



MANIPAL UNIVERSITY
JAIPUR



Issue: 3

DECEMBER | 2024

PRATHAM

Physics Research Advancements by Thoughtful Humankind and their Achievements Miscellany
Quarterly Newsletter



PRATHAM

Research Spotlights

Best Researcher of the month



Dr. Pushendra Kumar
| Aug |



Dr. Debanjan Bhattacharjee
| Oct |

Events

Dr. Aniruddha Mondal (Associate Professor in the Department of Physics-NIT Durgapur) delivered an expert lecture on "Thermochromic Materials and Their Applications in Space." A distinguished researcher in material science, Dr. Mondal specializes in functional nanomaterials and their advanced applications, contributing significantly to the field of nanotechnology and space research.

Date: 19-12-2024

Convener- **Dr. Nilanjan Halder**



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Industrial Talk

The Department of Physics at Manipal University Jaipur organized the “Academia-Industry Symbiotic Alliance (AISA)” webinar to foster collaboration and knowledge exchange between academia and industry. The initiative aims to enhance the synergy between the Department of Physics, MUJ, and the industry. AISA will host a series of workshops and seminars featuring experts from both industry and technical institutes. The webinar's talk was titled “Introduction to Excimer Lasers and Applications.”

Academia-Industry Symbiotic Alliance (AISA)
Department of Physics, Manipal University Jaipur
Presents
Webinar on

“Introduction of Excimer Lasers and Applications”

Mr. Rajneesh Vishwakarma
Senior Vice President (Service)
Laser Science Services PVT. Ltd., Mumbai.

Event Details
27th August 2024
2:15 PM to 3:10 PM
MS team platform

Registration is free. E certificate will be provided to all the registered attendees. The event is open for UG/PG students/Research scholars/Professionals.

Registration link & QR code
<https://forms.office.com/r/gSSifa40nx>

Conveners:
Dr. Anupam Sharma
Dr. Niranjan Halder

AISA Webinar

35:09

44

Attendees (12)

- Abhik Mukherjee (Guest) Meeting guest
- Abhishek Pandey (MUJ - Jaipur) Meeting guest
- Anas Shaikh (Guest) Meeting guest
- Andreea (Guest) Meeting guest
- Aniket (Guest) Meeting guest
- Anushka Chatt... (Guest) Meeting guest
- Archana Bharat... (Guest) Meeting guest
- Ansh (Guest) Meeting guest
- ASHISH KUMAR (Guest) Meeting guest

**LASER SCIENCE PAN INDIA
INSTALLATIONS BASE: 3000+
LASER SYSTEMS**

- EXCIMER LASERS: 200 nos.
- Femtosecond Amplifiers: 40 nos.
- TW Lasers: 3 nos.
- CW lasers: 100 nos.
- Nano Sec Machining systems: 6 nos.
- PW Laser: 1 no.

Optics, Camera and com...
Dahmi Kalan, Rajasthan, India
RHV7+2C4, Dahmi Kalan, Rajasthan 303007, India
Lat 26.842805°

The Department of Physics at Manipal University Jaipur hosted the "Academia-Industry Symbiotic Alliance (AISA)" webinar on 4th December 2024. The event focused on fostering collaboration between academia and industry. The talk, titled "Bridging Innovation: Advancing Laser Technologies Through Industry-Academia Collaboration," aimed to enhance synergies through workshops and seminars.

Academia-Industry Symbiotic Alliance (AISA)
Department of Physics, Manipal University Jaipur
Presents
Webinar on

“Bridging Innovation: Advancing Laser Technologies Through Industry-Academia Collaboration”

Mr. Vardhman Shah
INDU Laser
Hadapsar, Pune

Conveners:
Dr. Sathi Sharma
Dr. Sushil Kumar Jain

Event Details
4th December 2024
2:00 PM to 3:00 PM
MS team platform

Registration is free. E certificate will be provided to all the registered attendees. The event is open for UG/PG students/Research scholars/Professionals.

