, of Shyamlal College in collaboration with Mahatma Hansraj Faculty Development Centre Hansraj College, University of Delhi from December 11 to 16, 2023. This FDP was attended by more than 50 participants from across India, nine panelists from Delhi university and 12 renowned scientists and academicians from all over the India delivered their expert lectures during this FDP. The inaugural ceremony of the program took place at 10.00 am on 11th December 2023. The chief guest of the ceremony was Prof. Avinash Chandra Pandey, Director, IUAC Inter-University Accelerator Centre.

Inaugural Address by Prof. Avinash Chandra Pandey, Director Inter University Accelerator Centre

The inaugural session begun with the introduction of Shyamlal College and Mahatma Hansraj Faculty Development Centre, Hansraj College. Thereafter, all the distinguished speakers from diverse fields were welcomed. Afterwards, Prof. A. C. Pandey (Chief Guest) addressed the august gathering.

zoom

FDP-114 “Recent Advances in Basic and Appli... - Shared screen with speaker view

Download (317 MB)

The screenshot shows a Zoom meeting interface. On the left, a presentation slide is displayed with the following content:

- Logos for INOXCVA (Experience = Expertise = Excellence), IUAC, SAMEER, and MeitY (Ministry of India).
- Text: "Inter University Accelerator Center designed an indigenous zero boil off MIT (Mitsubishi) actively shielded whole body superconducting magnet system manufactured by M/S. INOX (Ministry of Electronics and Information Technology) through the..."
- Images of various accelerator components: Vacuum Vessel, Thermal Shield (AT 1200/1000), Polyan Vessel, Gradient Coil.
- Quote: "So in Savika, Dianmar active away, but you have some Mission. Joe basic science is car or applied science."
- Speaker: Dr. Avinash Chandra Pandey.

On the right, a chat window titled "Chat Messages" is visible, containing the following messages:

- Search chat input field.
- Message from DR.VIMAL KUKRETI, G... (01:00:06): DR.VIMAL KUKRETI, GOVT.DEGREE COLLEGE CHAUBATTAKHAL (UTTARAKHAND)
- Message from Manju (01:01:19): Dr. Manju Vashistha, GPGCW Rohtak
- Message from Neeraj Kadian (01:03:14): Neeraj Kadian
- Message from Neeraj Kadian Assistant Professor: Neeraj Kadian Assistant Professor Govt. PG. Collene for Women Rohtak

The session was concluded by acknowledging the enlightening words by the Chief guest.

Day 1 - December 11, 2023

Session 1 (10:30 am to 11:30 am)

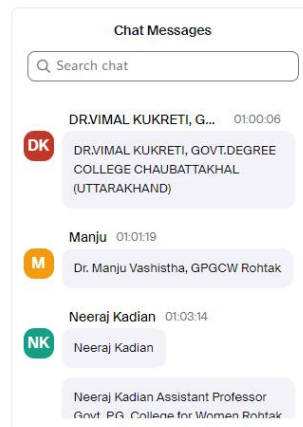
Resource Person - Prof. Ajit Mahapatro, Department of Physics and Astrophysics, University of Delhi

In first Technical Session, Prof. Ajit Mahapatro from Department of Physics & astrophysics, University of Delhi delivered his expert lecture on Nanotechnology & nano science. This session was a resounding success. It not only expanded the horizons of knowledge for the participants but also stimulated a renewed curiosity to explore the depths of conductivity spectroscopy. The insights shared during this session will undoubtedly resonate with the attendees, influencing their teaching, research, and practical applications in the realm of basic and applied sciences

zoom

FDP-114 "Recent Advances in Basic and Appli... - Shared screen with speaker view

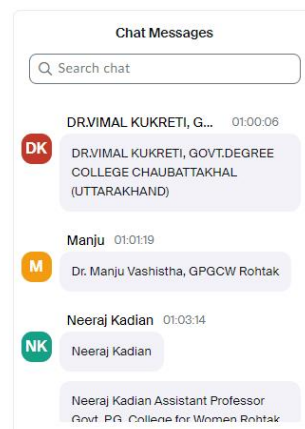
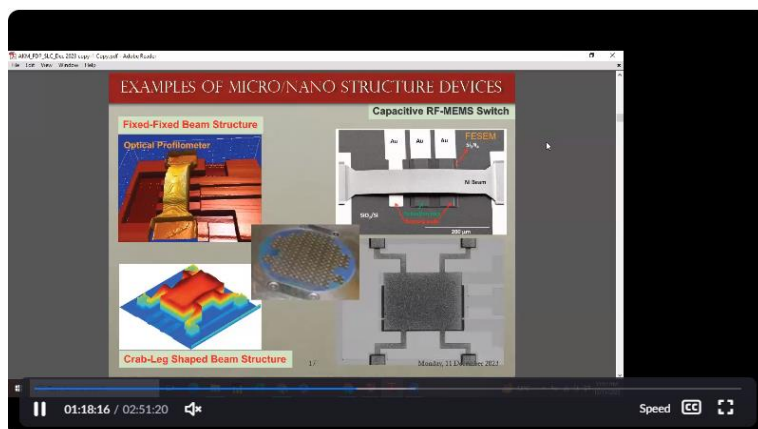
Download (317 MB)



zoom

FDP-114 "Recent Advances in Basic and Appli... - Shared screen with speaker view

Download (317 MB)



The session concluded with a formal vote of thanks, acknowledging the active participation of attendees and addressing their queries.

