

SOPHIA GIRLS' COLLEGE **(AUTONOMOUS), AJMER**



DEPARTMENT OF PHYSICS

2021-22

1. Two Days International Webinar on “Exploring the Properties of Materials at Nanoscale”

PATNA WOMEN'S COLLEGE **SOPHIA GIRLS' COLLEGE**
AUTONOMOUS AUTONOMOUS
PATNA UNIVERSITY

3rd Cycle NAAC Accredited at A Grade with CGPA 3.58/4 Re-Accredited 'A' Grade by NAAC(UGC)
'College with Potential for Excellence' (CPE) status accorded by UGC Affiliated to the Maharshi Dayanand Saraswati University, Ajmer

Two Day International Webinar “Exploring the Properties of Materials at Nanoscale”

Organized by
Department of Physics, Patna Women's College(Autonomous)
In collaboration with
Department of Physics, Sophia Girls College(Autonomous),Ajmer

PATRONS

Registration through link
<https://forms.gle/PVTEAPyBYcTi8LobA>
Platform:- Zoom

9th – 10th
July 2021
11:00A.M.-
1:30P.M.

CONVENOR **JOINT CONVENOR** **ORGANISING SECRETARY** **ORGANISERS**

Our Team

Dr. Sister Maria Rashmi A.C. Dr. Sister Pearl
Dr. Aprajita Krishna Dr. Deepmala Dr. Amrita Dr. Kavita Verma Dr. Rohit Singh

RESOURCE PERSONS: DAY1



Prof. Dr. Himanshu Narayan

Professor and Former Head,
Department of Physics and Electronics,
National University of Lesotho, Roma



Prof. Dr. Anchal Srivastava

Professor,
Department of Physics,
Banaras Hindu University

“Nothing in life is to be feared, it is only to be understood. Now
is the time to understand more, so that we may fear less.”
— Marie Curie

RESOURCE PERSONS: DAY2



Prof. Dr. Babu Lal Ahuja

Professor, Department of Physics,
University College of Science,
Mohanlal Sukhadia University ,
Udaipur, Rajasthan



Prof. Prakash Chandra Agrawal

Principal and Professor of Physics,
Regional Institute of Education(N.C.E.R.T),
Bhubneshwar, Odisha



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*International Webinar on
"Exploring the Properties of Materials at Nanoscale"*

Organised by

*Department of Physics, Patna Women's College(Autonomous)
In collaboration with
Department of Physics, Sophia Girls College(Autonomous),Ajmer*

July 09th & July 10th, 2021

Day 1 – 09th July, 2021(Friday)

Opening Session: 11:00A.M. – 11:15A.M.

Moderator – Dr. Aparajita Krishna
Head, Dept. of Physics, Patna Women's College

1st Technical Session: 11:15A.M. – 12Noon

Resource Person: Prof. Dr. Himanshu Narayan
Professor and Former Head, National University of Lesotho, Roma

Topic: Wonder of Nano-Science & Nanotechnology: Wastewater
Treatment to Efficient Batteries

2nd Technical Session: 12:15P.M. –1:00P.M.

Resource Person: Prof. Dr. Anchal Srivastava
Professor, Banaras Hindu University

Topic: Journey from eye to electron microscope

Vote of Thanks: 1:15P.M. – 1:30P.M.

Dr. Amrita
Assistant Professor, Patna Women's College

Day 2 – 10th July, 2021(Saturday)

Opening Session: 11:00A.M. – 11:15A.M.

Moderator –

1st Technical Session: 11:15A.M. – 12Noon

Resource Person: Prof. Dr. Babu Lal Ahuja

Professor, University College of Science, Udaipur

Topic: Study of electronic response using inelastic scattering and DFT calculations

2nd Technical Session: 12:15P.M. –1:00P.M.

Resource Person: Prof. Prakash Chandra Agrawal

Principal and Professor of Physics, Regional Institute of Education (N.C.E.R.T), Bhubneshwar

Topic: Metallic Glasses to Bulk Metallic Glasses: Emerging Materials (Development, Structural Science and Technological Applications)

Vote of Thanks: 1:15P.M. – 1:30P.M.

