Report on Faculty Development Programme

The Faculty Development Programme facilitates up - gradation of knowledge, skill and intends to provide opportunities to learn latest trends, techniques in teaching learning process along with enhance the efficiency of the delivery of the matter. Seven days online FDP was attended by faculty of Physics, Centre Of Excellence Govt. College Sanjauli, Shimla, Dr. Kirti Singha & Dr. Monika Chandel on **"Quantum Physics Simulations Using Gnumeric worksheets" from August,1, 2021 to August 7, 2021** organized by **Department of Physics and Astronomical Sciences, Central University of Himachal Pradesh in collaboration with Indian Association of Physics Teachers – Regional Council 3**. The inaugural session started with chanting of Mantras by the Co-ordinator of the Programme Dr.O.S.K.S. Sastri, CUHP, followed by key note speaker address by Vice - Chancellor of **Central University of Himachal Pradesh.**

Department of Physics and Astronomical Sciences
Central University of Himachal Pradesh (CUHP) and
Indian Association of Physics Teachers–Regional Council (IAPT-RC3)
Jointly Organise an
Online Faculty Development Programme (FDP) from 1ˢᵗ to 7ᵗʰ August, 2021
on the topic
Quantum Physics Simulations Using Gnumeric Worksheets

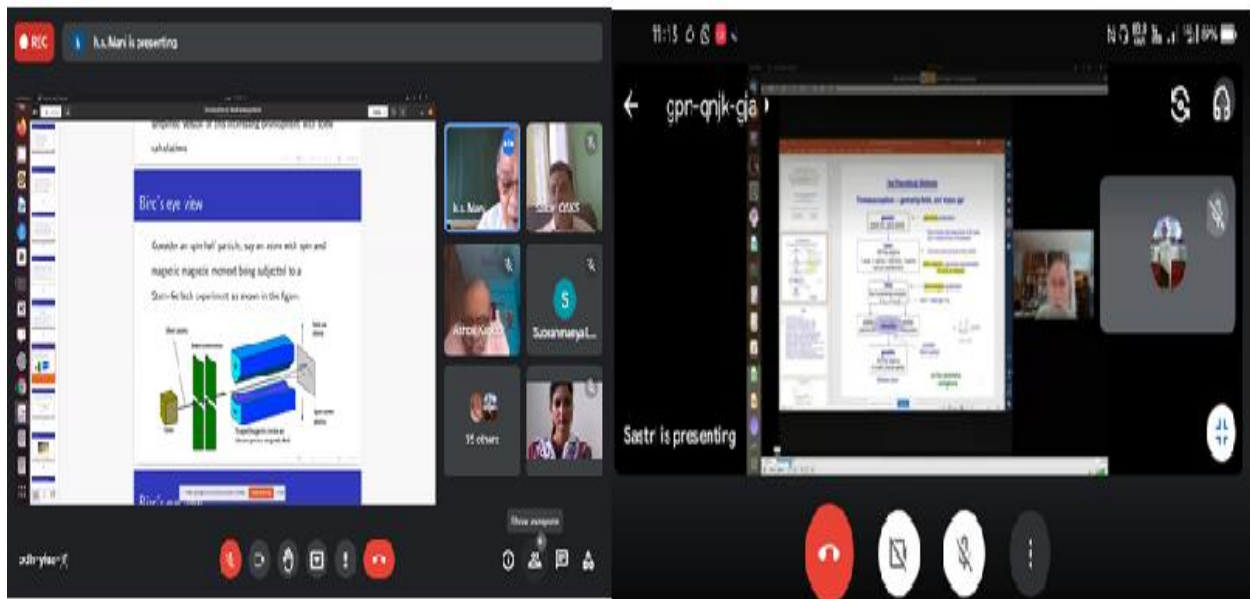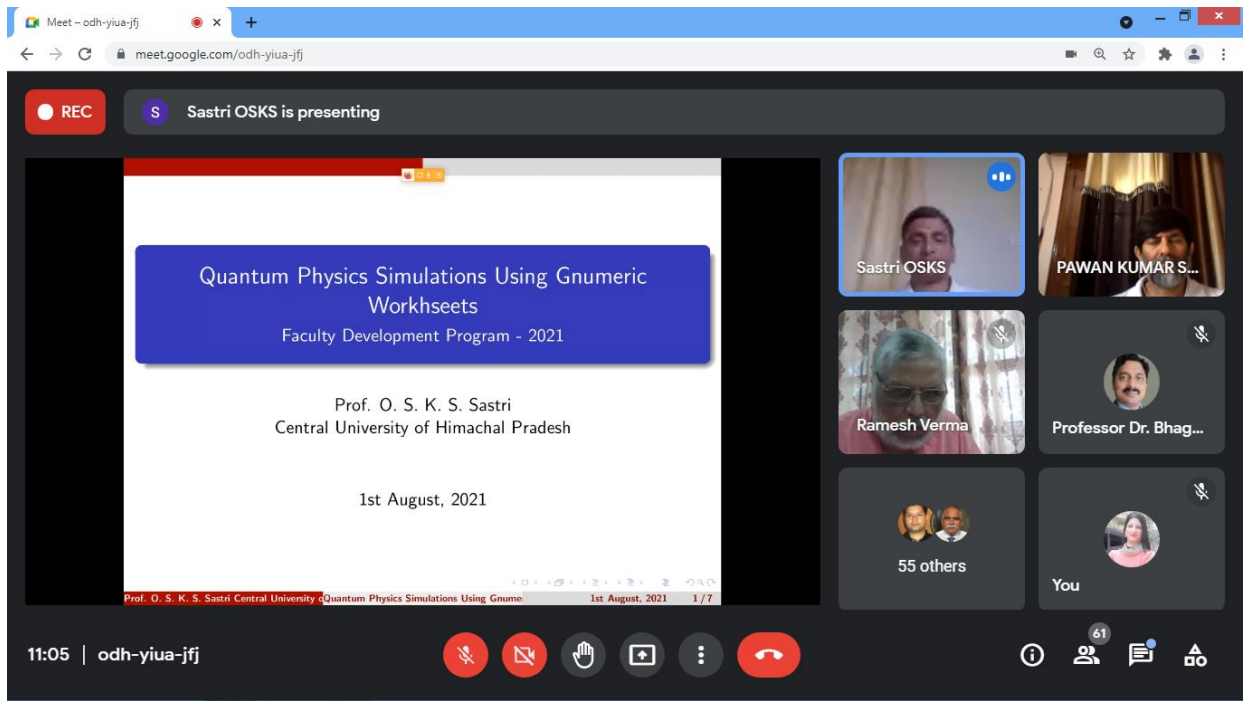--