Registration link & QR code
<https://shorturl.at/Pgltt>

Academia-Industry Symbiotic

01:29:13

Your microphone is muted
Press Ctrl+Shift+M to unmute your mic, or press and hold the Ctrl+Spacebar.

LASER type

Laser Type	Wavelength
UV	10 – 400 nm
Visible	400–700 nm
Near-IR	700–1400 nm
Mid-IR	1400–3000 nm
Far-IR (Terahertz)	>3000 nm

Visible spectrum: 400 nm - 800 nm

Diagrams showing various laser types and their wavelengths:

- Excimer Laser (e.g., 193, 248, 308 nm)
- Argon Ion Laser (488, 514 nm)
- He-Ne Laser (632 nm)
- Diode Laser
- He-Ne Laser (632 nm)
- Frequency doubled He-Ne Laser (332 nm)
- He-Ne Laser (355 nm)
- He-Ne Laser (1064 nm)
- Er:YAG Laser (2.9 μm)
- CO₂ Laser (10.6 μm)
- He:YAG Laser (2.1 μm)

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Guest Lecture

Prof. Ivan Castillo from the **University of Puerto Rico, San Juan, USA**, delivered a distinguished lecture at the one-day International Symposium on **“Lithium-Sulfur (Li-S) Batteries”**, hosted by the Department of Physics, School of Basic Sciences, Manipal University Jaipur. The event, aimed to explore advancements in Li-S battery technology, fostering collaboration and knowledge exchange in this innovative field of energy storage.

MANIPAL UNIVERSITY JAIPUR
DEPARTMENT OF PHYSICS
Presents
ONE-DAY INTERNATIONAL SYMPOSIUM
Lithium-Sulfur (Li-S) Batteries

Speaker: Prof. Ivan Castillo
Department of Physics
University of Puerto Rico-USA

Convener:
Prof. (Dr.) Sushil Kumar Jain

Event Details
22nd November 2024
11:30 AM to 1:00 PM
AB1 | Room no. 307



Alumni Talk

"Connecting the Past and Present: Alumni Talk at the Physics Department" The Physics Department at Manipal University Jaipur organized an insightful alumni talk, fostering meaningful connections between past graduates and current students. The event provided valuable career guidance and a platform for knowledge exchange, strengthening the bond within the university's physics community.

MANIPAL UNIVERSITY JAIPUR

Department of Physics in association with Directorate of Alumni Relations and Manipal University Jaipur alumni association organizing
ALUMNI TALK

28th November 2024 || 3:00 -3:30 pm (IST)
Venue : Board Room, AB1, FB5, MUJ (Offline)

Registration link :
<https://shorturl.at/wa1JU>

Convenors –
Dr. Ashok Kumar Mondal
Dr. Saikat Chattopadhyay

Dr. Mukesh Saran
Assistant Professor, Department of Health Science, University of People California, USA



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Achievements



Ms. Karishma Sharma (Research Scholar)

Paper Title: DFT investigation of the structural stability and optoelectronic properties of RB2AGBICL6 : A leading perovskite for solar cell

Conference: International Conference on Materials and Thermophysical Properties (ICMPT-2024)

Mr. Sandeep Kumawat (Research Scholar)

Conference: International Conference on Recent trends in Applied & Material Science (RAM-2024)

Event: School on Gamma Ray Instrumentation and Analysis - 2024 IUAC, New Delhi



Mr. Rohan Santosh Pandhre (BSc SEM-4)

Paper Title: A comprehensive study of classical liquid drop model of nucleus and modified macroscopic liquid drop model

Conference: International Conference on Recent trends in Applied & Material Science (RAM-2024)

Ms. Deepika Maan (Research Scholar)

Poster Title: Optimization of photocatalytic response for carbon nanotube - integrated metal - organic frameworks

Conference: International Conference on Materials and Thermophysical Properties (ICMPT-2024)



Ms. Shefali Pareek (Research Scholar)

Chapter Title: In-vivo models in tissue engineering, personalized therapies and regenerative medicine

