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NAAC ACCREDITED GRADE "B+"(CGPA:2.53)

Academic Visit Report:
Laboratory Visit on GM Counter Operation & Radiation Analysis
At the Department of Physics, Islamic University of Science & Technology Awantipora

Date: May 28, 2025
Venue: Islamic University of Science and Technology, Awantipora, Pulwama
Participants: A team of 12 students from the Department of Physics, accompanied by Prof Arshad Masoodi, Dr. Abida, and Mr Zahid Hussain Hafiz, visited the laboratory to gain hands-on experience in GM counter operation and radiation analysis.
Objective:
The visit provided a valuable opportunity to explore the principles and practical applications of GM counter operation and radiation analysis, and to develop a deeper understanding of radiation detection techniques. This hands-on experience reinforced theoretical concepts and enhanced analytical skills in radiation detection and safety protocols.
Summary:
This academic visit provided students with valuable hands-on experience in using the GM counter, effectively bridging theoretical learning with real-world applications in a controlled laboratory environment.
Key Activities:

1. Introduction & Safety Briefing:
    - Dr. Parvaiz Ahmad Khan provided an overview of ionizing radiation, GM counter operation, and essential safety protocols.
2. GM Counter Demonstration:
    - Students were introduced to the components of the GM counter and conducted baseline measurements of background radiation.
3. Practical Session:
    - Students performed experiments, recording count rates at various distances and analyzing shielding effects.
4. Data Analysis:
    - Students computed count rates, plotted graphs, and evaluated observed trends, discussing the limitations of experimental data.

Outcomes:

- Acquired practical knowledge of GM counter operation and radiation data interpretation.
- Strengthened understanding of radiation types, ionization mechanisms, and inverse square law principles.
- Developed awareness of radiation safety protocols and improved analytical skills in experimental physics.

Challenges:

- The limited time restricted the depth of experimentation.
- Background radiation fluctuations introduced variability, affecting data precision.

Recommendations:

1. Extending lab duration for more comprehensive experimentation.
2. Providing supplementary materials on GM counter mechanisms and radiation behavior.
3. Introducing alternative radiation detection systems for comparative analysis and

broader technical knowledge.

Conclusion:

This visit served as an academically enriching experience, reinforcing theoretical concepts through practical application. The regular incorporation of such experimental sessions into the curriculum is highly recommended to enhance student learning and technical proficiency.

Submitted by
Dr Abida

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