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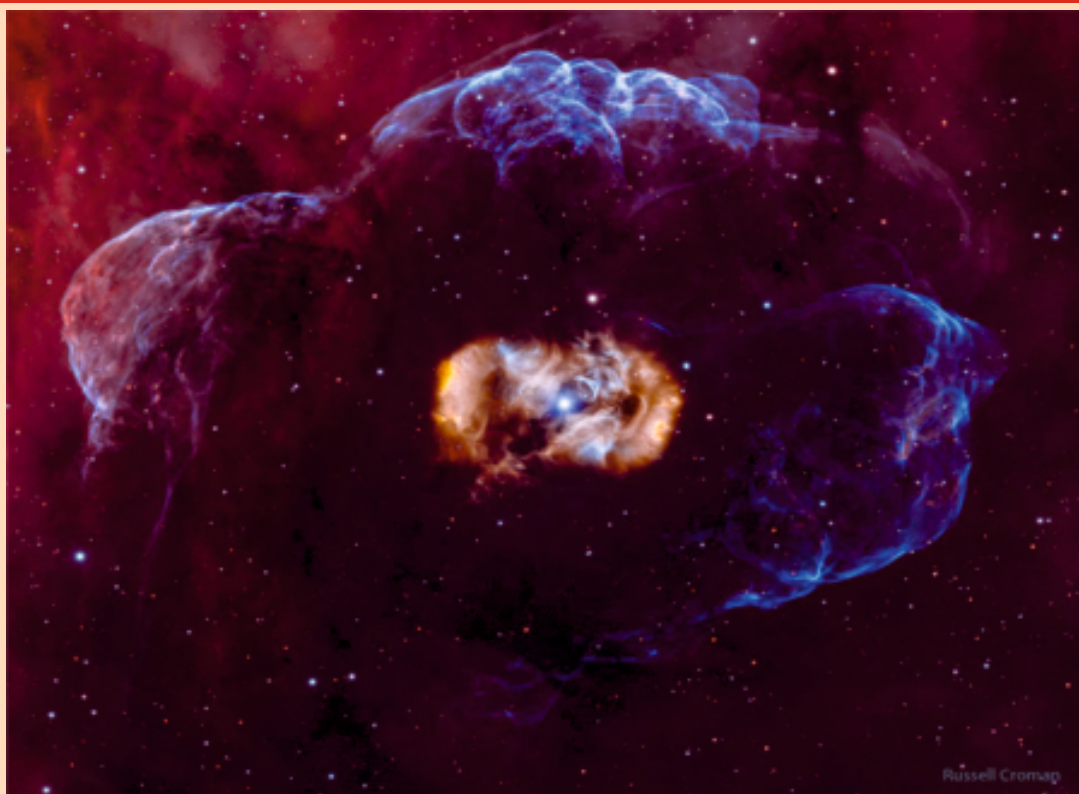
THE INDIAN ASSOCIATION OF PHYSICS TEACHERS

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The star at the center created everything. Known as the Dragon's Egg, this star, a rare, hot, luminous O-type star some 40 times as massive as the Sun. Created not only the complex nebula that immediately surrounds it, but also the encompassing blue halo. Its name is derived, in part, from the region's proximity to the picturesque NGC 6188, known as the fighting Dragons of Ara. In another three to four million years the massive star will likely end its life in a supernova explosion. Spanning around 4 light-years, the nebula itself has a bipolar symmetry making it similar in appearance to more common planetary nebulae the gaseous shrouds surrounding dying sun-like stars. Also like many planetary nebulae, NGC 6164 has been found to have an extensive, faint halo, revealed in blue in this deep telescopic image of the region. Expanding into the surrounding interstellar medium, the material in the blue halo was likely expelled from an earlier active phase of the O-star. NGC 6164 lies 4,200 light-years away in the southern constellation of the Carpenter's Square (Norma).

<https://apod.nasa.gov/apod/astropix.html>

The Story Of Cosmology Through Post Stamps 32

THE NEW VIEW OF THE SKY

SOLAR SYSTEM – MERCURY AND VENUS

Out of eight planets of our solar system. Mercury and Venus are inner terrestrial planet as they lie within the orbit of the Earth and their structure and composition is same as that of the Earth.



*Alchemist's symbols of planets of Solar System-
this also denote the metals or elements*



Mercury is inner most & one of the four terrestrial planet without any satellite



Planet ids named after Roman deity Mercury, the winged messenger of God, due to its speedy revolution



*Journal Stamp-Austria-
Depict Mercury with winged Cap*



Venus is terrestrial planet, second in orbit shows phases like moon and have strong greenhouse effect. Sri Lankan Stamp -depict image if Venus in UV light taken by Probe Marinaer-10 during fly by journey



Souvenir Block -depict Venus -Roman Goddess of love and beauty – due to brightness of the planet in the morning & evening sky it looks beautiful and hence named Venus

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The Bulletin is the official organ of the IAPT. It is a monthly journal devoted to upgrading physics education at all levels through dissemination of didactical information on physics and related areas. Further, the Bulletin also highlights information about the activities of IAPT.

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Let Us Resolve and Act: Opportunities are Knocking at Our Doors

I send heartiest greetings to all the honourable members of IAPT and friends of IAPT on New year 2023. It has been a great and humbling experience for me to work with each one of you all across the country and abroad. It is time to say good bye to the year gone by and take stock of the gains we have made to further the vision and mission of IAPT and plan actions for the Year 2023.

After Covid, offline IAPT activities started, with on-line events also becoming a very important part of these. I express my sincere gratitude to all the organisers and teams from different Regional Councils, who came forward to take up our flagship activities with the hope that covid will not play a spoilsport. Fortunately, things moved forward without any hindrance and together we came out achieving our academic agenda with many new experiments and learnings. The most prestigious task of conducting standard examinations is over, which is the most taxing and challenging tasks at the IAPT end. Thanks to the dedicated team of Chief Coordinator of examinations, paper setters, paper translators and centre in charges in about 900 centres, who worked tirelessly to meet the deadlines for the smooth conduct of exams voluntarily. *Our Reaching out the Unreached* programs are steadily moving ahead. Facebook page *Let Us Solve It (IAPT)* is live. We conducted a *Moodle Workshop as part of teacher empowerment* and for creating a human resource pool to compile question banks of classified and vetted question items at different levels. We are very hopeful of these steps gaining momentum this year. Going to IAPT Convention at Patana gave me personally lot of positivity, meeting enthusiastic organisers, competitors, celebration of best teacher and meeting young resourceful speakers. Participating online in National Student Symposium in Physics with quality content and quality streaming has raised the bar for future NSSP's. These were joys of a very different kind assuring that future of IAPT is getting more exciting.

New year time is the time to set new goals and resolve to achieve those. I would like to flag some important tasks awaiting urgent attention and indulgence of IAPT fraternity:

Continue on Next Page...

1. *NEP 2022 implementation* phase is on in the country and IAPT must come forward to contribute significantly in different aspects of its implementation by conducting workshops, preparing white papers and model curricular documents to raise the quality of Physics Education in partnership with likeminded institutes/ organisations. Soon we intend to start wider discussion on these aspects and work in time bound manner to prepare reports for circulation among stake holders.
2. *Using PER strategies* to gauge the quality of Physics teaching and learning at School and college level is the most scientific way to know the state of quality of education in the physics classroom. For this it has been proposed to conduct *Force Concept Inventory survey* through the vigorous involvement of Regional Councils. Already preliminary discussions have been initiated on the social media platforms. Fortunately, the English and Hindi versions of these are available and we need to translate and validate it in other regional languages a prerequisite to go ahead in this direction. I invite translators to engage in this task. We may need to contact Govt. authorities to carry out this task in each state and urge them to become a partner with IAPT.
3. With the thrust of NEP to introduce teaching and learning in regional languages, it is high time that IAPT should take lead in *translation work of seminal classic papers and books in Physics in regional languages* which may include world class text books at various levels and bring before the young audience of different languages inspiring classical works of Masters. In this direction, we can begin with collecting already translated works lying in the cupboards of different State Granth Academies and NCERT, carried out in 70's and 80's and prepare a catalogue and undertake work to create an e-library of such books on the web portal of IAPT as much as possible.
4. Prepare a series of *year wise anthology of Nobel Prize lectures* since 1901 with a prologue to each lecture on how they contributed furthering our knowledge and in serving for the benefit of mankind as a result of discoveries made by them. Till date Nobel Prizes in Physics have been awarded 116 times to 222 Nobel Prize laureates between 1901 and 2022. We must translate these in regional languages and make these available to young minds. A task worth initiating and carrying its fruits to young learners.
5. *Most Visible IAPT performers* of IAPT are versatile *Physics Stage Show experts*, they are the face of IAPT at the grassroot level and they have an enviable repository of physics experiments which can be offered as *Perform Physics Experiments Yourself Kits*. IAPT would very humbly request them to come together form a group for generating resources named as PPEY resource material and publish these as e-resources. NANI has been a flag bearer for this with many dedicated personalities doing their voluntary work in the remotest corners of the country. IAPT is grateful to them and expresses its appreciation and gratitude to them.
6. One of the welcoming outcomes of successful conduct of Asian Physics Olympiad (APHO) has been the *establishment of AIPHO experiment laboratory at Physics Department, Graphic Era University, Dehradun* which has an onerous task of carrying out workshops for the students preparing for Physics Olympiads and acting as another *Science and Culture Centre* envisaged by the founders of IAPT. It should like Midnapur Centre become another IAPT centre of excellence. Year 2023 is expected to set a trend for this for which indulgence of IAPT members is desired.