Day 1-- December 11, 2023

Session 2 (11:30 am to 01:00 pm)

Resource Person - Prof. Amit Chandra Kharakwal, Amity University, Noida

During the second technical session, Prof. Amit Chandra Kharakwal from Amity University Noida, discussed his expertise on “Plant-Microbe and Microbe- Microbe interaction for Sustainable Agriculture” in which he explained how we can enhance sustainability by taking the inspiration from nature and how can we achieve better results using symbiotic microbes present in our ecosystem.

zoom

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Download (317 MB)

Short and Long-Distance Signaling in BFI

- Diverse small molecules, either soluble or volatile, are perceived as a cue for the presence of the fungal/bacterial interactant during BFI

Because you are going, it's going to get the milk which is going to metabolize the laptop.

Chat Messages

Search chat

DRVIMAL KUKRETI, G... 01:00:06

DK DRVIMAL KUKRETI, GOVT.DEGREE COLLEGE CHAUBATTAKHAL (UTTARAKHAND)

Manju 01:01:19

M Dr. Manju Vashistha, GPGCW Rohtak

Neeraj Kadian 01:03:14

NK Neeraj Kadian

Neeraj Kadian Assistant Professor Govt. PG College for Women Rohtak

zoom

FDP-114 "Recent Advances in Basic and Appli... - Shared screen with speaker view

Download (317 MB)

Nutrient acquisition

Inhibition of plant pathogenic fungi

Mycorrhiza + Bacteria

Enhancement of root branching

Any vision of planned and announcement of root branching. So what we our research findings are that we in Dika interact with audio bacteria.

Chat Messages

Search chat

DRVIMAL KUKRETI, G... 01:00:06

DK DRVIMAL KUKRETI, GOVT.DEGREE COLLEGE CHAUBATTAKHAL (UTTARAKHAND)

Manju 01:01:19

M Dr. Manju Vashistha, GPGCW Rohtak

Neeraj Kadian 01:03:14

NK Neeraj Kadian

Neeraj Kadian Assistant Professor Govt. PG College for Women Rohtak

The session concluded with a formal vote of thanks, acknowledging the active participation of attendees and addressing their queries. Participants expressed their enjoyment of the informative and engaging session. The session ended with thanks to the speaker.

Day 2 - December 12, 2023

Session 1 (10:00 am to 11:30 am)

Resource Person - Prof. Narender Bhojak P.G. Department of Chemistry, Govt. Dungar College, Bikaner, Rajasthan

The first technical session of Day 2 was started with the expert talk of Prof. Narendar Bhojak, P.G. Department of Chemistry, Govt. Dungar College, Bikaner, Rajasthan. Prof. Bhojak shared his research work and his endeavours to make his institute greener and sustainable. The topic of his presentation was “Green Audit & Green campus: Need of the hour” wherein he thoroughly addressed the issues which require immediate attention to attain sustainable development goals and their possible solutions.

zoom FDP-114 "Recent Advances in Basic and Appli... - Shared screen with speaker view" Download (392 MB)

Background & Preamble

“Business is not for money, it is for solving problems”

— Md. Yunis

Nobel Laureate (2008) Peace
Muhammad Yunus **social entrepreneur**, from **Bangladeshi banker, economist, and civil society leader who was awarded the Nobel Peace Prize for founding the Grameen Bank and pioneering the concepts of microcredit and microfinance.**

Dr. Narender Bhojak

Chat Messages

Search chat

Monika Goyal 01:03:08
MG Dr. Monika Goyal, SLC

Manju 01:03:13
M Dr. Manju Vashistha Govt PG College for Women Rohtak

DRVIMAL KUKRETI, G... 01:03:20
DK DRVIMAL KUKRETI, GOVT.DEGREE COLLEGE CHAUBATTAKHAL (UTTARAKHAND)

Puraniav 01:03:26

zoom FDP-114 "Recent Advances in Basic and Appli... - Shared screen with speaker view" Download (392 MB)

Which of the following is common in between following two pictures

Choice 1 <ol style="list-style-type: none">1. Sea2. Desert3. Number of people4. Types of Plants	Choice 2 <ol style="list-style-type: none">1. Calotropis2. Leptadenia3. Ziziphus4. Vaccinium
Choice 3 <ol style="list-style-type: none">1. Plants2. Desert3. People4. All of the above	Choice 4 <ol style="list-style-type: none">1. Iso flavanoid2. Minerals3. Geochemistry4. Anthraquinones

00:21:27 / 02:45:05

Speed

Dr. Narender Bhojak

Chat Messages

Search chat

Monika Goyal 01:03:08
MG Dr. Monika Goyal, SLC

Manju 01:03:13
M Dr. Manju Vashistha Govt PG College for Women Rohtak

DRVIMAL KUKRETI, G... 01:03:20
DK DRVIMAL KUKRETI, GOVT.DEGREE COLLEGE CHAUBATTAKHAL (UTTARAKHAND)

Puraniav 01:03:26

The session concluded with a formal vote of thanks, acknowledging the active participation of attendees and addressing their queries. Participants expressed their enjoyment of the informative and engaging session. The session ended with thanks to the speaker.

Day 2 - December 12, 2023

Session 2 (11:30 am to 01:30 pm)

Resource Person – Prof. Prabhakar Singh, Indian Institute of Technology, Banaras Hindu University

During the latter session, Prof. Prabhakar Singh, from IIT, BHU presented his lecture on "Viewing Charge Particle Dynamics through Conductivity Spectroscopy," in which he sheds light on a fundamental aspect of understanding particle dynamics and conductivity in materials. Throughout the session, Prof. Singh skilfully navigated through the complexities of conductivity spectroscopy, illustrating its significance in comprehending the behaviour of charged particles within various materials. His in-depth analysis and lucid explanation of the theoretical framework behind conductivity spectroscopy provided a strong foundation for the attendees to grasp its practical applications.