- **Date:** 9th and 10th July 2021
- **Total Number of the Participants:** 289
- **Mode:** Online (Google Meet)
- **Learning Outcome:** To Provide a platform for Research Scholar and Teachers so that there is enhancement of their knowledge towards the field of Nanotechnology.
- **Report:**



Two Days International Webinar
on
**“Exploring the Properties of Materials at
Nanoscale”**



Organised by Department of Physics,
PATNA WOMEN'S COLLEGE
AUTONOMOUS
PATNA UNIVERSITY
3rd Cycle NAAC Accredited at 'A' Grade with CGPA 3.58/4

&

Department of Physics,
SOPHIA GIRLS' COLLEGE, AJMER
AUTONOMOUS
NAAC Accredited at 'A' Grade

A two-day international webinar entitled **“Exploring the Properties of Materials at Nanoscale”** was co-organized by the Department of Physics, Patna Women's College (autonomous) and Sophia Girls' College (autonomous) on the 9th and 10th of July 2021. The webinar was sincerely patronised by **Dr Sister M. Rashmi A.C., Principal**, Patna Women's College and **Dr Sister Pearl, Principal**, Sophia Girls' College. **Dr Aprajita Krishna** and **Dr Deepmala** jointly convened the program. **Dr Amrita** was the organising secretary and Dr Kavita Verma and Dr

Rohit Singh were the organisers of the webinar. A total of ca. 289 participants registered for the program.

Following the prayer, the second day started with the technical session. It commenced with the **moderation** by **Dr Deepmala**, the **Joint Convenor**, where the first resource person of the session, **Prof. Dr Babu Lal Ahuja**, Professor, University College of Science, Mohanlal Sukhadia University, Udaipur, was formally introduced. The topic of his talk was “**Study of Electronic Response Using Inelastic Scattering and DFT Calculations**”. The presentation took the participants from the basics of the Compton Effect, through its quantum mechanical relevance to devising and utilization of Compton Scattering Technique. It further provided a glimpse into exploring the corroboration of experimental findings and theoretical calculations using Density Functional Theory.

Further, **Dr Sandhya**, **Head, Department of Botany, Sophia Girls’ College, Ajmer** introduced the attendees to the fourth and last resource person of the webinar, **Prof. Dr Prakash Chandra Agrawal**, Principal and Professor of Physics, Regional Institute of Education (N.C.E.R.T.), Bhubaneswar. The topic of his talk was “**Metallic Glasses to Bulk Metallic Glasses: Emerging Materials**”. In his talk, Prof. Agrawal talked about the basics and his research findings in the field of metallic glasses. His talk intrigued the participants with many of the interesting properties that metallic glasses exhibit. Moreover, he also showed various unusual properties of these materials and their applications in a plethora of fields.

The second and the last day of the two-day webinar concluded with a **valedictory speech** by **Dr Sister Pearl** on the relevance of these webinars in the current world scenario. The vote of thanks was addressed by **Dr Deepmala** with a positive impression of such a fruitful and productive webinar. The participants were thankful to the patrons, convenors and webinar organisers for giving them this platform to get acquainted with the current research activities being carried out across Indian and the globe.

Joint Convener
Dr. Deepmala

Associate Professor and Head
 Department of Physics
 Sophia Girls' College
 (Autonomous), Ajmer

Two Days International Webinar
"Exploring the Properties of Materials at Nanoscale"

Organized by Department of Physics, Patna Women's College/Autonomous in collaboration with Department of Physics, Sophia Girls College/Autonomous/Ajmer

DATE: 28-29 July 2021
TIME: 11:00A.M. - 1:30P.M.

RESOURCE PERSONS : DAY 1

Prof. Dr. Vinod Kumar Narasimhan
 Professor and Former Head, Department of Physics and Electronics, National University of Leszcho, Roma

Prof. Dr. Anchal Srivastava
 Professor, Department of Physics, Banarus Hindu University

"Nothing in life is to be feared, it is only to be understood. Now is the time to understand more, so that we may fear less."
 — Marie Curie

RESOURCE PERSONS : DAY 2

Prof. Dr. Babu Lal Ahuja
 Professor, Department of Physics, University College of Science, Moharaj Sukhadia University, Udaipur, Rajasthan

Prof. Prakash Chandra Agrawal
 Principal and Professor of Physics, Regional Institute of Education (N.C.E.R.T.), Bhubaneswar, Odisha

Nanoscience: Understanding science at a nano-meter scale

Why doils or break a material to get its pieces within the nanometer range?
 - Because it will help increase the surface area available...
 Let us consider this example...