I would like to request Zonal Vice Presidents, Presidents of RC's and EC members of Central EC and RCs to initiate discussion on these tasks at various levels of IAPT by holding brainstorming sessions, feedback google forms, panel discussions and preparing working documents through focus groups to move forward urgently so that the recommendations to be presented to the policy and decision makers are ready in time. Delay in action will beat the purpose of the whole effort. Already a survey report on the *Status of conduct of physics experiments in schools and colleges* under the banner DPK committee is out, and is presenting a very alarming picture. As a subject Association we must make our contribution in not only highlighting this situation, but also offer solutions to

reverse this situation. This was one of the biggest surveys carried out throughout the country in a scientific manner (December 2022 Issue of IAPT Bulletin) and deserves an applause for setting an example.

In 2023 India is once again becoming host of prestigious *International Conference in Physics (ICPE) 2023*. It will be co-hosted by IAPT and IIT Ropar with support from International Union of Pure and applied Physics (IUPAP). A good participation from the IAPT community, other partner institutions and agencies is expected in that through oral, poster and other relevant presentation in this event from all levels i.e., schools, colleges, University Departments and Physics Education researchers and industry. I am sure that we will rise to the occasion and make best use of this conference in enriching our experience and knowledge. I will share a link to download abstracts from ICPE 2022 to help our stake holders know the kind of works which are accepted and presented in such conferences. It was held online with many interesting pre-conference workshops.

We are in the middle of change, IAPT as an apex body of physics teachers cannot be a silent spectator, we need to be part of the change, it is both our duty and responsibility. We need to make lot of sense out of prevailing confusion in the learning, teaching and research scape of the country, and nobody is better placed than us.

Joy of celebrating birth centenaries of two stalwarts of IAPT Prof. HS Hans and Prof. Babul Saraf is awaiting us, we need not look further for inspiration.

Once again wishing you A Very Happy, Healthy and Creative New year 2023.

PK Ahluwalia

President

IAPT

(PS: However, in 2023 we also need to be cautious about threat of re-emergence of COVID, but our work must go on.)

A critical feature of “deliberate practice” is the full mental engagement by the learner. Passive listening to the teacher or even watching engaging demonstrations that do not demand intellectual effort should be avoided. There is a place for short lectures, but only after your students have been prepared to learn from them.

-Carl Wieman

(Noble Laureate in Physics and Physics Education Researcher)



PHYSICS NEWS

Insights into optical resonances determined by the topology of the Möbius strip

A Möbius strip is a fascinating object. You can easily create a Möbius strip when twisting the two ends of a strip of paper by 180 degrees and connecting them together.

If light propagates in an optical ring resonator, the polarization of the light does not change and remains the same at every point in the ring. The situation changes fundamentally if the optical ring resonator is replaced by a Möbius strip. The twisting of the polarization causes a change in the phase of the light wave, so that the optical resonances no longer occur at full wavelength multiples that fit into the ring, but at odd multiples of half the wavelength. The experimental results, however, go much beyond previous predictions. For example, the linear polarization not only rotates, but also becomes increasingly elliptical. The resonances do not occur exactly at odd multiples of half the wavelength, but quite generally at non-integer multiples. In addition to the fascinating new fundamental properties of optical Möbius rings, new technological applications are also opening up. The tunable optical Berry phase in Möbius rings could serve for all-optical data processing of classical bits as well as qubits and support quantum logic gates in quantum computation and simulation.

Read more at: <https://phys.org/news/2022-12-insights-optical-resonances-topology-mbius.html>

Original paper: Nature Photonics. DOI: 10.1038/s41566-022-01107-7

Advances in understanding the quark substructure of scalars

The main research of Amir Fariborz is on the strong interaction of quarks and their interactions with glueballs (Composite state of Gluons).

In this recent paper published in *The European Physical Journal C* the generalized linear sigma model of QCD is applied to the scattering of two special types of hadrons called pion (π) and eta (η). This scattering is particularly important because it probes an intermediate composite state which is part of a family of hadrons called scalar mesons. This recent work has confirmed that the light scalar mesons contain a significant four-quark component, a feature that puts scalar mesons in the challenging category of exotic hadron spectroscopy.

Read more at: <https://phys.org/news/2022-12-advances-quark-substructure-scalars.html>

Original paper: The European Physical Journal C (2022). DOI: 10.1140/epjc/s10052-022-11103-4

Electrons on the run: On chirality, tunneling and light fields

Will an electron escaping a molecule through a quantum tunnel behave differently depending on the left- or right-handedness of the molecule?

Tunneling is a phenomenon in which quantum particles cross seemingly impossible-to-cross physical barriers. Mairesse, Dudovich and their teams set out to study an as-of-yet-unexplored aspect of tunneling: the moment in which a chiral molecule meets a chiral light field, and the way in which their brief encounter affects electron tunneling. They used a laser field that rotates in time to spin the barrier around the chiral molecules. The electrons emerge from the chiral tunnel with a memory of the rotation direction of the barrier.

They thus discovered that the likelihood that an electron will undergo tunneling, the phase at which the electron tunnels out and the timing of the tunneling event depend on the chirality of the molecule. . These exciting results lay the groundwork for additional studies that will use the unique symmetry properties of chiral molecules to investigate the fastest processes occurring in light-matter interaction.

Read more at: <https://phys.org/news/2022-12-electrons-chirality-tunneling-fields.html>

Original paper: Physical Review X DOI: 10.1103/PhysRevX.11.041056

Soumya Sarkar
IISER Pune
India

Minutes Of EC Meeting (online) On November 20, 2022

Following members attended the meeting:

1. Prof. P. K. Ahluwalia, President, IAPT
2. Prof. Ranjita Deka, VP-East Zone
3. Prof. S. A. Masti, VP-West Zone
4. Prof. Ravi Bhattacharjee, VP-North Zone
5. Prof. P. N. Nagaraju, VP-South Zone
6. Prof. H. C. Verma, VP General and Coordinator NANI
7. Prof. O. P. Sharma, Member RC-01
8. Prof. Meenakshi Sayal, Member RC-02
9. Prof. Sunder Singh, Member RC-04
10. Prof. R. K. Khanna, Member RC-06
11. Prof. C. G. Limbachiya, Member RC-07
12. Prof. P. K. Dubey, Member RC-09
13. Prof. M. Krishnaiah, Member RC-11
14. Prof. M. S. Jogad, Member RC-12
15. Prof. Makhanlal Nanda, Member RC-15
16. Prof. Dilip Kumar Bisoyi, Member RC-16
17. Prof. Samrat Dey, on behalf of Member RC-17
18. Prof. Kalipada Adhikari, Member RC-18
19. Prof. Himanshu Pandey, Member RC-19
20. Prof. Miskil Naik, Member RC-21
21. Prof. Rajeshwar Rao, Member RC-22
22. Prof. Rekha Ghorpade, General Secretary, IAPT

Ex-Officio Members:

23. Prof. K. N. Joshipura, Immediate past General Secretary.
24. Prof. B. P. Tyagi, Chief Coordinator, IAPT Examinations.
25. Prof. Sanjay Kumar Sharma, Secretary, IAPT Kanpur Office

Co-Opted Members:

26. Prof. Bhupati Chakrabarti
27. Prof. G. Venkatesh
28. Prof. Anil Kumar Singh

Invited Members:

29. Prof. S. K. Joshi, Coordinator, NCEWP
30. Prof. Geetha R. S. Coordinator, NCIEP
31. Prof. Y. K. Vijay, Coordinator, Prof. Babulal Saraf BCC Committee
32. Prof. T. Soorya, Coordinator, LUSI
33. Prof. Seema Vats, President RC-01
34. Prof. Yogesh Kumar, Secretary RC 01
35. Prof. Vipul Rastogi, President, RC-05

36. Prof. Lata Jadhav, Secretary RC-08
37. Prof. K. G. Bhole, Secretary, RC-08B
38. Prof. Uttam Sharma, Secretary, RC-09
39. Prof. Ajith Prasad, President, RC-14
40. Prof. Swapan Majumdar, President RC-18
41. Prof. Ranganath A.
42. Prof. Ravi Prasad Rao
43. Prof. Sharad Kaushik
44. Prof. Chandrashekhar Joga
45. Prof. Pramendra Singh, President RC-19
46. Shri Vinod Prajapati, Staff member, Kanpur Office.