The screenshot shows a Zoom meeting interface. The main window displays a slide titled "Introduction: Ion conducting materials in view of Ion Dynamics". The slide lists five levels of ion-conducting materials: Level one: perfectly ordered crystals; Level two: crystals with defect; Level three: materials with disordered structures; Level 3a: ionic crystals with structurally disordered sublattices; Level 3b: ion-conducting glasses; Level 3c: materials above the glass-transition temperature; Level 3d: Micro-ionics and nano-ionics. A diagram illustrates these levels with various crystal and material structures. The slide is attributed to K. Funke, R.D. Banhatti, Solid State Ionics 177 (2006) 1551-1557. A small video window shows Prof. Prabhakar Singh. To the right, a chat window is open, showing messages from participants like Monika Goyal, Manju, and DR.VIMAL KUKRETI, G... The Zoom logo and meeting title "FDP-114 'Recent Advances in Basic and Appli...' - Shared screen with speaker view" are visible at the top.

The screenshot shows a Zoom meeting interface. The main window displays a slide titled "Conductivity spectroscopy: Four frequency regimes". The slide lists four frequency regimes: Impedance regime: 10^{-3} Hz to 10^7 Hz; Radio regime: 10^7 Hz to 10^9 Hz; Microwave regime: 10^9 Hz to 10^{12} Hz; Far infrared regime: 10^{12} Hz to 10^{14} Hz. A small video window shows Prof. Prabhakar Singh. To the right, a chat window is open, showing messages from participants like Monika Goyal, Manju, and DR.VIMAL KUKRETI, G... The Zoom logo and meeting title "FDP-114 'Recent Advances in Basic and Appli...' - Shared screen with speaker view" are visible at the top.

One of the remarkable aspects of Prof. Singh's presentation was his ability to bridge the gap between theoretical concepts and real-world applications. He elucidated how advancements in conductivity spectroscopy have contributed significantly to advancements in diverse fields of material science.

Day 3 - December 13, 2023

Session 1 (10:00 am to 11:30 am)

Resource Person - Prof. Satish Kumar from Deenbandhu Chhotu Ram University of science and Technology, Murthal, Sonipat, Haryana

On the third day of FDP, Prof. Satish Kumar from Deenbandhu Chhotu Ram University of science and Technology, Murthal, Sonipat, Haryana delivered his lecture on “Development of Bio-Active Materials (Dental & Bone Tissue Engineering Application)”. Glasses of the composition $P_2O_5-Na_2O-CaO-B_2O_3:Li_2O/ZrO_2/SrO$ are fabricated using the melt-quench technique. The selection of the ingredients in the current composition is based on their bioactivity qualities. The X-ray diffraction (XRD) patterns of the samples in their initial state did not show any diffraction peaks, indicating that the samples were amorphous prior to immersion.

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Faculty Development Program
on
Recent Advances in Basic & Applied Sciences 2023
11-16 December, 2023
(Shyam Lal College, Univ. of Delhi)

Development of Bio-Active Materials
(Dental & Bone Tissue Engineering Application)

Professor (Dr.) Satish Khasa
Director (R&D Cell)-2021-23
skhasa.phy@dcrustm.org

DEENBANDHU CHHOTU RAM UNIVERSITY
OF SCIENCE & TECHNOLOGY, MURTHAL (SONIPAT) - 131039, INDIA
(ESTABLISHED BY STATE LEGISLATIVE ACT NO. 29 OF 2006 &
REVISED UNDER SECTION 3(1)(b) OF THE U.C.I.C. ACT 1)

13-12-2023

Chat Messages

Search chat

Komal 27:22
Dr. Komal, Assistant Professor,
Manipal University Jaipur

Pooja Rana 27:24
Dr. Pooja Rana Assistant Professor
Guru Gobind Singh Inderparasth
University

Dr. Prem Lata Meena 27:32
Dr. Prem Lata Meena Assistant
Professor Department of Chemistry
Shyam Lal College University of

zoom FDP-114 "Recent Advances in Basic and Appli... - Shared screen with speaker view Download (279 MB)