Book Entitled: Fundamental of Translational Tissue Engineering

Ms. Kritika Garg (Research Scholar)

Paper Title 1: Theoretical studies and temperature - dependent Raman spectroscopy of Schiff's bases 5O.12 liquid crystalline compound (Journal of Molecular Structure **IF-4.0**) (Q1)

Paper Title 2: A DFT analysis of thermodynamical, structural and non-linear optical properties of liquid crystalline compounds (5O.m, m= 14, 16) (Journal of Molecular Liquids **IF-5.3**) (Q1)



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Mr. Akash (Research Scholar)

Paper Title: Band gap tuning in calcium hydroxide-nitrate nanocomposite materials (Journal of Materials Science: Materials in Electronics)

Ms. Karishma Jain (Research Scholar)

Poster Title: Study on photocatalytic response of MWCNT/cadmium oxide nanocomposites

Conference: International Conference on Materials and Thermophysical Properties (ICMPT-2024)



Ms. Tulip Ghosh (BSc SEM-4)

Summer Internship Topic: Current market scenario and consumer behavior

Training Program: Moms Home, Durgapura, Jaipur

Mr. Ashish Kumar (Research Scholar)

Poster Title: Analytical approach on photocatalytic response of graphite intercalated SnO₂ nanocomposites

Conference: International Conference on Materials and Thermophysical Properties (ICMPT-2024)



Ms. Shachi Pachauri has defended her thesis titled "**Study of Various Instabilities and Propagating Waves in Inhomogeneous Magnetized Plasmas Under The Effect of Recombination**" on 27-09-2024 under the supervision of **Dr. Kamakhya Prakash Misra**.

Mr. Shiva Shakti Singh has defended his thesis titled "**Study of Instabilities in Magnetized Quantum Plasmas Considering Fermi Dirac Distribution Along with Statistical Pressure**" on 25-11-2024 under the supervision of **Dr. Kamakhya Prakash Misra**.

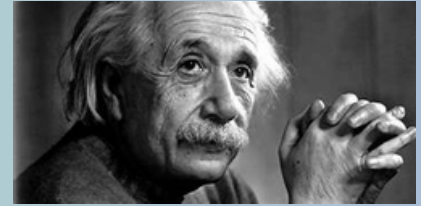


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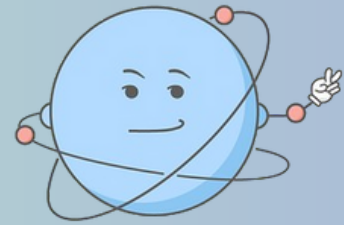
Riddles



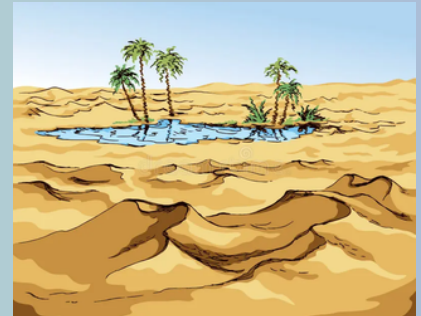
1. How does Einstein begin a story?



2. Why can't you trust an atom?



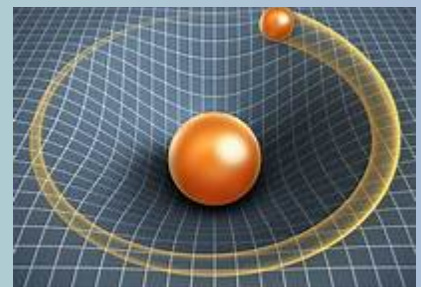
3. Looks like water, but it's heat. Sits on sand, lays on concrete. People have been known, To follow it everywhere. But it gets them no place, And all they can do is stare.



4. Be sure to shout for its answers are weak, but there is no language it cannot speak.



5. It keeps you on the ground and stops things from floating around. What is it?



1. Once upon a space-time... 2. They make up everything. 3. Mirage 4. Echo 5. Gravity

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Student Editorial Board



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