Prof. Rekha Ghorpade, General Secretary, welcome the Executive Council members and the invitees present online for the meeting. She requested Prof. P. K. Ahluwalia, President, to take the chair for the meeting. He accepted the same and the proceedings started.

1. To read and confirm the minutes of earlier EC meeting:

The minutes of the last meeting held on July 03 & 17, 2022 were read and confirmed unanimously.

2. Report Presentation By the General Secretary:

Prof. Rekha Ghorpade presented a brief report of actions, decisions, etc. at central level.

To list the few of them:

Interactions of President and GS with members of the Regional council members.

Incentivisation of financially weaker RCs (where IAPT Exam enrolment is poor)

Financial support to the proposals received.

Enhancement of funds to the IAPT annual convention, NSSP.

Some national level programs by RCs.

She appreciated exemplary work done by some of the RCs. She also appreciated and thanked APhO team led by Prof. Ravi Bhattacharjee for successfully hosting APhO-22 at GEHU, Deharadun. Our appreciation and thanks also go to Prof. B. P. Tyagi, Prof. Vijay Singh and his Academic team members, Prof. Vijay Kumar and his team (Technical team, support staff etc.) at GEHU.

She placed on record the sincere and dedicated efforts by Prof. S. C. Samanta, coordinator, D P Khandelwal Birth Centenary Committee. She thanked him and his team members for carrying out various activities throughout the country.

Prof. Bhupati Chakravarty pointed out that, the report on C K Majumdar Memorial National workshop-2021 was missed. It was accepted by GS. She apologised and promised to include the same.

He also reminded about IAPT membership to National Digital Library (NDL), an initiative by IIT Kharagpur and to upload all our past bulletins on their website, so that it will be accessible to more readers.

Prof. Ahluwalia informed that IAPT has taken up this task. However, bulletins at Kanpur office were not accessible as Mr Vinod was unwell, so the task was left in between. But he promised that this will be taken up again with priority.

3. Reports by Regional Councils:

The following RCs have presented their reports:

RC- 01 Delhi & Haryana (Prof O P Sharma, Prof Seema Vats)

RC- 02 Punjab, Jammu & Kashmir (Prof Meenakshi Sayal)
 RC- 03 Himachal Pradesh & Chandigarh (Prof P K Ahluwalia)
 RC- 04 Uttar Pradesh (Prof Sunder Singh)
 RC- 05 Uttarakhand (Prof Vipul Rastogi)
 RC- 06 Rajasthan (Prof Y K Vijay)
 RC- 07 Gujarat, Daman & Diu (Prof Chetan Limbachia, Prof K N Joshipura)
 RC- 08 Maharashtra (Prof Lata Jadhav)
 RC- 09 Madhya Pradesh (Prof Uttam Sharma, Prof P K Dubey)
 RC- 11 Andhra Pradesh (Prof Krishnaiah)
 RC- 12 Karnataka (Prof M S Jogad, Prof Nagaraju)
 RC- 14 Kerala (Ajith Prasad)
 RC- 15 West Bengal, Sikkim, Andaman & Nicobar (Prof Makhanlal Nanda Goswamy)
 RC- 17 Assam, Arunachal Pradesh & Meghalaya (Prof Samrat Dey)
 RC- 18 Tripura, Mizoram, Manipal & Nagaland (Prof Kalipada Adhikari)
 RC- 19 Bihar (Convention updates- Prof Himanshu Pandey)
 RC- 21 Goa (Prof Miskil Naik)
 RC- 22 Telangana (Prof Rajeshwar Rao)

It was observed that all the RCs are doing a great work. Prof P K Ahluwalia, President appreciated their contribution in the field of science communication, Physics education, etc as workshops, seminars (Regional, National & International levels) for teachers and students from schools, UG & PG colleges. Resources sharing among the RCs is appreciable.

4. Updates on Accounts:

Income and Expenditure statement FY 2021-22 was presented by Prof. Sanjay Sharma. He was helped by Mr Vinod Prajapati.

The copy of the Accounts Statement will be published in the IAPT bulletin.

Prof Sharma informed that only five RCs have submitted their audited account statements for the last year.

It was proposed by GS and agreed by all that the last date for the submission of audited accounts of regional councils is 31st May every year. The RCs who fail to submit may not receive seed money for the subsequent year.

GS was requested to send reminder mails to RCs in February or March.

5. IAPT Competitions:

a) NCEWP:

Prof. S. K. Joshi reported that NCEWP-22 results are already declared and published in the bulletin. They are also uploaded on the website. The prize-winners will be given prizes at the valedictory function of Annual convention at Patna.

It was decided in the last EC meeting to publish an E-Book of collection of the prize-winning essays. We place on record an appreciation to Prof. S. K. Joshi for executing the task well in time, it required lot of hard work as, even the selected essays needed editorial intervention.

b) NCICP:

On behalf of Prof. Pradipta Panchadhyayi, coordinator, NCICP, Prof. Makhanlal Nanda Goswamy presented the report. He reported that the competition results have been declared, and the prize-winners will be given prizes at the valedictory function of Annual convention at Patna.

c) NCIEP:

Prof Geetha R. S. reported that the response was very good this year. The competition will be held on December 02, 2022, at the annual convention venue, Patna. 11 participants in each category, viz teachers and students will present their experiments.

The Prize money for all the competitions is enhanced.

First prize: Rs. 7000/- & a certificate.

Second prize: Rs. 5000/- & a certificate.

Third prize: Rs. 3000/- & a certificate.

Participants of all the competitions will be awarded a participation certificate.

Students selected for NCIEP will get Rs. 1000/- towards incidental expenses.

To enhance the participation at all the competitions, some suggestions were given by members:

- Think of rescheduling the calendars of all the competitions owing to semester pattern. There can be a meeting with presidents and secretaries of regional councils.
- Announcements of competitions be made in the month of January.
- RC level competitions should be organised. Some of the RCs are already organising them, Gujrat Model is worth emulating: 1) competitions at District level Science centres, 2) Personal follow up, like calling students, 3) Regional level competitions at one place, Gujrat Science centre. Gujrat Centre of Science and Technology is instrumental in the activities.
- Testimonial from the students participated and won the competitions be obtained and published widely. (This also can be for popularizing NGPE).
- All the participant be given the opportunity to showcase their work.
- Waive all the charges for the students attending the convention. (This was implemented by RC 09 during the convention at Indore in 2021).
- The issue of TA to participants must be discussed in the Finance committee meeting and clear guidelines should be prepared. A document in this regard must be made available to all the members.

6. Birth Centenary Celebrations:

a) Prof. Babulal Saraf Birth Centenary Celebrations:

Prof. Y. K. Vijay informed that December 2nd being the birth date of late Prof. Saraf, there will be a curtain raiser program on that day at Patna annual convention.

RC 09, every year organizes Babulal Saraf Memorial workshop. It was suggested that RC 06 and RC 09 should come together and plan a calendar of activities.

b) Prof. H. S. Hans Birth Centenary Celebrations:

Prof. P. K. Ahluwalia informed that RC 03, Himachal Pradesh & Chandigarh will take the initiative to plan the activities. November 22nd being the birth date of late Prof. Hans, the BCC will start on that day. He also informed the contribution of this “Cyclotron Man” in the field of Nuclear Physics.

Punjab university organizes an annual lecture in his name.

Both RC03(Himachal Pradesh, Chandigarh) and RC 02(Punjab, J & K) can jointly plan the Prof. Hans BCC activities.

General guidelines for BCC:

- Set up the National committee

- Regional councils who have taken the initiative should come together and prepare the calendar.
- Try to make a corpus.
- Make an annual National lecture in the memory of the Physicist whose Birth Centenary is being celebrated.
- Every month the colleagues would be talking on YouTube channels.
- Zonal and Regional level activities can be planned.
- Documentation of the activities be prepared.

7. Report on NANI:

Prof. H. C. Verma presented the report.

He informed the formation of new Anveshika by Jammu & Kashmir, STA-IAPT Anveshika. Coordinator- Prof. Sayed Ishtiyak Ahmed.

NAEST was conducted from July to November 2022 throughout the country, in collaboration with Shiksha Sopan, Sopan Ashram, IITK. The website: naest.shiksha-sopan.org was developed by Vimal Kumar and team for this purpose.

The test was conducted in both, online and offline mode.

Registration campaign was done by all Anveshika coordinators and other Physics teachers in the network.

Total registration was 54000 (46000 from schools and 8000 from colleges).

However, in the online screening, which had video based MCQs, only 10000 students appeared. The reasons behind this, Prof. Verma felt were:

- Students may not be conversant with web-based examinations.
- NAEST message did not sink.

