

**NATIONAL COMPETITION IN COMPUTATIONAL PHYSICS - 2022
(PHYSICS SIMULATIONS & SOFTWARE-BASED PHYSICS EXPERIMENTS)
(NCICP – 2022)**

The annual IAPT competition NCICP 2022 will be held during the Annual IAPT Convention. The details of venue and dates of IAPT Convention-2022 will be made available in due course of time.

Last date for submitting entry to NCICP is **31st July 2022**.

Preface

Now-a-days computers play a pivotal role in the teaching-learning process through the use of carrying out physics simulations, virtual experiments, analysis of experimental results, acquisition of data, smartphone apps and so on. Computers also find applications in numerical computations, data analysis, solving complex numerical problems in Physics and iterative calculations. Through NCICP IAPT provides a platform to the physics students and teachers to show their proficiency in using appropriate software for the development of innovative physics experiments/ simulations through this national-level competition.

About the Competition

This competition will be held in two categories: (a) Student, and (b) Teacher.

- A. STUDENT Category: The competition is open to the students of UG/PG level.
- B. TEACHER Category: The teachers at School level, as well as the UG and PG levels are eligible to participate in the competition. The participant can be even an M.Phil. / Ph.D. awarded / pursuing student or a scientist from regional / national laboratory or a science communicator in recognized institutions, etc. He / She needs not be an IAPT member.

The work to be presented should be an original one. A few selected entries will be invited for demonstrations at the annual IAPT Convention, and the participants will be paid travelling expenses for coming to the convention venue as per IAPT rules. In case of a group-participation the team leader will be eligible to receive TA from IAPT. The selected participants must physically attend the competition the setup of experiment for final evaluation to be made during the Annual IAPT Convention -2022.

The **best three presentations in each category** will be given cash awards of Rs. 7000/- , Rs. 5000/- &Rs. 3000/-, respectively and a certificate. **DECISION OF THE JUDGES WILL BE FINAL.**

Theme of the Competition:

INNOVATION (i.e. new idea, new method, new device, new algorithm involving physics) is the main theme. The following kinds of Physics-based Simulations/Experiments are included in this competition:

- 1. Experiments with software based modelling using Android phone / PC/ smartphone*
- 2. Experiments with transducers /sensors /actuators /PID interfaced with Microprocessors /PC*
- 3. Experiments using ARDUINO coupled with Android phone / PC*
- 4. Solving physics problems by simulations or by adopting numerical techniques (by using Psilab/ Matlab/ Mathematica, Spreadsheets, Fortran, C++, Python etc.)*

How to register

The detailed entry should be submitted via the Google Form: <https://forms.gle/KTWEXmnrhqv4JB4Y7>

An individual / the team leader in case of a group (*Max. four members*) must submit the following information:

1. Title of presentation,
2. Name(s) of the participant(s),
3. Institutional affiliation of each participant,
4. Address for correspondence,
5. Mobile Number(s)
6. Incorporate the following declaration; “The proposed work is original, designed and developed by the participant(s) and not published / submitted elsewhere.” Below the team leader must put signatures.

What to do next

- (i) An individual / the team leader in case of a Group must submit One pdf file, as is described in the following points, to the Google Classroom as an attachment. The links of the Google Classrooms (separately for Students [Category A] & Teachers [Category B]) are mentioned in the Google Form. Participants have to click the appropriate link before submission of the Google Form.
- (ii) The file must be named as ‘Expt-A/B-first name of the team leader’.pdf. Mind that mention A or B correctly for STUDENT and TEACHER categories, respectively
- (iii) It should contain detailed write up of their work (along with the computer program, if any), i.e. detailed theory with diagrams, procedure, observations, calculations, graphs, results and references. In the case of physics simulations, the report should include statement of the problem, formulation of the problem, flowchart, code/worksheet, test cases and visualisation of results using Gnuplot or such Open Source software. There is

no limit on the number of pages. The participant(s) should write his/her (their) name(s), affiliation(s), email(s) at the end of this file. Please mention the innovation you have incorporated with its importance regarding applications.

- (iv) Please use Times New Roman (font size 12, spacing 1.5) and margins should be appropriate (1 inch each side).
- (v) **To encourage quality participation from different Regional councils, RCs should conduct state level competitions and forward the best entries before the closing date.**

The abstracts of selected experiments will be published in IAPT monthly Bulletin (ISSN 2277-8950) after the Annual Convention.

Last date for entries to reach is July 31, 2022. Your cooperation to abide by the last date will be highly appreciated.

For any query:

Dr. Pradipta Panchadhyayee, Coordinator, NCSPE-2022

Associate Professor, Department of Physics (UG & PG)

Prabhat Kumar College, Contai; PO: Karkuli DSO, Dist-Purba Medinipur, WB, 721404

Mail id: ncicp2022@gmail.com

WhatsApp:(+91) 9476161100