Topics

1. General introduction
2. Specific Topics
 - I. Research work 1: Waterwater treatment: Photocatalytic degradation of pollutants (TiO₂ Based Nanocomposites)
 - II. Research work 2: Electrochemical/Efficient battery electrodes (Li₂FeCO₃, Bi₂O₃ Based Nanocomposites)
 - III. Research work 3: Self-heal less irradiation induced nano-grains formation in CNTs
3. Further work: Possibilities of Collaboration

Three types of guns

	Tungsten	LaB ₆	FE
Max. Beam Current (nA)	1000	1000	1000
Normalised brightness (C)	1	10-30	1.0
Energy spread (eV)	1.5	1.0	1.0
Virtual source size	30-100 μm	6-80 μm	6-80 μm
Required Vacuum (Torr)	10 ⁻⁴	10 ⁻⁴	10 ⁻⁴
Temperature (K)	2700	3000	3000
Life time (hr)	60-200	1000	1000
Normalized Price (\$)	1	10	10

Webinar On "Investigating the Properties of Materials at Nanoscale" Held At Patna Women's College

@Garima Poddar

The webinar is being co-coordinated by the Department of Physics, Patna Women's College (self-governing) and Sophia Girls' College (self-sufficient) on the ninth and tenth of July 2021. The online course is as a rule truly disparaged by Dr Sister M. Rashmi A.C. Principal, Patna Women's College and Dr Sister Pearl, Principal, Sophia Girls' College. Dr Aprajita Krishna and Dr Deepmala jointly convening the program. Dr Amrita is the getting sorted out secretary and Dr Kavita Verma and Dr Rohit Singh are the coordinators of the online class. An aggregate of ca. 250 members enlisted for the program and ca. 200 members went to for



the main day of the online class. The primary day began with a debut address by Dr Krishna, Head, Department of Physics and Dean, National and International Collaborations Coordinator, Patna Women's College, the Convenor of the program. She officially

expanded her appreciation to Dr Sister M. Rashmi A.C., Principal, Patna Women's College and Dr Sister Pearl, Principal, Sophia Girls' College, for empowering the association of a deductively edifying worldwide online course. Following the debut discourse, a wel-

comed to by Dr. Sister M. Rashmi and a prologue to the subject of the online course was given by Dr Sister Pearl. The specialized meeting initiated with the moderation by Dr Amrita, the Organising Secretary, where the principal asset individual of the session, Prof. Dr Anchal Srivastava,

Professor, Banaras Hindu University was officially presented. As the topic of the online class was properties of materials at the nanoscale, Prof. Srivastava acquainted the participants with the intricate details of electron microscopy. The subject of the discussion was "Excursion from Eye to Electron Microscope". The show gave a brief look into electron microscopy which is a fundamental device to describe materials of nanoscale measurements. Following the inquiry answer meeting to the principal discussion of the webinar, Dr Amrita introduced the participants to the second asset individual of the webinar, Prof. Dr Himanshu Narayan,

Professor and Former Head, National University of Lesotho, Roma. The subject of the discussion was "Miracle of Nanoscience and Nanotechnology". In his discussion, Prof. Narayan discussed his exploration with different materials that display imminent applications in the fields of wastewater treatment, electrocatalysis and use of quick weighty particles in incorporating nano-grains of materials. After the discussion, a post-show question-answer meeting was led. The principal day of the two-day online class closed with a statement of gratitude tended to by Dr. Amrita and with a ton of eagerness and inspirational perspective among the participants for another useful day.

सार्वजनिक परिवहन बस में मास्क नहीं लगाने तथा मनमाना भाड़ा वसूली के विरुद्ध सभी जिलों में चला विशेष जांच अभियान

@Ji Reporter



सार्वजनिक परिवहन के यहाँनों में मनमाना भाड़ा वसूली के विरुद्ध जनियार को सभी जिलों में विशेष जांच अभियान चलाया गया है। इसमें बस स्टैंड एवं अटिटे स्टैंड से सार्वजनिक परिवहन के यहाँनों के खुलने से पूर्व जांचियों का फीटिकेक किया गया और शिकायत मिलने के बाद संबंधित बस मासिक/बस चालक पर कार्रवाई की गई।