Applications of TMI/RE doped and co-doped Glasses

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graph TD; A[Applications of TMI/RE doped and co-doped Glasses] --- B[Solid State Devices]; A --- C[Radiation Shielding]; A --- D[Optical Fiber Amplifiers]; C --- E[Optical Data Storage]; C --- F[Optical Communications]; D --- E; D --- F; E --- G[IR-Visible Up-converters]; F --- G;
```

00:11:07 / 02:22:31

Chat Messages

Search chat

Komal 27:22
Dr. Komal, Assistant Professor,
Manipal University Jaipur

Pooja Rana 27:24
Dr. Pooja Rana Assistant Professor
Guru Gobind Singh Inderparasth
University

Dr. Prem Lata Meena 27:32
Dr. Prem Lata Meena Assistant
Professor Department of Chemistry
Shyam Lal College University of

The session ended with thanks to the eminent speaker.

Day 3 - December 13, 2023

Session 2 (11:30 am to 01:30 pm)

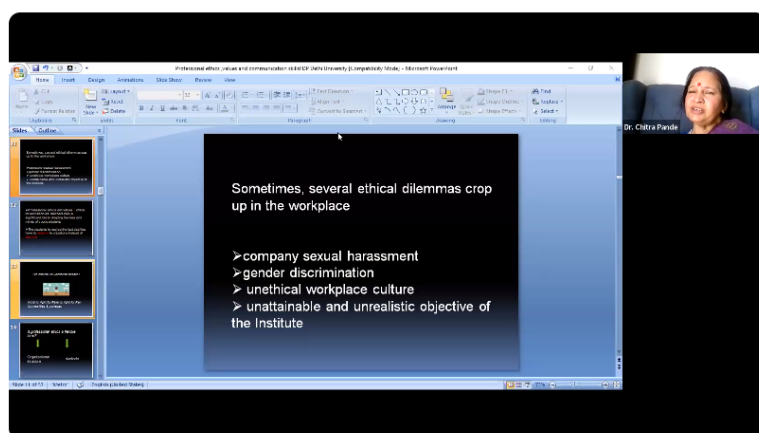
Resource Person - Prof. Chitra Pande from Kumaun University, Nainital

In the next technical session of DAY 3, Prof. Chitra Pande from Kumaun University, Nainital, gave a discourse to the attendees on “Professional ethics and communication skills”. In this interactive session, she beautifully explained all the professional ethics, values, their importance and their critical role in shaping Unnat or Vikasit Bharat by transforming higher education. She shared her vast experience and knowledge in this field by giving suitable examples and also by narrating interesting Folklores of different parts of globe.

zoom

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Sometimes, several ethical dilemmas crop up in the workplace

- > company sexual harassment
- > gender discrimination
- > unethical workplace culture
- > unattainable and unrealistic objective of the Institute

Chat Messages

Search chat

Komal 27:22
K Dr. Komal, Assistant Professor, Manipal University Jaipur

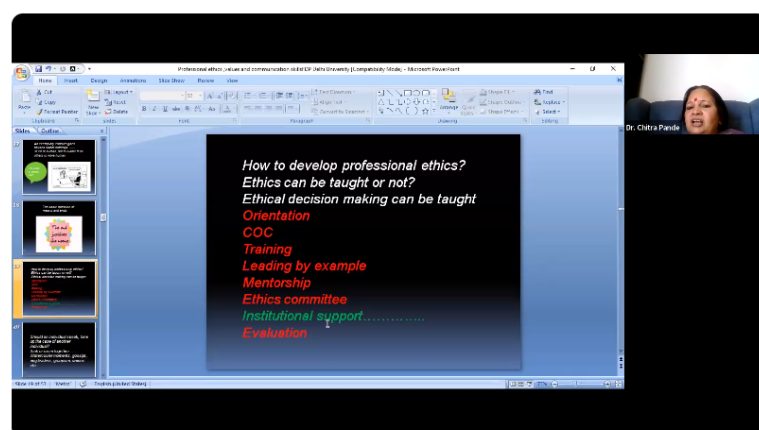
Pooja Rana 27:24
PR Dr. Pooja Rana Assistant Professor Guru Gobind Singh Inderparasth University

Dr. Prem Lata Meena 27:32
DP Dr. Prem Lata Meena Assistant Professor Department of Chemistry Shyam Lal College University of

zoom

FDP-114 "Recent Advances in Basic and Appli... - Shared screen with speaker view

Download (279 MB)



How to develop professional ethics?
Ethics can be taught or not?
Ethical decision making can be taught

- Orientation
- COC
- Training
- Leading by example
- Mentorship
- Ethics committee
- Institutional support.....
- Evaluation

Chat Messages

Search chat

Komal 27:22
K Dr. Komal, Assistant Professor, Manipal University Jaipur

Pooja Rana 27:24
PR Dr. Pooja Rana Assistant Professor Guru Gobind Singh Inderparasth University

Dr. Prem Lata Meena 27:32
DP Dr. Prem Lata Meena Assistant Professor Department of Chemistry Shyam Lal College University of

The session concluded with a formal vote of thanks, acknowledging the active participation of attendees and addressing their queries. Participants expressed their enjoyment of the informative and engaging session. The session ended with thanks to the eminent speaker.

Day 4 - December 14, 2023

Session 1 (10:00 am to 11:30 am)

Resource Person - Dr. Surbhi Gupta, Assistant professor of Physics from Motilal Nehru National Institute of Technology-Allahabad, Prayagraj

In the first session of Day 4, Dr. Surbhi Gupta, Assistant professor of Physics from Motilal Nehru National Institute of Technology-Allahabad, Prayagraj gave a detailed seminar on "Spintronics: Generation and Detection of Spin Current". She discussed the emerging field of low power devices which use spin quantum property of electron to do different functionalities. She also explained new paradigm of spintronic related application including neuromorphic computing and ultrafast communication. It was a learning and eye-opening session for all the participants.

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Chat Messages

Search chat

Dr. Yukti Monga 47:44
DY Dr YUKTI MONGA/ SLC

Dr. Kanika Solanki 48:13
DK KISHOR Kumar Prajapat, Senior Teacher, Bhattar GSSS Bikaner

DR.VIMAL KUKRETI, G... 49:40
DK Dr/Vimal Kukreti, Govt.Degree College Chaubattakhai Uttarakhand

Dt. Ompal Singh Yadav 49:57

zoom FDP-114 "Recent Advances in Basic and Appli... - Shared screen with speaker view Download (439 MB)

Chat Messages

Search chat

Dr. Yukti Monga 47:44
DY Dr YUKTI MONGA/ SLC

