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Changing your Tomorrow

Davission-Germer Experiment

CLASS-XII

SUBJECT : PHYSICS
CHAPTER NUMBER: 11
CHAPTER NAME : Dual Nature of Radiation and Matter

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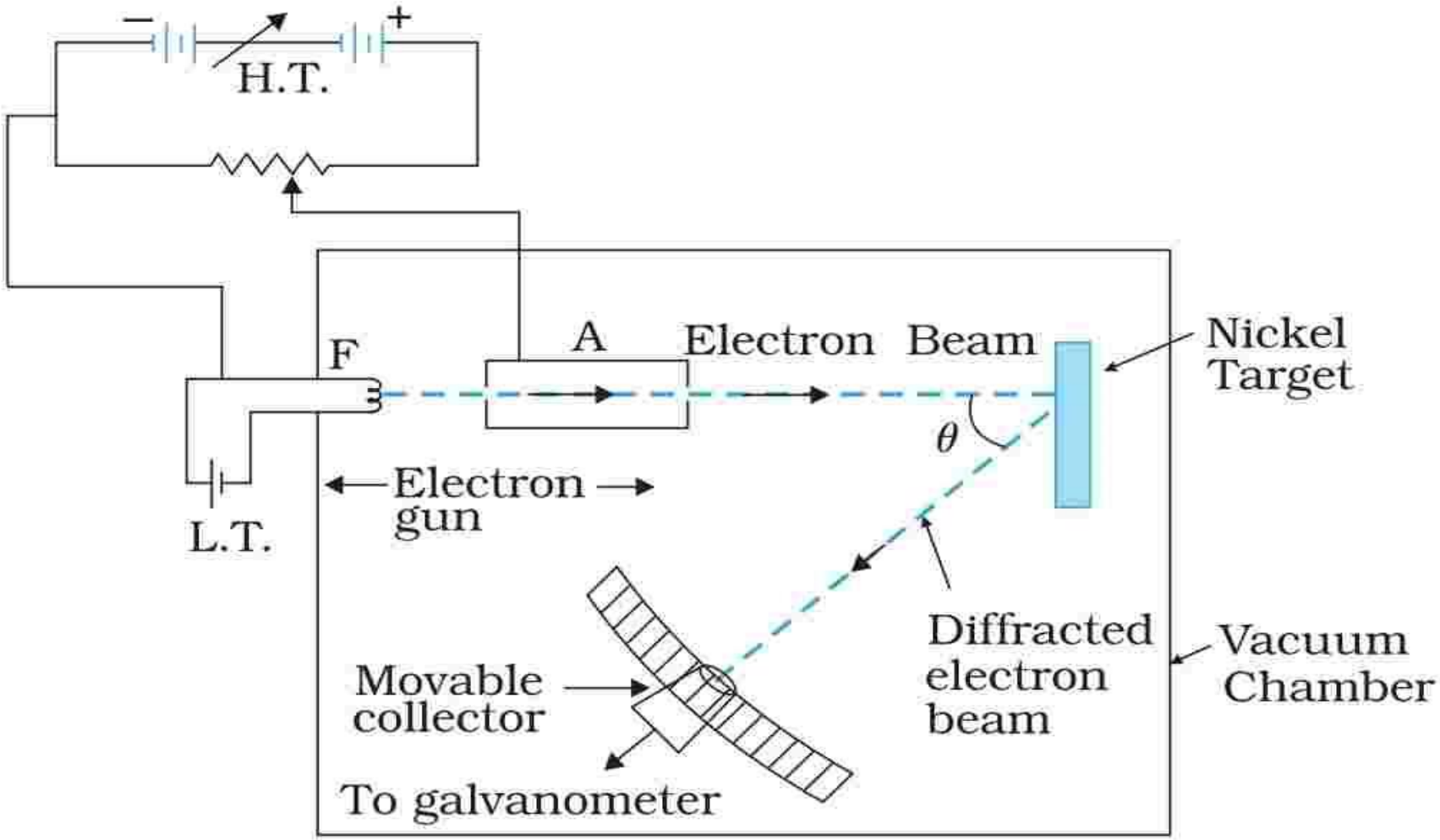
LEARNING OUTCOME

- To study wave nature of electrons.
- To understand existence of the de-Broglie wave for slow-moving electron.

Davission-Germer Experiment



Confirmation of wave nature of e^- by the experiment

According to Bragg's law.

For the 1st order diffraction max

$2^{nd}\sin\theta = \lambda$

$\rightarrow 2\left(2.15\times10^{-10}\right)\sin 50^0 = 0.165\text{nm}$

According to de-Broglie $\lambda = \frac{1.227}{\sqrt{V}}\text{nm} = \frac{1.227}{\sqrt{54}} = 0.167\text{nm}$

There is a close agreement between the experimental value (i.e 0.165 nm) given by Division and Germer and the estimated value by de-Broglie

THANKING YOU

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