परिवहन सचिव श्री संजय कुमार अग्रवाल ने बताया कि बसों में मनमाना भाड़ा वसूली को लेकर कई जिलों से शिकायतें मिल रही थीं। इस पर कार्रवाई के लिए सभी जिलों में विशेष जांच अभियान चलाया जा रहा है। जांच में मनमाना भाड़ा वसूली को रोकना और सार्वजनिक परिवहन के यहाँनों से सफर करने वाले यात्रियों से यकीनन किया जा रहा है। जांच में मनमाना भाड़ा वसूली को रोकना और सार्वजनिक परिवहन के यहाँनों से सफर करने वाले यात्रियों से यकीनन किया जा रहा है। जांच में मनमाना भाड़ा वसूली को रोकना और सार्वजनिक परिवहन के यहाँनों से सफर करने वाले यात्रियों से यकीनन किया जा रहा है।

पर जांच कर कार्रवाई का निर्देश दिया गया है। जिलों में जिलाधिकारी के नेतृत्व में जिला परिवहन पदाधिकारी, एमपीआई और ईएसआई द्वारा यह सफर जांच अभियान चलाया गया। अभियान के दौरान रेट्रोलो विभिन्न चौक-पैराडों पर अटिटे एवं बसों में मास्क व सौरात डिस्टेंसिंग को जांच कर जांचियों का उत्प्रेक्षण करने वाले पर कार्रवाई की गई। जांच के क्रम में भाड़ा से संबंधित जांचियों का फीटिकेक भी किया गया। जांच पदाधिकारी ने बस कंडक्टर एवं अटिटे चालक को स्पष्ट निर्देश दिए कि यकीनन किया जा रहा है। जांचियों ने जांच में मनमाना भाड़ा वसूली को रोकना और सार्वजनिक परिवहन के यहाँनों से सफर करने वाले यात्रियों से यकीनन किया जा रहा है।

अप्प दीपो भव-35 असर क्यों नहीं करती हैं बातें ?

दिलीप कुमार



आजकल हर घर में अंधिभावक शिकार करने मिल जाते हैं कि बच्चे दिन-रात मोबाइल पर लगे रहते हैं। बच्चे हमारे कोई बात नहीं सुने। इसे तरह कई घरों में पति को पत्नी से शिकार है तो कई घरों में पत्नी को अपने पति से शिकार है कि वह हमारी बात सुने ही नहीं। अपनी बात न सुने जाने को शिकार एक बड़ी समस्या बन गई है। कई लोग इसी शिकार के साथ दिन को शुरूआत करते हैं तो कई लोग बातचीत का क्रम इस शिकार के साथ ही प्रारंभ करते हैं कि आजको तो हमारा खाना ही नहीं है। यदि सामने वाला फोन नहीं था फिर क्या करे तो कुछ लोग शिकार करते हैं कि अगर हमें कभी फोन करते ही नहीं है।

यदि हमें पसंद नहीं है, बातचीत करने वाले के शारीरिक अंदाज और आँखों का भाव यदि हम पसंद नहीं करते हैं तो फिर कोई किन्ती भी अच्छी बात क्यों न कर ले, उसे ग्राह्य कर पाने में परेशानी होती है। वैसी बातें हम सुन भी लें तो फिर बाद नहीं रख पाते हैं। बानी बातें सुकर भी अनसुनी ही जाती हैं। ऐसी बातों पर अमल करना तो बहुत दूर की बात होती है। जो लोग अपने जीवन में मन, रक्त और कर्म से एक प्रकार का व्यवहार करते हैं, उनको बातें ज्यादा असरकारी होती हैं। आजकल हर घर को यहाँनी एक जैसी हो गई है।

मोबाइल फोन पर व्यस्त रहने हैं और बच्चों से अपेक्षा करते हैं कि वह मोबाइल का इस्तेमाल न करें। जहाँर सी बात है कि ऐसी परिस्थिति में बच्चे सुने नहीं। जब हमारे कर्म और उपदेश में अंतर होता है, तब मनु से निकले हुए शब्दों को हमारा कर्म ही काटता चला जाता है। बच्चों को यदि हम शिकारते हैं- सत्यमेव जयते और दिन भर खुद ही खुद बोलते रहते हैं तो बच्चा झूठ बोलना ही सीखेगा। हम अपने माँगी-सँगीयों को परेशान करने की नसीहत देते रहें, लेकिन धैर्यक शिकारियों में स्वयं को सँगीय रखें तो हमारे सँगी-सँगी हमसे भिन्नग करे हुए ग्राह्य कर पाने में परेशानी होती है। अगरदृष्टक बातें करने से पहले वह सुनिश्चित कर देना जल्दनी है कि हम उन बातों में स्वयं विश्वास रखेंगे हैं या नहीं। जो प्रेमपादक बातें हम दूसरों के लिए रख रहे हैं, उन पर हम खुद अमल करते हैं या नहीं। शिकार और कर्म में जितनी ज्यादा भिन्नता होती है, हमारी बातों का असर उतना ही कम होता है। फिर हम परेशान होते रहते हैं कि हमारी बातें कोई