Maximum registrations were recorded by-

- BVN-IAPT Anveshika (3966)
- HIM-IAPT Anveshika (2348) (creditable, as it is relatively new Anveshika)
- SGM-IAPT Anveshika (1606), (sizable number from Govt. Schools)

In online and offline screening round, about 700 school students and 300 college students appeared. Same test was given in both the modes.

Preliminary round:

- Three experiments to be done at home.
- 187 Physics teachers volunteered for evaluation.
- 31 virtual centres, 5 offline centres and 36 groups were created.

Semi-finals and finals were conducted at SGM-IAPT Anveshika, Sopan Ashram.

34 students (24 school & 12 college level) finally made it.

12 school and 5 college students entered in the finals.

At both levels National 1st, 2nd 3rd were awarded.

Activity was funded, partially, by IAPT and Shiksha Sopan.

Other activities:

First Sunday Club: Participation from Govt, school teachers is increasing, Prof. Verma reported.

8. Actions on proposals:

- a) LUSI (Let us Solve It): Prof. T. N. Soorya proposed this activity. He reported the activity has been launched and the Facebook page created has already started functioning.
- b) Incentivisation of Best performing RC Award:
Prof. Rekha Ghorpade, GS reported that the Group has been formed to frame the Rules, guidelines and to design the application format. It would be published in the December issue of the bulletin and the same would be uploaded on the IAPT website.
After some deliberations, it was unanimously decided by the members that every year, there would be 1st and 2nd positions selected for the Awards and the awardee RCs will not be allowed to apply for the Award for next two years.
Members also agreed the allocation of prize money to be Rs. 50000/- (Rs. 30000/- for the first position and Rs.20000/- for the second position).
- c) IAPT student membership and students magazine: The proposal was made by Prof. Mahesh Shetti from Mumbai. He could not attend the meeting. However he conveyed that he is working on the details and submit them very soon. Prof. Rekha Ghorpade was requested to follow up by the President Prof. Ahluwalia.

9. Announcements of Coordinators:

- a) APhO: We place on record the exemplary services put up by Prof. Ravi Bhattacharjee for the IAPT APhO Cell.
IAPT would like to thank him for his dedicated and sincere efforts as the coordinator, to make APhO program a grand success. It was proposed to appoint a new coordinator under the guidance of Prof. Bhattacharjee.
Prof. Rekha Ghorpade proposed, Prof. Vijay Kumar from GEHU may be appointed as the new coordinator. Prof. Ahluwalia and Prof. B. P. Tyagi seconded it and all the members approved.
- b) IAPT-JSO: Prof. Rekha Ghorpade reported that entire Junior Science Olympiad Program is handed over to IAPT by Homi Bhabha Centre for Science Education (HBCSE) from this year. Prof. J. P. Gadre be appointed as a overall coordinator for the program, considering his long association and contribution for JSO over two decades.

10. IAPT Examinations:

Prof. B. P. Tyagi, updated on the enrolment of National Standard Examinations to be conducted countrywide this year. He reported that the total enrolment is 1,35,000 which is very good. He further reported, five WhatsApp groups are created and all centre in charges are the members of this groups. Centre in charges are instructed to take a photo when they receive the packets and make a video when they open the packets. These are required to post on WA groups.

We wish Prof. Tyagi and his team a grand success for the NSE on 26th and 27th November 2022.

Update on NGPE by Prof. Tyagi and Prof. Anil Kumar Singh: The last date for the enrolment is extended to December 1, 2022. Enrolment is done, both, online and offline. 2000 students and 50 centres are registered till date and the process is going on. The Exam will be conducted on January 27, 2022.

5 Gold Medallists of NGPE-22 will be felicitated at 36th Annual Convention, Patna.

The meeting ended with vote of thanks by Prof. Rekha Ghorpade, GS IAPT.

Rekha Ghorpade
General Secretary

Minutes of an Extended EC Meeting

An Extended EC Meeting was held on December 02, 2022 at 6:10 pm at Patna on the first day of 36th IAPT Convention. Since the EC meeting was scheduled immediately after AGM, Prof. Ahluwalia requested all to be there in the meeting. Also, the EC meeting was held online a week before the convention, the follow up of the minutes of last meeting was taken up.

1. Action on the proposal 'Award for the best performing RC':

Rekha Ghorpade, GS informed that five-member committee was set up to frame the Guidelines, format of the application and Nomination form. The committee worked under the guidance of Rekha Ghorpade, GS, IAPT. They have completed the task and same will be shared with EC members, published in the January 2023 issue of IAPT bulletin and will be uploaded on the website.

2. GS informed that the work to set up the Dynamic Website of IAPT is in progress. Prof. Ahluwalia gave the details. He explained the features of the website:

i) To update the profiles of life members by themselves, with the help of OTP generated on their unique email id.

ii) Online registration who wish to become new life member, payment gateway to pay registration fee, verification by the admin to approve the membership and generation of life membership certificate instantly.

iii) It is possible to draft bulk emails, for about one lakh people.

iv) Mentor-Mentee relation program can be started.

v) Endowment can be created through the portal.

It should be tried, Prof. Ahluwalia emphasized.

All the members appreciated and approved the same.

3. It was decided to prepare a calendar by central body of IAPT in consultation with the Presidents and Secretaries of Regional councils.

4. Any Other:

i) It was suggested that IAPT should send an observer/s one month before to inspect the arrangements at the convention venue.

ii) Prof Ahluwalia, President said we must focus on team building in IAPT.

The meeting ended with vote of thanks by GS

Rekha Ghorpade

Minutes of AGM Indian Association of Physics Teachers

The Annual General Body meeting of Indian Association of Physics Teachers was held on 2nd December, 2022 at College of Commerce, Arts and Science, Patna, Bihar during 36th annual convention of IAPT at 5 P.M. Initially the meeting was adjourned due to lack of quorum and was reconvened after half an hour at the same venue.

Following members attended the meeting:

1. Prof. P.K. Ahluwalia, President IAPT (Chair)
2. Prof. Rekha Ghorpade, General Secretary.
3. Members as per the signature sheet attached with these minutes

Prof. Rekha Ghorpade General Secretary IAPT requested Prof. P. K. Ahluwalia President IAPT to Chair the meeting, which was accepted. Meeting started with the permission of the Chair.

Following business was transacted:

1. Suggestions from the participants

- a. Prof. PK Ahluwalia, Chairperson invited suggestions from the members on the programs, activities and working of the IAPT in the last one year and the future programs which honorable members deem fit to make IAPT an organization to take forward the agenda of quality of Physics and Physics Education. He welcomed their suggestions and critique for the improvement of IAPT's activities. He also requested change in the course of functioning if any to make it more vibrant.
- b. Prof. Vijay Singh, Past President, desired to know whether any follow up action has been taken on last year's decisions of AGM particularly on the resolution passed about printing of bulletin online so as to curtail huge expenses on bulletin. He also suggested to print not more than 500 copies in hard copy mode. Prof. Rekha Ghorpade, informed that this was not implemented as the issue was discussed and raised in two consecutive EC meetings and few members raised the objection. However, Kanpur office is trying to work out the solution. Prof. Bhupati Chakraborty reminded, as per the constitution each member must get a copy of bulletin, either print or e-copy. He felt bulletin has other issues which are needed to be addressed. He suggested that the suggestions can be asked from all the members and be sent to general secretary prior to the meeting for the final decision. Prof. Ahluwalia informed that printing less than 1000 copies may not be cost effective and also we need to update our database of members with correct e-mail addresses and mobile numbers to bring more and more members ready for receiving emails. He assured the members fast action in this direction in next three months.
- c. Prof. P. K. Dubey suggested that the opening ceremony of the convention should be properly planned, and should be short, maximum of 50-60 minutes duration. We also can follow the usual practice to inaugurate the convention on Sunday, so that it would be convenient to all the prize-winning students to attend.
- d. Prof. C. Rajeshwar Rao raised his concern about poor participation of young generation in the convention and he felt something has to be thought of to attract the younger lot in such conventions.
- e. Prof. Pankaj Ranjan said, the authorities should give letters to the teacher participants, who wish to attend the convention so that they would get the duty leave from their institutions. Leave for the teachers in service is the major issue, majority of the members felt.
- f. Prof. Nagaraju informed, 8th NSSP was organized by RC12 & 12A (Karnataka & Bangalore) in the year 2021. This year also they are hosting NSSP-22. He feels it should be hosted by other RCs turn by turn. He also expressed the poor participation and ignorance of members to NSSP announcement in the

bulletin. The notice was given in two consecutive issues of the bulletin; however, he lamented that many have not read it.