Dr. Kanika Solanki 48:13
DK KISHOR Kumar Prajapat, Senior Teacher, Bhattar GSSS Bikaner

DR.VIMAL KUKRETI, G... 49:40
DK Dr/Vimal Kukreti, Govt.Degree College Chaubattakhai Uttarakhand

Dt. Ompal Singh Yadav 49:57

The session concluded with a formal vote of thanks, acknowledging the active participation of attendees and addressing their queries. Participants expressed their enjoyment of the informative and engaging session. The session ended with thanks to the eminent speaker.

Day 4 - December 14, 2023

Session 2 (11:30 am to 01:30 pm)

Resource Person - Prof. Harsha Kharkwal, from Amity University, Noida.

In the next session, Prof. Harsha Kharkwal, from Amity University, Noida, delivered her technical knowledge and research on “Basics & advanced application of Mass Spectroscopy” in which she explained each and everything related to mass spectroscopy and its applications in scientific research. In her informative lecture, she also shed light on the instrumental parts of a mass spectroscope and the necessity of mass spectroscopy in daily life and while conducting the research work.

zoom

FDP-114 "Recent Advances in Basic and Appli... - Shared screen with speaker view

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Alkynes

- Alkynes typically
 - show a strong molecular ion peak.
 - cleave readily to form the resonance-stabilized propargyl cation or substituted propargyl cations.

3-Propynyl cation (Propargyl cation) $\text{HC}\equiv\text{C}-\text{CH}_2^+ \leftrightarrow \text{HC}=\text{C}=\text{CH}_2^+$

m/z	Relative Abundance (%)
27	~45
29	~35
39	~65
67	100
68	~10

Chat Messages

Search chat

Dr Yukti Monga 47:44
DY Dr YUKTI MONGA/ SLC

Dr. Kanika Solanki 48:13
DK KISHOR Kumar Prajapat, Senior Teacher, Bhattar GSSS Bikaner

DRVIMAL KUKRETI, G... 49:40
DK Dr/Vimal Kukreti, Govt.Degree College Chaubattakhal Uttarakhand

Dt. Ompal Singh Yadav 49:57

zoom

FDP-114 "Recent Advances in Basic and Appli... - Shared screen with speaker view

Download (439 MB)

Measures to Expand Application Fields

Introducing Mass Spectrometry for IVD Applications

In vitro diagnostics (IVD) is used to diagnose diseases by examining the blood, urine, stool, saliva, or other fluids (minimally invasive liquid biopsies).

Why Use Mass Spectrometry?

- It results in a smaller percent of false negatives and positives than conventional methods. (It measures the relevant molecules directly.)
- It enables simultaneous examination of multiple targets (measuring multiple target molecules at the same time).
- Low operating cost (It does not involve using a special reaction reagent.)
Mass spectrometry has been used for drug screening, forensic toxicology tests, and sports doping screening from an early stage. Operating cost is low, but issues remain with high initial investment cost, still required for operating the system and data analysis.

Examinations That Already Use Mass Spectrometry

- Newborn screening (NBS): Covered by Japanese national insurance for specific analysis
- Therapeutic drugs: Covered by insurance for managing drug administration by measuring drug concentrations in the blood
- Bacteriological testing: Covered by insurance for testing for microorganisms that can cause infectious diseases
- Testing for endocrine substances (Vitamin D and catecholamine). LCMS is anticipated as a potential testing method.

July 2014 Mass Spectrometry Business Presentation Materials

Chat Messages

Search chat

Dr Yukti Monga 47:44
DY Dr YUKTI MONGA/ SLC

Dr. Kanika Solanki 48:13
DK KISHOR Kumar Prajapat, Senior Teacher, Bhattar GSSS Bikaner

DRVIMAL KUKRETI, G... 49:40
DK Dr/Vimal Kukreti, Govt.Degree College Chaubattakhal Uttarakhand

Dt. Ompal Singh Yadav 49:57

At last, the organizers and participants expressed their gratitude to the distinguished speaker.

Day 5 - December 15, 2023

Session 1 (10:00 am to 11:30 am)

Resource Person – Prof. Parmendra Kumar Bajpai, Department of Pure & Applied Physics, Guru Ghasidas Vishwavidyalaya Bilaspur (C.G.) India.

In the first session of Day 5th, Prof. P.K. Bajpai commenced the session with a concise yet comprehensive introduction to nanoscience, establishing the foundational principles for the ensuing discussions. The talk delved into the distinctive properties of nanostructures, emphasizing their unique characteristics at the nanoscale and laying the groundwork for a deeper exploration. He elucidated the concept of quantum confinement, in great detail.