Certificate of Appreciation



THIS IS PRESENTED TO
Prof. (Dr.) Babu Lal Ahuja



Department of Physics

Mohanlal Sukhadia University, Udaipur

for being a Resource person in the Two Day International Webinar on

“Exploring the Properties of Materials at Nanoscale”

held on 9th & 10th July, 2021, *Organized by Department of Physics, Patna Women's College, Autonomous, Patna University* in Collaboration with *Department of Physics, Sophia Girls College, Autonomous, Ajmer.*

M. Rashmi KC

Dr. Sister M. Rashmi A. C.
Principal,
Patna Women's College

Aprajita Krishna

Dr. Aprajita Krishna
Convenor

Deepmala

Dr. Deepmala
Jt. Convenor

Sr Pearl

Dr. Sister Pearl
Principal,
Sophia Girl's College

<https://docs.google.com/spreadsheets/d/1Ja0PQexXYQFB-Wagouy23mzqfGIS6rSYMk9TQTgww-8/edit?usp=sharing>

Deepmala

Head
Department of Physics
Sophia Girls' College
(Autonomous), Ajmer

2. Working Project on Sanitizing Machine
(Best Out of Waste)



Sophia Girls' College
(Autonomous),
Ajmer

DEPARTMENT OF PHYSICS
KALAM-THE SCIENCE FORUM

Working Project on
Sanitizing Machines
(Best out of Waste)

Date: 24th September 2021
Time: 10:00 A.M.

Venue: Room No.69
Sophia Girls' College
(Autonomous), Ajmer

- **Date: 24 September 2021**

- **Total Number of the Students:** 76
- **Venue:** Room No.69, Sophia Girls' College (Autonomous), Ajmer
- **Learning Outcome:** To induce and prepare the students minds so that they can prepare technology even by the waste material.
- **Report:** An activity was organised under 'Kalam-The Science Forum' working project on Sanitizing Machines. This topic is a part of curriculum in B.Sc. II year syllabus. During the Covid pandemic, sanitizing machines were used for contact-less disinfection of Corona Virus by the use of sanitizers. All students worked in their peer groups on their models very sincerely .Students completely placed their hard work and endeavour to complete their work. Our Principal Sister and all other teachers appreciated the hard work of the students and for the successful working of all sanitizing machines. Total of 76 students took part in the project.





Deepmal
Head
Department of Physics
Sophia Girls' College
(Autonomous), Ajmer

3. Learning License and PUC Check



*Kalam - The Science
Forum*

Sophia Girls' College (Autonomous)
Ajmer

is organizing

**A
POLLUTION UNDER CONTROL
& LEARNING LICENSE
CAMP**

on
22nd October 2021
9:30 AM - 2:30 PM
**VENUE - SOPHIA GIRLS' COLLEGE
(FIELD)**

Register at:
<https://forms.gle/Fw7Gw2mDMu6M4dNE8>

Documents required for Learning license:

- 1. Class 10th Marksheet**
- 2. Aadhar Card**
- 3. Scanned Signature**
- 4. Photograph (Soft copy)**

**Venue & timings: Computer Lab 1
(1:30- 3:30 pm)**

***For queries contact:
Dr. Deepmala, Co-ordinator,
Environment & Energy Audit
Committee
Mob. No. - 6375389953***

Kindly note-
***Minimum Charges for-**
PUC check- Rs. 50/-
Learning License registration- Rs. 200/-

- **Date:** 22 October 2021
- **Total Number of the Students:** 103
- **Venue:** Sophia Girls' College (Autonomous), Ajmer
- **Learning Outcome:** To fulfil the duties of students towards the environment.
- **Report:** As driving license is mandatory, a programme was organised by the College Authorities, for the College students to make the online registration for their learning license in the premise. This was conducted by the RTO, Ajmer. Students' filled online form for their registration and instructions were given by instructor .On the same day along with above programme, PUC checking was

also organised for the students and staffs to get their vehicle checked that it follows the standard pollution regulation range.