- g. Prof. Ranjita Deka informed that they have Physics Academy of North-East (PANE). They organize PANE conference every year which attracts younger generation. They also have E-magazine and stopped print version. IAPT should adopt such practices, she suggested. She said, rescheduling the timeline of any program can be posted on WhatsApp groups.
- h. Prof. H. C. Verma suggested that the programs should be there to empower the youth.
- i. Prof. Vandna Luthra proposed about offering a large number of internships to the students. Hands on practice should be adopted for workshops. For topics like AI and quantum computing, there should be structured trainings from the scratch including hands on python. She also proposed collaborations among the RCs and focus groups to catch up with the updates.
- j. Matter of Credit based curricular frame work was raised by Prof Ahluwalia who asked, why it works in other institutions like IITs IIMs and NITs and why not in universities. Prof. Ravi Bhattacharjee commented that, the semester system has disturbed everything and its proper implementation is still awaited. Prof. Ahluwalia suggested that a pan Indian body like IAPT is duty bound to come out with a white paper after holding wider discussion and send it to the bodies involved in policy making and its implementation. He also requested that IAPT should critically look at the Physics curriculum at school, UG and PG levels and should have a model curriculum for circulation and adoption.

2. Amendments in IAPT Constitution as approved in the last AGM Meeting:

The current status of the amendments with the Registrar Co-operative Societies was shared with the members and as informed by the central office Kanpur, that the office of Registrars Society has asked for the minutes of the AGM along with the members signature sheet and the amended copy of IAPT constitution. General Secretary proposed the house to approve the amended constitution, which was approved by voice vote and raising of hands. It was decided that central office will take this matter further with the Registrar Co-operative societies immediately.

The meeting ended with a vote of thanks to the members and the Chair by GS.

Rekha Ghorpade

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Andhra Pradesh State Level Prelims NAEST 2022

We, the team of FOCUS IAPT ANVESHKA & RC 11, Andhra Pradesh under the able guidance of Padma Shree Prof. H C Verma Ji, successfully completed NATIONAL ANVESHKA EXPERIMENTAL SKILL TEST (NAEST)-2022 in our state. This year FOCUS IAPT ANVESHKA & RC 11 in collaboration with RK Jr & Degree College conducted the test 2022, at R.K. Degree College, Vizianagaram on September 18th, 2022, under the guidance of Co- Ordinator Dr. J. Chandrasekhar Rao, Lecturer in Physics, Govt. Degree College, Rajam, and RC – 11 EC member Sri. V. Srinivasa Rao, PGT Physical Science, AP Model School, Tamada, acted as resource person.

39 students from junior level and 24 students from senior level selected after the screening test conducted earlier in our state through offline mode. Organizers formed WhatsApp groups for the selected participants. Through that group, we shared write ups of experiments such as **1. Finding the refractive index of material of the prism, 2. Study the variations of pressure and volume of air** for juniors and **1. Interference and Diffraction 2. Velocity of efflux** for senior students. So that, the students study the write up and make their own preparation of apparatus. The students made their own arrangements and attended the venue on September 18th, 2022. The registration of the program was done at 9.30 am. After completion of the registration, the organizers announced about the third experiment, For Juniors, **To locate image of a pin in a slab** and For seniors, **Finding the speed of sound in an air column**. The students were divided into three groups in order to perform the experiments. Each student was

given one hour to perform the first experiment. After that a break of 10 minutes was given and then they were allowed to perform second experiment. At 10.00am students started their first experiment, and by 1.20 pm all the students finished the experiments.

Besides Dr. J. Chandrasekhar Rao and Varanasi Srinivasa Rao, A team of teachers, G. Lakshmana Rao, K.O.V.S.S.N.R. Subrahmanyam, P. Raghava for juniors and P. Venugopal, M. Suresh, B. Sailaja for seniors acted as evaluators. These teachers interacted and guided the students in performing the experiments successfully. Dr. DBRK Murthy, HOD, Department of Physics, Govt Women's College, Srikakulam was the chief guest, and he interacted with the students and appreciated them the way they were performing the experiments. Post lunch, valedictory session was conducted. Dr. DBRK Murthy delivered a speech, which was thought provoking and entertaining. He correlated physics with divinity. Students thoroughly enjoyed his speech. Few Students gave feedback that they enjoyed while doing the experiments.

In this event, the winners are as follows. Juniors' 1st V. Guna Sekhar, X Class, A.P. Model School, Tamada, 2nd L. Varada Raju, X Class, Z.P.H.S. Kancharam, 3rd A. Ishitha Prakash, X Class, National School, Vizianagaram, Senior's 1st P. Surya Lakshmi M.Sc. 1st Yr, Govt. Degree College (A), Rajamundry, 2nd Ch. Vijaya Madhavi B.Sc, MR (A) College, Vizianagaram, 3rd B.V.S. Durga Ragini M.Sc. 2nd Yr, Adi Kavi Nannaya University, Tadepalligudem, Consolation N. Devi II B.Sc., Govt. Degree College, Rajam. As per our rules, 1st prize Rs. 1000, 2nd prize Rs. 750 and 3rd prize Rs. 500, cash prizes given to the winners of juniors and seniors separately. All participants were given certificates.



Teacher Training In Conceptual Chemistry And Physics

Venue: St. Vincent Pallotti English medium high school, Pedana, Krishna Dist. Andhra Pradesh.

Participants: 93 Physical science Teachers from all schools of Krishna district.

Resource Persons: RC 11, Vice President, Sri. K. Ravindra Kumar; EC Member Sri. U. Lakshmana Suri.

The workshop was inaugurated by Smt. Metilda Rani, Mandal Educational officer. She exhorted teachers to strictly adhere to practical approach of teaching. Noble college Principal Dr Ernest stressed the need of utility of technology in teaching physics.

While delivering the keynote address, K. Ravindra kumar enthralled the teachers with simple experiments using pen refill, stones, threads. He explained how FOCUS IAPT ANVESHKA making Physics teaching effective. He demonstrated the concepts of physics using day to day life available objects. The

concepts of density, pressure, Inertia, center of mass, centripetal force, Bernoulli's principle, Laws of motion, friction were explained using low-cost material. He said, the days of going to lab is outdated you become a mobile lab and take lab to land. How a physics teacher can explain concepts even outside the classroom was also well demonstrated using strings, mirrors, magnets. In the afternoon session the doubts of teachers were clarified, and participation certificates were issued to all participant teachers.

Electricity experiments were shown to teachers by U. Lakshmana suri. Dr. Mannam Krishna murthy chemistry professor encouraged all teachers to effective use ppt's at relevant topics. He demonstrated, some experiments in chemistry. All the teachers felt happy for knowing so many experiments for all school level concepts. Correspondent, organizing school Rev. Joji reddy garu made excellent arrangements and school principal Rajeev proposed vote of thanks.

Joga. Chandrasekhar Rao
President



Two days Ability Enhancement Workshop for School Science teachers of Rajasthan held during December 9-10, 2022

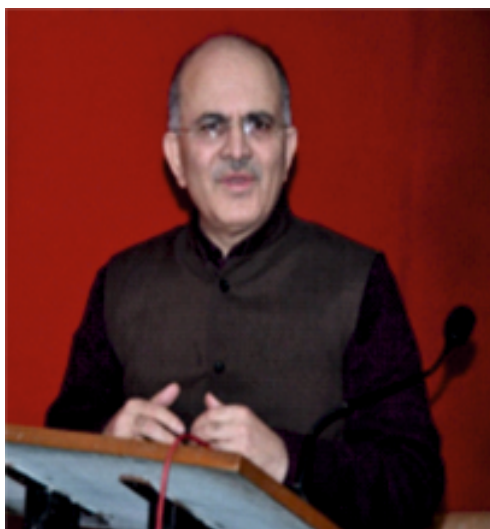
Second version of the Ability Enhancement Workshop for School Science teachers of Rajasthan was organized by Jaipur National University, Jaipur in association RC-6, Rajasthan during December 9-10. The participants of this workshop were science teachers of Swami Vivekananda Model Schools of Rajasthan, mostly from Jodhpur, Jalore, Pali, Nagaur, Tonk, Swai Madhopur, Sriganganagar, Jhalawar, Karauli, Jaipur and Udaipur. 40 teachers attended this event.

This workshop is aimed to enhance the experimental learning ability of the teachers so that they can extend it to their classes. This type of workshop introduces and illustrates fundamental understanding and the ways and means to extend it to the young students of middle and secondary classes. The other objectives were to study the suitability of various approaches and to develop a few activities for the development of the scientific temperament in the students during the high school education. Moreover the workshop was aimed to introduce the idea of Innovation Hub and its effectiveness in teaching the fundamental science.

Workshop started on 9th December, 2022 with inaugural function in which purpose of this workshop was

introduced by convener Prof. Y. C. Sharma, Vice President, RC06, and Director, Research & Academic Development, Jaipur National University. In the welcome address Prof. R. L. Raina, Vice Chancellor, JNU invited all participants to fully immerse in this concept of teaching and learning so that they can effective teachers and become role model for others. He insisted that such workshops are designed to cater the objectives of NEP 2020 so that our students can become better learners and effective citizens. He further added that this workshop will be very useful for the participants in the enhancement of their knowledge.