The screenshot shows a Zoom meeting interface. The main content is a presentation slide with the following text:

**Nanoscience and nanotechnology:
Conceptual understanding and Societal Applications**

P.K. Bajpai
Advanced Material's Laboratory
Department of Pure & Applied Physics,
Guru Ghasidas Vishwavidyalaya (A Central University)
Bilaspur (C.G.) 495 009 India
Mail: bajpai_pk1@gmail.com

At the bottom of the slide, there is a video player showing a small video of Prof. P.K. Bajpai. The Zoom interface includes a search bar for chat messages, a list of chat messages, and a download button for the screen recording.

The discussion expanded to different length scales, including the Bohr exciton radius, elucidating the quantum phenomena occurring at various levels and their significance in nanoscale physics.

The screenshot shows a Zoom meeting interface. The main content is a presentation slide titled "Model Quantum Confinement". The slide contains the following text:

Model ♦ Quantum Confinement

- ✓ ZnO has small effective masses → quantum effects can be observed for relatively large particle sizes
- ✓ Confinement-effects are observed for particle sizes <~8 nm
- ✓ TiO₂ has large effective masses → quantum effects are nearly unobservable

Below the text are two graphs. The left graph is for ZnO, showing the energy band structure (E_v and E_c in eV) and the exciton Bohr radius (λ_{excit} in nm) as a function of particle diameter (d in nm). The right graph is for TiO₂, showing the energy band structure and the exciton Bohr radius as a function of particle diameter. Both graphs show that the exciton Bohr radius is significantly larger than the particle diameter for TiO₂, indicating that quantum effects are nearly unobservable.

At the bottom of the slide, there is a video player showing a small video of Prof. P.K. Bajpai. The Zoom interface includes a search bar for chat messages, a list of chat messages, and a download button for the screen recording.

The presentation covered the density of states in bulk materials, quantum wells, quantum wires, and quantum dots, elucidating the variations in electronic properties across different nanostructures. The audience gained insights into electron concentration and joint density of states, deepening their understanding of the electronic behavior in nanostructured materials.

Day 5 - December 15, 2023

Session 2 (11:30 am to 01:30 pm)

Resource Person – Prof. Deepak Pant from Central university Himachal Pradesh

In the second session, Prof. Deepak Pant from Central university Himachal Pradesh, expounded his research and contribution on “Value addition in waste management research”. During his lecture he described the methodologies and technologies to convert waste to wealth. He also emphasized on the ban on single use plastics and recycling of polymeric waste to value added products.

The screenshot shows a Zoom meeting interface. The main content is a slide titled "Plastic management" with two bullet points:

- **Chemical/feedstock/tertiary recycling is a depolymerization technique in which long polymer chains are transformed into shorter oligomers, monomers and other chemicals by means of heat and chemical. It involves techniques like pyrolysis, gasification, catalytic cracking, hydrogenation etc.**
- **Quaternary recycling is about recovering the energy content of plastic waste.**

To the right of the slide is a chat window titled "Chat Messages" with a search bar and three messages:

- PR** Pooja Rana 56:02
Dr. Pooja Rana Assistant Professor
Guru Gobind Singh Indraprastha University
- DK** Dr. Kanika Solanki 56:04
Kishor Kumar Prajapat, Senior Teacher, Bhattar GSSS Bikaner
- DP** Dr. Prem Lata Meena 56:15
Dr. Prem Lata Meena Assistant Professor Department of Chemistry Shyam Lal College University of Delhi

Zoom logos and meeting title "FDP-114 'Recent Advances in Basic and Appli... - Shared screen with speaker view" are visible at the bottom.

The screenshot shows a Zoom meeting interface. The main content is a flowchart titled "Additives" with the following structure:

- Additives**
 - Thickening agents
 - Organic
 - Inorganic
 - Plasticizers
 - Biocides
 - UV stabilizers
 - Surface Active Agents
 - Wetting & Dispersing
 - Antifoam agents
