

# A Report On National Workshop on Innovative Experiments in Physics

By RC-9 and RC-6 on 7<sup>th</sup> and 8<sup>th</sup> December 2019

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A National Workshop On Innovative Experiments In Physics was organized on 7<sup>th</sup> and 8<sup>th</sup> December 19 for students and teachers by Physics Department and Internal Quality Assurance Cell (IQAC) of Govt. Girls' P. G. College Ujjain which is Centre for Excellence and 'A' grade accredited by NAAC in continuous 2 cycles. The workshop was sponsored by Indian Association of Physics Teachers RC-9 and Rajasthan Chapter and College Janbhagidari Samiti.

Resource persons of the program were mentor of the workshop Dr. Y.K. Vijay Director Centre for Innovation in Science Teaching IIS university Jaipur and head of IAPT Rajasthan Chapter along with Sri Morsingh Scientific Officer at the centre and Dr. P.K. Dubey Secretary of IAPT RC-9.

Program on first day 7<sup>th</sup> December 19

## **Aim of innovative experiments is to understand fundamentals**

On the first day the workshop was inaugurated by chief guest Dr. V. Ganesan Ex-Director of UGC-DAE-Consorsrtium For Scientific Research Indore. Chairperson of the program was Dr. Ulka Yadav principal of the college. In his inaugural speech Dr. V. Ganesan stated that, aim of innovative experiments is to understand fundamentals of the subjects. Ordinary men have made important discoveries. Simple experiments do useful Job.

Mentor of the workshop Dr. Y.K. Vijay director Centre for Innovation in Science Teaching, IIS University Jaipur told in his presentation that to learn something a small effort is needed in right direction. Innovative ideas can be put to experiments that make theory understandable easily. He demonstrated and provided 10 innovative experiments using 3-4 vparallel sets to be performed by the participants. He explained the basics in detail to the participants. These experiments included (1) study of resistance of different bulbs and estimate their temperature. (2) Study of R-L, R-C and L-C-R using A.C. power supply. (3) study of magnetic interaction using ring magnets (4) study of thermal conductivity using soldering iron (5) Optical diffraction using diode lasers (6) Self adjustments of molecules (7) Rutherford scattering (8) Barrier penetration (9) Crystal defects (10) Pendulum with time period of more than 2 seconds.

Special guest of the program Dr. Nishchal Yadav lecturer in School of Studies in Physics and Sports Director of Vikram University Ujjain told that innovation acts as a nucleus around which inventions take place. He told the participants to actively engage in innovations.

In her welcome speech principal Dr. Ulka Yadav told that it is a rare opportunity for the participants to learn what is innovation and what is innovative experiments.

Convener of the workshop Dr. Vinod Kumar Gupta introduced the guests and presented theme of the workshop. 15 teachers 78 students from all 7 colleges participated on the first day. The program was conducted by the students Ku. Khushi Nagar and Noshin Fatema. Saraswati Vandana was presented by Ku. Lakshmi, Bhagyashri, Vinita and Payal. In the beginning guests inaugurated the workshop by lighting a lamp before goddess Saraswati. In the program along with participants all members of teaching and non teaching staff were present.

Program on Next day 8<sup>th</sup> December 19

### **Principle learnt through experiment always remains in memory**

Principle learnt through experiment always remains in memory. Theory evolves through experiment and experiments in turn through theory. Experiments must be qualitative and quantitative both and this is seen practical in this innovative workshop. These were the views expressed by chief guest Dr. B. D. Shrivastava Ex-Prof. of physics, School of Studies in Physics Vikram University Ujjain in the valedictory session of the two days National Workshop On Innovative experiments In Physics organized by Physics Department and IQAC, and sponsored by Indian Association of Physics Teachers (IAPT) and college Janbhagidari Samiti.

On the next day another Resource Person joined the workshop who was Dr. P. K. Dubey secretary IAPT RC-9. He demonstrated and provided 5 innovative experiments to the participants. experiments included (1) Centre of gravity (2) Anti gravity and Boyle's Law (3) Lorentz Force (4) Balancing stick (5) ring magnets

Participating students and teachers appreciated the workshop very much, they learned basic principles of physics in a simple and joyful way. They got first hand experience of performing innovative experiments in the workshop. Chairperson of the program Dr. Ulka Yadav principal of the college told that this workshop was interesting and knowledgeable. She also accepted the suggestion of establishing an Innovation Hub in the college. Convener of the program Dr. Vinod Kumar Gupta presented the report of the workshop. He narrated that nearly 15 innovative experiments were provided to students and teachers in multiple sets that were performed by them in the workshop.

In the feedback session participating teachers and students told that in the workshop we grasped physics in a simple way. Dr.Sunil Sharma, Ku. Garima Rawal ,Noshin Fatima, Poorva Sharma ,Sharan Kaur and Nidhi Pant expressed their views in the feedback session. Guests distributed certificates to the participants. Program was conducted by Dr.Nidhibala Jain and vote of thanks by convener Dr.vinod kumar gupta. All the members of teaching and non teaching staff were present.