The workshop started with the inaugural lecture of the Chief Guest of the function, Prof. Y K Vijay, President, IAPT-RC06, Rajasthan and Director, CIST, IIS University, Jaipur. Prof. Vijay introduced the idea of Innovation HUB to the participants and demonstrated some concepts through videos. He physically demonstrated about 10 experiments which were appreciated by all the participants. Prof. Vijay demonstrated methods of teaching so that students could be prepared for the new age science.



Post lunch the second session started with the lecture on “Innovation and creation” by Dr. Neetu Verma, Associate Professor, PG Department, Kanya Maha Vidyalaya, Jalandhar, Punjab. She introduced the idea of wave motion using the transmission line, made by straws. She inspired and motivated participants to design and develop such toys for the students so that they feel more involved. The wave machine was also demonstrated having both longitudinal and transverse wave motion displays in mechanical ways. The concept of conversion of potential

energy into kinetic energy on a racing track was shown to the participants. It was followed by a lecture by Prof. Dheera Sanadhya, JNU, Jaipur on “New careers on the horizon for Science students”. She introduced the new avenues available to the students as career. The participants were shown the advanced laboratories available at JNU by her team.

This was followed by a laboratory session mentored by Prof. Y C Sharma, JNU Jaipur.



In the evening 6-7 PM there was a lecture by Dr. Jaswinder Singh on “Curiosity for Science Practicals” President RC02, Lecturer in Physics, Govt. Sr. Sec. Smart School Kalyan, Patiala. Prof. Singh showed a few tricks of interesting teaching which are very impactful and easy to understand.

Second day of the workshop started with the lecture on “Building Blocks of Nature” by Prof. N. L. Sharma, Professor Emeritus, North Michigan University, US. He spoke about the Nature, Matter and Radiation; followed by lecture on “Futuristic 5G Technology” by Prof. R. K. Khanna, Former President and National executive member, IAPT-RC6.

After tea Lecture and session by Mr. Himanshu

Khandelwal and Kushal Jain, Mentors was on Atal Tinkering Labs. It was a training session for the participants who already have these labs in their Schools and a motivating session for those who don't have; so that to introduce these new age gadgets in their teaching-learning process. This was followed by Lecture on “Misconceptions in Science” by Prof. Yogesh Bhatnagar, St. Xavier's College, Jaipur. He pointed out some general oversights and omissions which usually takes place in science teaching. This was very well received by the teachers and they commented about this session as a real value addition in their own teaching.

The valedictory session was graced by the Chief Guest Prof. H N Verma, Pro Chancellor, JNU and Guest of Honor Prof. R L Raina, VC, JNU. In his address Prof.

Verma congratulated all the participants as they were able to learn the new methods of learning and teaching from the stalwarts of science teaching. He emphasized that such workshops are a learning platform the teaching fraternity to align with the mechanisms indicated and prescribed in the NEP 2020. He invited the teachers to get their students visit the advanced laboratories available in the JNU campus. He also offered the help and support of

faculty members of JNU in the schools in the development of new laboratories of the expert lectures. He invited the participants to express their view and experiences in this workshop so that the organizers may calibrate the impact of these efforts. On this initiation 6 participants expressed their thoughts and showed their satisfaction in the proceedings of the event.

Y C Sharma

REPORT (RC-06)

Birth Centenary celebrations of Prof. Babu Lal Saraf

(02/12/2022 to 01/12/2023)

IAPT has decided to celebrate the Birth Centenary of Prof. Babu Lal Saraf (02/12/2022 to 01/12/2023) to popularize the experimental physics in young generation. Prof B. L. Saraf, an extraordinary experimental Physics Teacher, was born on December 2, 1923 in Badnawar, M.P. After schooling in home town, did his B.Sc. from University of Rajasthan (UOR), Jaipur and M.Sc. (Physics) from Agra University in 1947. Later he worked in Agra College, Agra; University of Delhi; Bartol Research Foundation; Franklin Institute, Swarthmore; Pennsylvania, USA; BARC, Bombay. He did his Ph.D. in the field of Experimental Nuclear Physics from Agra University in 1957. He joined Physics Department, UOR as Professor and Head in 1965. He did many academic changes and established a Center for Development of Physics Education (CDEP) with the assistance of UGC. Here he developed variety of new experimental kits for UG Physics students and distributed these in various Science Colleges in Rajasthan along with training to faculty members. With these extraordinary activities, he tried to improve the quality of Physics teaching in Rajasthan. He was awarded by American Physics Teacher Association for his new experiment demonstration kit. Prof Abdus Salaam, then Director of ICTP invited him to help University of African countries in developing centers of Experimental Science. After retiring from UOR, he continued his passion for Physics Education at Ratlam (1992 - 97) under the umbrella of UGC & Govt. of M.P.

To organize various events a National committee has been formed. The advisory board consists of Prof. P K Ahluwalia President, Prof. H C Verma, Vice President General, and Prof. Rekha Ghorpade General Secretary. The committee is Chaired by Prof. Y K Vijay, President, RC-06, having Prof. Y C Sharma, Vice President, RC-06 as Secretary and 9 other members, namely, Prof. R K Khanna, Prof. G Venkatesh, Prof. Meenakshi Syal, Prof. Minhaz Hussain, Prof. Ranjita Deka, Prof. Sarmistha Sahu, Prof. Uttam Sharma, Prof. Sanjay Wate and Dr. Neetu Verma.

To start the celebrations and invite the Governor of Rajasthan Hon'ble Sh. Kalraj Mishra, a delegation consisting of Sh. Shriram Sharma, Prof. Y K Vijay and Prof. Y C Sharma met the Hon'ble Governor and apprised him about the plans of celebrations and presented him a photo of Prof. Saraf.

To disseminate the information about Prof. Saraf a calendar has been prepared for the circulation among the IAPT fraternity.



Y C Sharma

Secretary

National committee

ANNOUNCEMENT

IAPT National Competition on Essay Writing in Physics (NCEWP - 2023)

Writing makes one perfect, essay writing more so.....

NCEWP is one of the three national competitions being held by IAPT every year. The competition is open to participants in two categories viz., students and teachers (including Science Communicators).

Category A - *students* of Higher Secondary /Jr. College, UG and PG levels;

Category B - *teachers* of Higher Secondary/Jr. College, UG and PG institutions, also Science Communicators working in recognized institutions.

Essay topic for both the categories is:

“PHYSICS IN FORENSIC SCIENCE”

Forensic science or forensics is the scientific processing of information found at the crime scene. The facts derived from the analysis can be used as evidence in the justice system. Forensic Physics is the application of physics for purposes of civil or criminal law. General Physics in forensic science involves electrical, mechanical, chemical and laboratory analysis as well as mathematical formulations based on recognized principles of fundamental physics. The fundamental physics like conservation law of momentum, collision and Newton's laws of motion are having a great and vital application in reconstruction of scene of crime. All the fundamental laws of Physics are very much helpful in analyzing available evidence and drawing appropriate conclusion

Your essay may be written considering the following points:

- (i) How Physics is used in crime detection?
- (ii) The details of the Instruments/technique used in detection process e.g.,
 - (a) microscope/electron microscope (b) the mass spectrometer (c) use of the photoluminescence phenomenon (d) use of ultraviolet light (e) use of X-rays etc. (f) software-based imaging methods for facial reconstruction etc.
 - (g) Measurement of density (soil & glass examination) (h) Refractive index of materials and birefringence for fiber analysis
- (iii) List the types of crimes e.g., road accidents, fire and burns, drowning in water, falling from height, sudden explosion/blast, injuries due to fighting/shooting, other medico legal cases etc.,
- (iv) You may have the data of last five years of various crimes in your area from the Government Hospital / District Police(Forensic) Office, this will give an idea which crimes are having a large no. and what is the growth rate of these during the last five years
- (v) Conclusion

General Instructions:

The essay will be limited to 08 pages including figures/tables etc. type-written in the Times New Roman 11-point fonts, with 1.15 spacing. A format is given below:

IAPT National Competition on Essay Writing in Physics: 2023 (NCEWP – 2023)

Topic: -“PHYSICS IN FORENSIC SCIENCE”

Tick Category: A B

Author’s Details (with Affiliation & Signature):- Total No. of Words:-

Key Words (Maximum Five)

Important Changes in the IAPT Essay Competition NCEWP-2023

All the RC’s will conduct the regional level essay competition digitally. Students at all the levels i.e. Higher Secondary/UG/PG can submit their essays through e-mails to President/Secretary/EC member of the respective regional council. Only two entries per institution may be submitted in a category.