 - Adhesion promoters
 - Catalytically Active
 - Special Effects
 - Anti-skinning
 - Corrosion inhibitors
 - Secondary Driers
 - Primary (Active) Driers

To the right of the flowchart is a chat window titled "Chat Messages" with a search bar and three messages:

- PR** Pooja Rana 56:02
Dr. Pooja Rana Assistant Professor
Guru Gobind Singh Indraprastha University
- DK** Dr. Kanika Solanki 56:04
Kishor Kumar Prajapat, Senior Teacher, Bhattar GSSS Bikaner
- DP** Dr. Prem Lata Meena 56:15
Dr. Prem Lata Meena Assistant Professor Department of Chemistry Shyam Lal College University of Delhi

Zoom logos and meeting title "FDP-114 'Recent Advances in Basic and Appli... - Shared screen with speaker view" are visible at the bottom.

The session concluded with a formal vote of thanks, acknowledging the active participation of attendees and addressing their queries. Participants expressed their enjoyment of the informative and engaging session. The session ended with thanks to the eminent speaker

Day 6 - December 16, 2023

Session 1 (10:00 am to 11:30 am)

Resource Person – Dr. Vinod Kumar Vashishta, Department of Chemistry, GLA University Mathura

In the first technical session of last day, Dr. Vinod Kumar Vashishta, Department of Chemistry, GLA University Mathura, shared his vast knowledge and expertise on “Chiral Liquid Chromatography- Past, Present and Future” in his lecture he described chirality in organic molecules, behavioural differences of enantiomers in chiral environment, their pharmacological profiles, fundamental of chiral chromatography and its advanced applications in separation of optical isomers.

zoom

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Download (679 MB)

The Thalidomide Tragedy

1950s: Thalidomide first marketed

1956: First birth defect reported

1961: Withdrawn from Australian market

SCANDAL - Thalidomide - Cover up of Thalidomide - Thalidomide - Thalidomide - Thalidomide

THE THALIDOMIDE TRAGEDY - Mother's ruin - Thalidomide - Thalidomide - Thalidomide

Chemical structures of Thalidomide and its enantiomers are shown.

Chat Messages

Search chat

komilla Suri 56:38

KS Dr. Komilla Suri, Associate Professor, Physics Department, SLC (M)

Dr. Kapil Mohan Saini 56:47

DK Dr. Kapil Mohan Saini Assistant professor Kalindi College

Dr. Ratna Singh 57:40

DR Dr. Ratna Singh, ABESIT College, Ghaziabad

Yukti monica 58:15

zoom

FDP-114 "Recent Advances in Basic and Appli... - Shared screen with speaker view

Download (679 MB)

Features of CDRs

- CDRs could be synthesized from inexpensive and easily available synthons in the laboratory,
- Containing good chromophoric moiety, reactive FG
- Require an easy synthesis process in the laboratory
- Demonstrate easy derivatization of analytes under mild conditions

A platform for developing CDRs:

- Cyanamic chloride (CC),
- 1,5-difluoro-2,4-dinitrobenzene (DFDNB),
- (S)-Naproxen (Npx) and
- (S)-Levofloxacin (Lfx) etc

Chat Messages

Search chat

komilla Suri 56:38

KS Dr. Komilla Suri, Associate Professor, Physics Department, SLC (M)

Dr. Kapil Mohan Saini 56:47

DK Dr. Kapil Mohan Saini Assistant professor Kalindi College

Dr. Ratna Singh 57:40

DR Dr. Ratna Singh, ABESIT College, Ghaziabad

Yukti monica 58:15

The session concluded with a formal vote of thanks, acknowledging the active participation of attendees and addressing their queries. Participants expressed their enjoyment of the informative and engaging session. The session ended with thanks to the eminent speaker

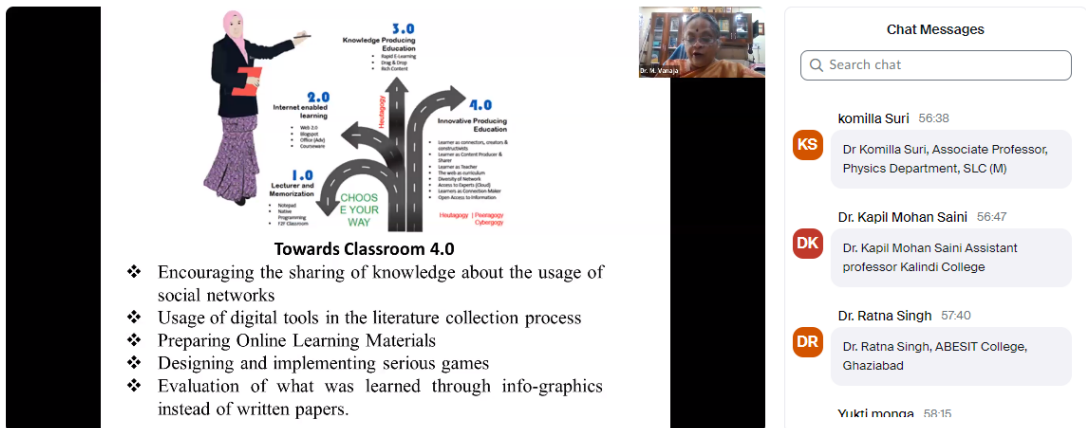
Day 6 - December 16, 2023

Session 2 (11:30 am to 01:30 pm)

Resource Person – Prof. M. Vanaja, from Maulana Aazad National Urdu central University, Hyderabad

During the last technical session this FDP, Prof. M. Vanaja, from Maulana Aazad National Urdu central University, Hyderabad delivered her expert lecture on” Innovation for effective classroom engagement” in which she alluringly explicated different pedagogical approaches, their significance and their modifications as per the demand of modern era. She also explained the ways to engage students effectively to the classroom, various modes of teacher-student leaning and the role of NEP in transforming higher education.

zoom FDP-114 "Recent Advances in Basic and Appli... - Shared screen with speaker view Download (679 MB)