Day-wise Program Schedule

Date	Time	Title	Resource Person
1-08-21	11:00 am	Benedectory Address	Prof Sat Prakash Bansal, Honorable Vice-Chancellor Central University of Himachal Pradesh, Dharamsala
	11:30 am	Inaugural Address: An Overview of Quantum Physics	Prof. R.C. Verma, Professor Emiretus
	3:00 pm	An Introduction to Simulation Methodology	Prof. O.S.K.S. Sastri, CUHP
	4:00 pm	Particle in 1D Box using Central Divided Difference (CDD)	Sapna Verma, RKMV, HPU Shimla
2-08-21	11:00 am	Evolution of Quantum Mechanics and its different formulations.	Prof. P. K. Ahluwalia, HPU
	3:00 pm	Finite Square Well: Analytical solutions using Bisection	Prof. O.S.K.S. Sastri, CUHP
	4:00 pm	Introduction to Numerov Matrix Method (NMM) for solving Harmonic Oscillator	Dr. Sunil Bansal, Punjab University, Chandigarh
3-08-21	11:00 am	An introduction to weak measurement and entanglement.	Prof. H. S. Mani, Institute of Mathematical Sciences, Chennai
	3:00 pm	Introduction to Matrix Methods with Sine Basis (MMS)	Prof. O.S.K.S. Sastri, CUHP
	4:00 pm	Harmonic Oscillator using MMS	Dr. Pawan Kumar Sharma, GC, HPU, Solan
4-08-21	11:00 am	Re-arranging information - Isospectral Approach	Prof. C. Nagaraja Kumar, Punjab University
	3:00 pm	Coulomb potential using CDD and NMM	Dr. Vikram, Goswami Ganesh Dutta Sanatan Dharma College, Chandigarh
	4:00 pm	Morse potential using NMM and MMS	Prof. O.S.K.S. Sastri, CUHP
5-08-21	11:00 am	Particle in a Box: A Basic Paradigm in Quantum Mechanics	Prof. V. Balakrishnan, IIT Madras, Chennai
	3:00 pm	Modeling n and p Single Particle Energies using Woods-Saxon potential	Dr. K. Vijay Sai, Sri Sathya Sai Institute of Higher Learning
	4:00 pm	Woods-Saxon potential: Implementation using NMM	Prof. O.S.K.S. Sastri, CUHP
6-08-21	11:00 am	Classical Approach to Quantum Theory. Project Work	Prof. Muralidhar (retd), National Defence Academy, Pune
7-08-21	11:00 am	An Introduction to Quantum Impedance Model	Dr. Peter Cameron, Brookhaven Laboratory (Retd), USA

Registration link: https://forms.gle/tPjU99AwdVm8Z8fa9

Dr. Pawan Kumar Sharma
(Organising Secretary)
Executive Council Member(IAPT-RC3)

Prof. O.S.K.S.Sastri
(Convenor)
Vice-President(IAPT-RC3)

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This FDP provided us an academic platform to know about the Simulations in Quantum mechanics, therefore is an alternative way to process equations through programming and codes. The whole week was completely occupied in solving and executing the problems given through Gnumeric spread sheets.

The success of the FDP was that we were given a project to solve atleast one equation through the simulations and everyone completed the assignment for the closing day. The Programme was well informative rather empirical from physics point of view and was beautifully executed to put in together theory and Gnumeric spread sheets.

Compiled & submitted by: 1. Dr. Kirti Singha

2. Dr. Monika Chandel