
HISTORICAL CONTEXT


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UNCERTAINTY
PRINCIPLE

Seminar presentation by Students.

FYUGP - 4th Semester

Subject: PHYSICS, Paper: Quantum Mechanics & Applications

paper code: PHY

Date: 09/05/2025, Time: 1.00 pm, Venue: R8

First Group: Topic: Black Body Radiation: Unveiling the Secrets of Thermal Emission.

by (1) Angshuman Sarma (874), (2) Bibab Kalita (846)

(3) Chinmoy Das (1073), (4) Kaushik Das (1034)

(5) Mringanka Barman (962)

Second Group: Topic: Wave particle Duality

by (1) Firdousi Rahman (820)

(2) Sneha Das (946)

(3) Lakshi Baishya (931)

3rd Group: Topic: De-Broglie Hypothesis & Davisson & Germer Experiment by

(1) Jyotishman Tamuly (863)

(2) partha pratim kalita (968)

(3) Jyotishman Sarma (869)

4th Group: Topic: Double slit experiment with electron and photon

by (1) pranjit Das

(2) Arup Kalita

(3) Asib Iqbal

(4) Santanu Barman

(5) payal Kashyap

5th Group: Topic: Heisenberg Uncertainty principle

by (1) Eita Bano

(2) Bhagirathi Das Robha

(3) Upasana Talukdar

6th Group: Black body Radiation

by (1) Rishi Kashyap (1093)

Signature of Teacher present

1. Dr. Hangshadhar Rajbongshi

2. Dr Dhruba J. Gogoi.

Signature of Students present:

① Payel Kashyap. (1013)
2. Firdousi Rahman (820)
3. Sneha Das (946)
4. Lakshi Baishya (931)
5. Bandita Devi (810)
6. Dimpi Kalita (960)
7. Parismita Pathak (940)
8. Tanmoy Thakuria. (1051)
9. Arup Kalita (823)
10. Asib Iqbal (906)
11. Pranjit Das (1083)
12) Santanu Barman (1074)
13) Manash Bhatta (847)
14) Debajit Kakati (868)
15) Koushik Das (1034)
16) Moriganka Barman (962)
17) Chinmoy Das (1073)
18) Bikash Kalita (846)
19) Angshuman Sarma (871)
20) Jyotishman sarma (869)
21) Rishikash yap (1093)
22) partha kalita (968)
23) Jyotishman tamuly (886)
24) Gita Boro (1006)
25) Bhagirathi Das Rabha (1064)
26) Upasana Talukdar (887)

Report: Starting from the debiration of Black body, first group explained black body energy distribution and showed that the classical theory was unable to explain black body energy distribution curve. They also stated plank's quantum theory and explained how this theory could be used to explain the energy distribution of Black body and gave the way to develop Quantum Mechanics.

Second group explained how interference, diffraction etc support wave nature and photoelectric effect, compton effect support particle nature of light and lastly established wave particle duality by stating De-Broglie hypothesis.

3rd group stated the de-Broglie hypothesis that every material particle possess wave nature of wavelength depending on its momentum. They explained how Davisson and Germer experiment established the wave nature of electron.

4th group, starting from Young's double slit experiment explained the double slit experiment done using electron beam. They also explained how wave nature of electron has can be established by this experiment.

5th group stated Heisenberg uncertainty principle and established it from mathematical point of view and experimental point of view. They also stated some application of uncertainty principle as as non existance of electron inside nucleus etc.

The seminar presentation was ended by a concluding remark by the Semeon mam teacher present i.e H. Rajbongshi