The slide titled "Towards Classroom 4.0" features a central graphic with three upward-pointing arrows labeled 1.0, 3.0, and 4.0. The 1.0 arrow is labeled "Lecturer and Memorization" and lists "Lecturer", "Memorization", "Programme", and "FDP Content". The 3.0 arrow is labeled "Internet enabled learning" and lists "Web 2.0", "Digital Content", and "Digital Content". The 4.0 arrow is labeled "Innovative Producing Education" and lists "Student as researcher, creator & learner", "Teacher as facilitator & guide", "Student as teacher", "Quality of content", "Quality of method", "Quality of process", "Quality of content", "Quality of content", and "Quality of content". A central graphic says "CHOOS E YOUR WAY" and "Hologram / Hologram / Hologram".

Towards Classroom 4.0

- ❖ Encouraging the sharing of knowledge about the usage of social networks
- ❖ Usage of digital tools in the literature collection process
- ❖ Preparing Online Learning Materials
- ❖ Designing and implementing serious games
- ❖ Evaluation of what was learned through info-graphics instead of written papers.

Chat Messages

Search chat

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KS Dr. Komilla Suri, Associate Professor, Physics Department, SLC (M)

Dr. Kapil Mohan Saini 56:47

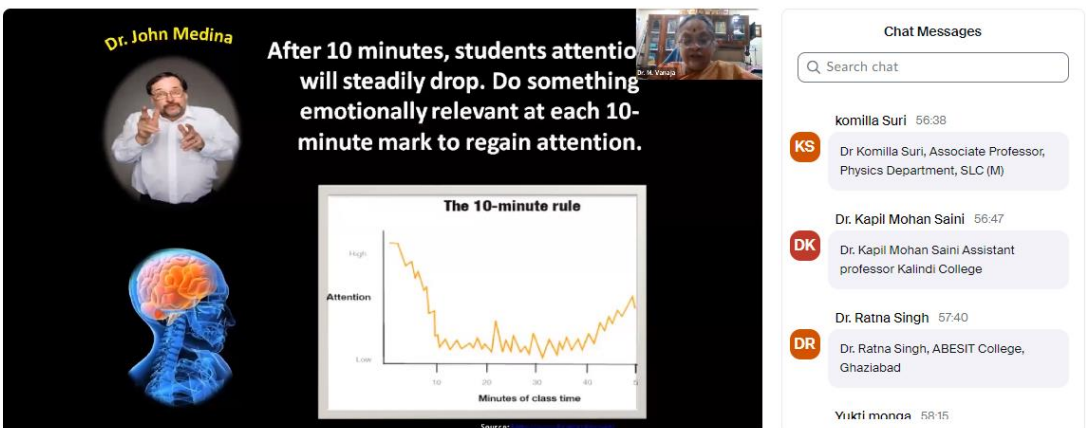
DK Dr. Kapil Mohan Saini Assistant professor Kalindi College

Dr. Ratna Singh 57:40

DR Dr. Ratna Singh, ABESIT College, Ghaziabad

Yukti monda 58:15

zoom FDP-114 "Recent Advances in Basic and Appli... - Shared screen with speaker view Download (679 MB)



The slide titled "The 10-minute rule" features a photo of Dr. John Medina and a line graph. The text says "After 10 minutes, students attention will steadily drop. Do something emotionally relevant at each 10-minute mark to regain attention." The graph shows attention levels over 50 minutes of class time, with a sharp drop at the 10-minute mark and subsequent fluctuations.

Dr. John Medina

After 10 minutes, students attention will steadily drop. Do something emotionally relevant at each 10-minute mark to regain attention.

The 10-minute rule

Attention

Minutes of class time

Chat Messages

Search chat

komilla Suri 56:38

KS Dr. Komilla Suri, Associate Professor, Physics Department, SLC (M)

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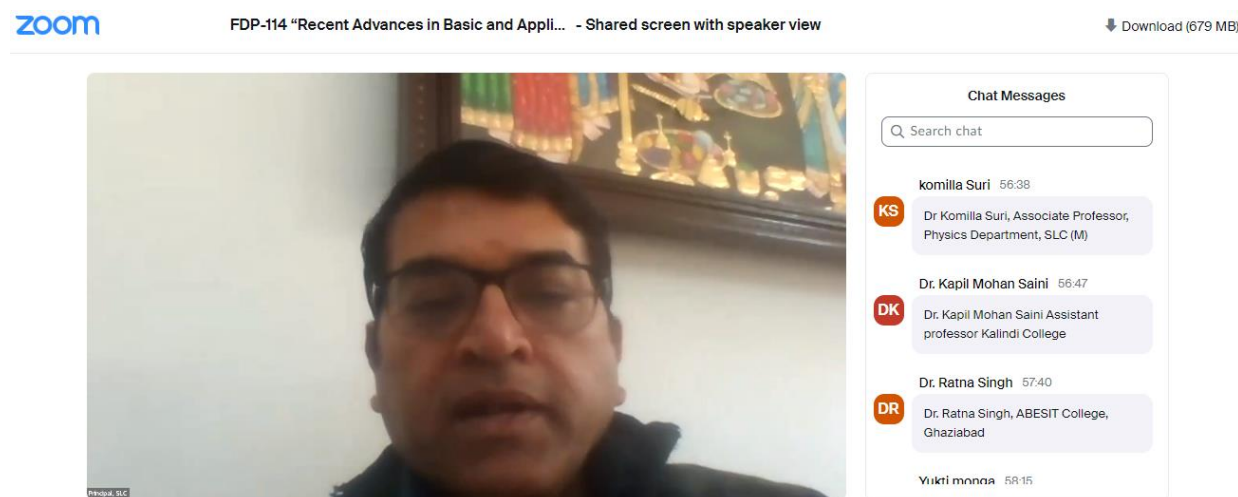
DR Dr. Ratna Singh, ABESIT College, Ghaziabad

Yukti monda 58:15

The technical sessions were concluded with the acknowledgment to the reputed speakers. After successfully completion of all the technical sessions a valedictory ceremony was organised.

Valedictory Ceremony

During this valedictory session, firstly the highlights, achievements and the details of every technical session of FDP were shared. Thereafter, Prof. Rabi Narayan Kar, Principal, Shyamlal College, addressed the participants and shared his views on conducted FDP.



The screenshot shows a Zoom meeting interface. At the top, the Zoom logo is on the left, the meeting title "FDP-114 'Recent Advances in Basic and Appli...' - Shared screen with speaker view" is in the center, and a "Download (679 MB)" button is on the right. The main video area shows Prof. Rabi Narayan Kar, a man with glasses, speaking. To the right is a "Chat Messages" panel with a search bar and a list of messages:

- komilla Suri 56:38: Dr. Komilla Suri, Associate Professor, Physics Department, SLC (M)
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- DR 57:40: Dr. Ratna Singh, ABESIT College, Ghaziabad
- Yukti monna 58:15

He also emphasized the necessity and significance of such programs for faculty members. Prof. A. K. Bhagi, President, Delhi University Teacher's association was the chief guest of valedictory session.



The screenshot shows a Zoom meeting interface. At the top, the Zoom logo is on the left, the meeting title "FDP-114 'Recent Advances in Basic and Appli...' - Shared screen with speaker view" is in the center, and a "Download (679 MB)" button is on the right. The main video area shows Prof. A. K. Bhagi, an older man with glasses, speaking. To the right is a "Chat Messages" panel with a search bar and a list of messages:

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- Yukti monna 58:15

During his speech he focused on multidisciplinary collaboration for conducting research and skill enhancement. The ceremony ended with vote of thanks.