- (1) **Students will send their entries duly forwarded through respective school/college/institute to the appropriate Regional Council (RC) with all contact details clearly. The RC’s will have the initial scrutiny at their level. They will select 2 best essays from each level. Thus each RC will submit 6 best entries to the national competition. RCs may award certificate etc., for their participants. Even the RCs may issue a certification of Participation to those whose Essays are sent to the National Competition.**
- (2) **For the regional competition, students may write their Essays in Hindi or their regional languages. If such entries are forwarded for the National Competition, then the concerned RCs will translate the Essay in English (with the help of Google translator etc.) Only English Version will be submitted for National Level Competition.**
- (3) **Similarly, Teachers & Science Communicators will send their entries through e-mails duly forwarded directly to the Coordinator/Member. Retired teachers can self-attest their entry. All entries (in English only) will be scrutinized. All entries will be subjected to the online plagiarism test. All entries will be assessed by three evaluators.**

The last date for essay submission is 30th July, 2023

Final entries for the national competition must be submitted in PDF format by e-mail to any one of the following:

1. Prof. S. K. Joshi, Coordinator, NCEWP, Mail id:- joshisantoshk@yahoo.com
2. Dr. Himanshu Pandey, Member, NCEWP, Mail id:- himanshukrpandey@gmail.com
3. Dr. Shivanand Masti, Member, NCEWP, Mail id:- shivanandmasti@yahoo.co.in

Prof. S. K. JOSHI (Coordinator, NCEWP-2023)

IAPT Exemplary RC Award-23

It was proposed by Prof. U. S. Kushwaha to constitute an award for best performing RC. This was discussed in the subsequent EC meeting and was approved. It was further proposed that this would not be a competition among the RCs, however it can be the incentivisation of RCs in the form of cash award.

In this line a five-member committee under the guidance of Prof. Rekha Ghorpade, GS-IAPT, was set up to frame the Guidelines and the formats for an Application and Nomination forms. The committee has completed the task well within the timeline. I am forwarding these documents through the bulletin for the kind attention to all the office bearers of Regional councils and Sub-Regional councils.

Since the assessment will be done at the end of the calendar year, the required links to download the Application form and submission of the same will be shared later.

Rekha Ghorpade

Indian Association of Physics Teachers

IAPT Exemplary-RC Award

Guidelines, Terms and Conditions

Here RC refers to “RC and sub-RC” &

Award refers to “IAPT Exemplary RC Award”.

SECTION 1: Steps for conferring the Award

1. A RC for the Award should have made significant contribution to Physics Teaching and Learning, Popularizing of Physics, and reaching out to the public.
2. It should satisfy the eligibility criteria (see **Section 2**).
3. The RC must be nominated by Zonal VP/EC representative of that RC (see **Section 3**). (Hence referred to as Nominee-RC)
4. The Nominee-RC must submit the Application form online only (see **Section 4**).
5. IAPT Selection Committee chooses the Awardee-RC from amongst the Nominee-RCs (see **Section 5**).
6. The Award is presented to the RC (see **Section 6**).

SECTION 2: Eligibility Criteria

1. The RC/sub-RC should be listed in the IAPT Register.
2. The RC/sub-RC should have conducted an election in Oct-Dec of the previous term (2021) for the election of the team members.
3. The EC-members list should have been published in the Bulletin.
4. At least one EC meeting should have been conducted at their RC/sub-RC level per year in the current term.

SECTION 3: Nomination

1. The Nominator should be the Zonal VP of IAPT or an IAPT EC Representative of the RC.
2. A Zonal VP can nominate any number of RCs of his zone.
3. The EC representative can nominate the RC and the sub-RCs in his RC region.
4. The Nominator is requested to submit the Nomination form online at <https://.....> no later than 31 Jan of the year of the award

SECTION 4: Application

1. The Application form should be submitted online by the corresponding RC/sub-RC at <https://.....> no later than 31 Jan of the year of award.
2. The application form needs to be signed by the RC President and either Secretary, Treasurer or Vice President of the RC.
3. The activities of the RC in the previous year only will be considered.
(Example: Activities by the RC from Jan 2023 – Dec 2023, Nomination and Application by 31 Jan 2024, Award function after 31 Mar 2024, Award amount to be utilized in the financial year 2024-25).
4. RCs will be required to send the soft copies of supporting documents (in a single pdf document including the signatures of President and Secretary/Treasurer/VP) of all their activities along with the application.
5. Please contact mobile or write to@gmail.com for any clarification in this regard.

SECTION 5: Selection Process

1. The Nominations and Applications will be reviewed by a Selection Committee appointed by IAPT for this purpose.
2. Selection Committee Members may have telephonic discussion with nominee-RCs.
3. The Screening Committee will make a shortlist of nominee-RCs.
4. Two amongst the shortlisted RC, based on their contribution to Physics Teaching/Learning etc. will be chosen by the Selection Committee for the Award.
5. Two RCs will be chosen for the awards- *shrestha* (I) and *uttama* (II).
6. Additionally, a Special Mention, *Ananya* is awarded to a RC for an exceptional achievement in one aspect but has not qualified for the Award.

SECTION 6: Award Presentation

1. The Awardee-RC will be announced during the following EC Meeting of IAPT and cash prize will be transferred to the RC Bank Account provided by them. The purse will consist of Rs 30,000/- for the *Shrestha*-Exemplar-RC and 20,000/- for the *Uttama* Exemplar-RC. The purse will consist of Rs 5000/- for *Ananya* Exemplar-RC. This is an incentive for the RC to utilize the amount for innovative activities for the following financial year.

2. The Awardee-RCs will be acknowledged in a ceremony at the Annual Convention. A written version of the activities will be required for publication in the IAPT Bulletin.
3. The Awardee-RC's representative (President/Secretary) will be reimbursed TA as per IAPT norms to the EC meeting for the Convention.
4. The announcement/felicitation of the Exemplar-RCs will be done in the Annual Convention of IAPT.
5. Certificate of Appreciation /Momento /Simulated Cheque will be handed over to the RCs.

SECTION 7: Terms and Conditions

Following terms and conditions shall apply to the IAPT Exemplar-RC Award ("Award").

1. Any number of RC/sub-RC from the same zone can be considered.
2. Any false information submitted in the Application form will lead to immediate & permanent disqualification of the nominee-RC for the Award.
3. IAPT reserves the right to consider or reject any submitted nomination without informing the nominee-RC.
4. The last date for nomination/application for the Award can be curtailed or extended at the discretion of IAPT, as deemed necessary.
5. Once submitted, IAPT has the right to use the information submitted through e-mail or hard copy, as it deems fit, including but not limited to: websites, internet, television programming, radio programming, newspapers, magazines, press, presentations, brochures, Public Relations, and any other means of communication.
6. A recipient RC of the Award (*Shrestha* and *Uttama*) cannot be considered for the Award again for next 2 years.
7. A nominee-RC can re-apply for the Award in future years if the eligibility criteria are met subject to Section 2 above.
8. *Ananya* Exemplar-RC can re-apply for the Award in future years if the eligibility criteria are met subject to Section 2 above.
9. The decision of IAPT in choosing the Awardee -RC is final and cannot be challenged.

To our readers

For change of address and non-receipt of the Bulletin, please write (only) to:
our New Address :

The Managing Editor
Flat No. 206, Adarsh Complex,
Awas Vikas-1 Keshavpuram, \
Kalyanpur, Kanpur-208017
Email : iaptknp@rediffmail.com
Mob. : 09935432990

This form should NOT be used as a substitute for the online Application Form. Application received in any way other than submission of the online Form will be summarily rejected.

To upload the application online, go to <https://.....>

Application Format

IAPT Exemplar-RC Award – 2024

*Please provide photos/short videos/reports/Paper cutting of the programmes wherever indicated
Please avoid repetition of information.

Have you applied for the IAPT Exemplar-RC Award before? Y/N

If Y, year of application:

If Y, was your RC the recipient the &Award: Y/N

If Y, year of RC Award:

(RC recipient of the Award need not apply for two successive years only.)

I. RC Details

1. A

2. ⁰RC: State:.....
Zone:..... (East/West/North/South/Central)

⁰RC refers to either RC or Sub-RC independently.

[&]Award refers to the 'IAPT Exemplar-RC Award'

3. Present Team Members of the RC:

Post	Name	Address/affiliation	Email-ID	Mobile
President				
Secretary				
Treasurer				
Vice President				
IAPT EC Representative of RC				
IAPT VP of the Zone				

4. Election in the year 2021 for the term 22-24

Date of election	Name	Email-ID	Mobile
Election Officer			
Elected President^			
Elected Secretary^			
Elected Treasurer^			
Elected VP^			

^ Names in Table 3 refer to the result announced after the Election. They may or may not match that given in Table 2.

5. Tentative Annual Calendar for the year: *(Provide the Calendar of events)

6. Date of submission of the calendar to the General Secretary:.....

II. RC Activities

7. Activities from Jan 2023 to Dec 2023. *Reports to be enclosed.

a. School/ College Programs

Date	Name of the Programme/Activities	Resource Person	Number of students participated	Number of Teachers participated	Feedback analysis (bar chart, pie chart or 1-9 scale)	Impact/learning outcome	Others, if any
1.							
2.							
3.							
4.							
5.							
6.							
7.							

b. Stage Shows on Physics

Name and theme of the stage shows.	Resource Person	Date	Duration (in hrs and min)	Venue of the show	No of beneficiaries	Impact/feedback

c. National Workshops/Seminars/Conferences conducted by the RC

Name of the Programme/Activities	Resource Person	Date	Duration	Number of students participated	Number of Teachers participated	Feedback analysis (bar chart, pie chart or 1-9 scale)	Impact	Remark (online/off line)

d. Other Training Programs/Special Programs conducted by the RC in recognized Institutions.

Name of the Event	Oral (Teachers/Students)	Poster (Teachers/Students)	No. of Prizes given by the RC	Highlights

e. Anveshika Activity

Name of the Anveshika:

Coordinator of Anveshika:

Name of the Programme /Activities	Resource Person	Date	Duration	Number of students participated	Number of Teachers participated	Feedback analysis (bar chart, pie chart or 1-9 scale)	Impact/Learning Outcome	Remark (online/off line)

III. National Examinations

Enrolment in IAPT Examinations from your state/union territory:

	Number of students enrolled for NSEP	Number of students enrolled for NSEC	Number of students enrolled for NSEB	Number of students enrolled for NSEA	Number of students enrolled for NJS	Number of students enrolled for NGPE	Number of students enrolled for NAEST	Total no of LM in your state the previous year
Previous year								
Current year								

IV Competitions

a. Participation in Regional Competitions

1.

Number of students enrolled	Number of Teachers enrolled for RCEWP	Names of participants nominated	Number of students and Teachers	Names of participants nominated	Number of students and Teacher	Names of participants nominated	Total no of LM in your RC in

for ¹ RCEWP		ted to the NCEW P	enrolled for ² RCIEP	ed to the NCIEP	s enrolled for ³ RCICP	ed to the NCICP	the previou s year.

¹RCEWP- National Competition of Essay Writing on Physics

²RCIEP – National Competition of Innovative Experiments on Physics

³RCICP- National Competition of Innovative Computational Physics

b. Participation in IAPT National Competitions

	Number of students enrolled for ⁴ NCEWP	Number of Teachers enrolled for ⁴ NCEWP	Number of students and Teachers enrolled for ⁵ NCIEP	Number of students and Teachers enrolled for ⁶ NCICP	Number of students enrolled for ⁷ NAEST	Total no of LM in your RC in the previous year
Previous year						
Current year						

⁴NCEWP- National Competition of Essay Writing on Physics

⁵NCIEP – National Competition of Innovative Experiments on Physics

⁶NCICP- National Competition of Innovative Computational Physics

⁷NAEST- National Anveshika Experimental Skill Test

V. Participation in Student Seminars/Annual Convention in - 2022 and 2023 from your state/union territory

Number of students enrolled at ⁸ NSSP	Number of students participated in oral presentation at NSSP	Number of students participated in poster presentation at NSSP	Number of students and teachers participated in oral presentation at ⁹ Annual Convention	Number of students and teachers participated in poster presentation at Annual Convention	
					Previous year
					Current year

⁸NSSP- National Student Seminar in Physics

⁹IAPT Annual Convention conducted at Patna (2022) and(2023)

VI Participation in ¹⁰PDP, National Webinars, National/International Conferences conducted by IAPT & RCs (excluding NSSP and Annual Convention)

Name of the Event	Name of the participant of your RC	Oral (Teachers/Students)	Poster (Teachers/Students)	Prizes secured if any	Highlights

¹⁰PDP – Professional Development Programs

VII ¹¹New Membership and Subscription

Life members (individual)	student members	Institutional Members	Overseas members	Bulletin /Journals subscription for libraries of 'institution name'

¹¹New is current year - 2024

VIII. Publications in IAPT Bulletin/Journals

	Title	Authors/Editors	Vol.no and issue no.	Page no(s)
Journals/magazines				
Articles in bulletin				
Reports in the bulletin				
Editorials				
Book reviews				
Advertisements				
Special information				

IX Outreach of Resource Persons (of the RC)

Sr. No.	Name of the resource person from the RC	Name of the activities where the resource person participated in other than your own RC
---------	---	---

1		
2		
3		
4		
5		
6		
7		
8		

X. MOU/Collaboration/Internship programmes with the RC

Sr. No.	MOUs with 'institution name'	Period for which the MoU is valid	Activities conducted with the institution	impact	beneficiaries	Institutional Membership No. and date of application
1						
2						
3						
4						
5						
	Collaborations with 'institution name'	Period for which the Collaboration exists	Activities conducted with the institution	Impact	beneficiaries	Institutional Membership No. and date of application
1						
2						
3						
	Other programmes conducted like Internship/summer schools/....					

Note: IAPT central office collaboration may not be included in RC collaborations.

XI Funds credited/debited to/from the RC Account

Account No.....

Bank.....

IFSC

Place.....

PAN.....(optional)

*Attach the Audited report of the year (1Apr 2022-31 Mar 23)

a. Credited into the account

	Funds Received (Rs) from 1 Jan 2023 – 31 Dec 2023	Date		
Balance as on 31 dec 2022				
By donations/sponsorships				
By IAPT central office (seed money)				
Others (Rs) registration fee, Corpus Fund, etc				

b. Utilization of Funds.

Name of the programme /Activities (RC sponsored or conducted)	Funds allocated (Rs)	Date	Organizing secretary/convener/coordinator	*Report/Payment Receipt to be enclosed.

c. Submission of accounts

1. Date of submission:
2. Mode of Submission: (email/Whatsapp/post/.....)
3. Audited by: (CA's name and address)

XII Best practices of the RC

XIII Any other relevant information not covered above.

By clicking submit, I certify that all the information given above is true to the best of our knowledge and belief.

I.....President/Secretary/Treasurer/VicePresident of RC..... is making this application on behalf of the Executive Committee of the RC.

Email ID for correspondence.....

Mobile No for correspondence.....

XX

This needs to be signed and pdf copy uploaded along with all the reports.

1. Name and Signature of
RC President

2. Name and Signature of
Secretary / Treasurer/ Vice President

=====

=====

To upload the nomination online, go to <https://.....>

Nomination Format
IAPT Exemplar-RC Award 2024
Please avoid repetition of information.

I.Nominator's Profile

Name:

Post in IAPT:

Email ID:

Phone:

Name of the Institution:

Address:

EC Representative of RC.....

Or VP of (E/W/N/S/C)zone.

II.Nominee-RC Profile

RC.....

State.....

Zone.....

RC President

RC Secretary.....

RC Treasurer.....

RC VicePresident.....

III.Accomplishments of the RC

IV.Recommendation

By clicking submit, I certify that all information provided in this Nomination Form is true, accurate, and correct to the best of my knowledge.

THE NEW VIEW OF THE SKY

SOLAR SYSTEM-THE EARTH & MARS

Our home planet Earth is the third planet from the sun, and only place we know of so far inhabited by living things and only world in our solar system with liquid water on its surface



The name of the earth is at least 1000 years old. Except for Earth all planet were named after Greek or Roman god and goddesses. Earth is a Germanic word which means "the ground"



Souvenir sheet depict the evalution of the Earth from *Archeozoic period to the Cainozoic period*



Varaha avatar of Vishnu associated with legend of lifting the Earth (Bhudevi) out of cosmic ocean of primordial water



Mars –is a fourth terrestrial planet referred as Red planet. It has two moons -Phobos and Deimos. It is named after roman God of War. it has been explored by robotic probe since 1960.

BULLETIN OF INDIAN ASSOCIATION OF PHYSICS TEACHERS

FOUNDED BY (LATE) DR. D.P. KHANDELWAL

VOLUME 15**NUMBER 01****JANUARY 2023****IN THIS ISSUE****EDITORIAL**

- Let us Resolve and Act: Opportunities are Knocking at your Door PK Ahluwalia 03

PHYSICS NEWS

Soumya Sarkar 06

IAPT AFFAIR

- Minutes of EC Meeting on Nov. 2022 Rekha Ghorpade 07
- Minutes of Extended Meeting Rekha Ghorpade 13
- Minutes of AGM IAPT Rekha Ghorpade 14

REPORT

- Andhra Pradesh State Level Prelims NAEST-2022 Joga. Chandrasekhar Rao 16
- Two Days Ability Enhancement Workshop for School Teachers of Rajasthan YC Sharma 18
- Birth Centenary of Pro. Babu Lal Saraf YC Sharma 20

ANNOUNCEMENT

- IAPT National Competition on Essay Writing in Physics SK Joshi 21
- IAPT Exemplar Award-23 Rekha Ghorpade 23
- IAPT Exemplar Award: Application Format 26
- IAPT Exemplar Award: Nomination 34
- IAPT Exemplar Award: Guidelines, Terms and Conditions 34

Story of Cosmology through the Postal Stamps:32-33 Yogesh Bhatnagar 2,35

*If underlivered please return to :***Dr. Sanjay Kr. Sharma****Managing Editor**

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