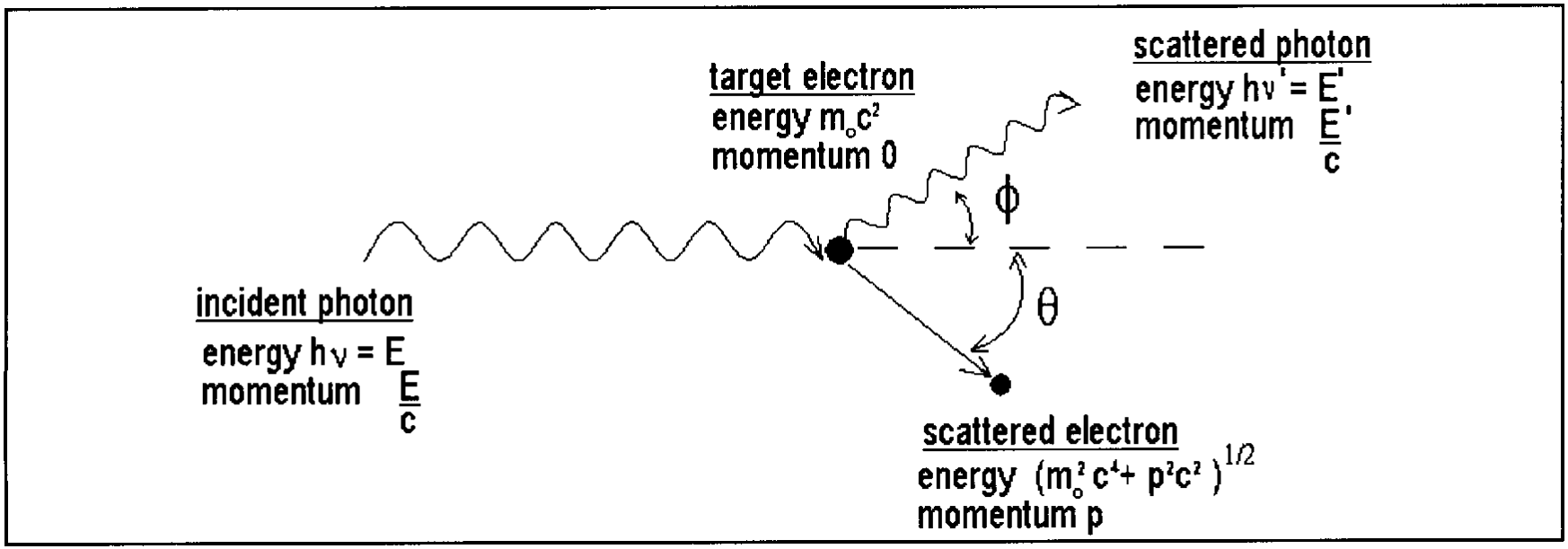
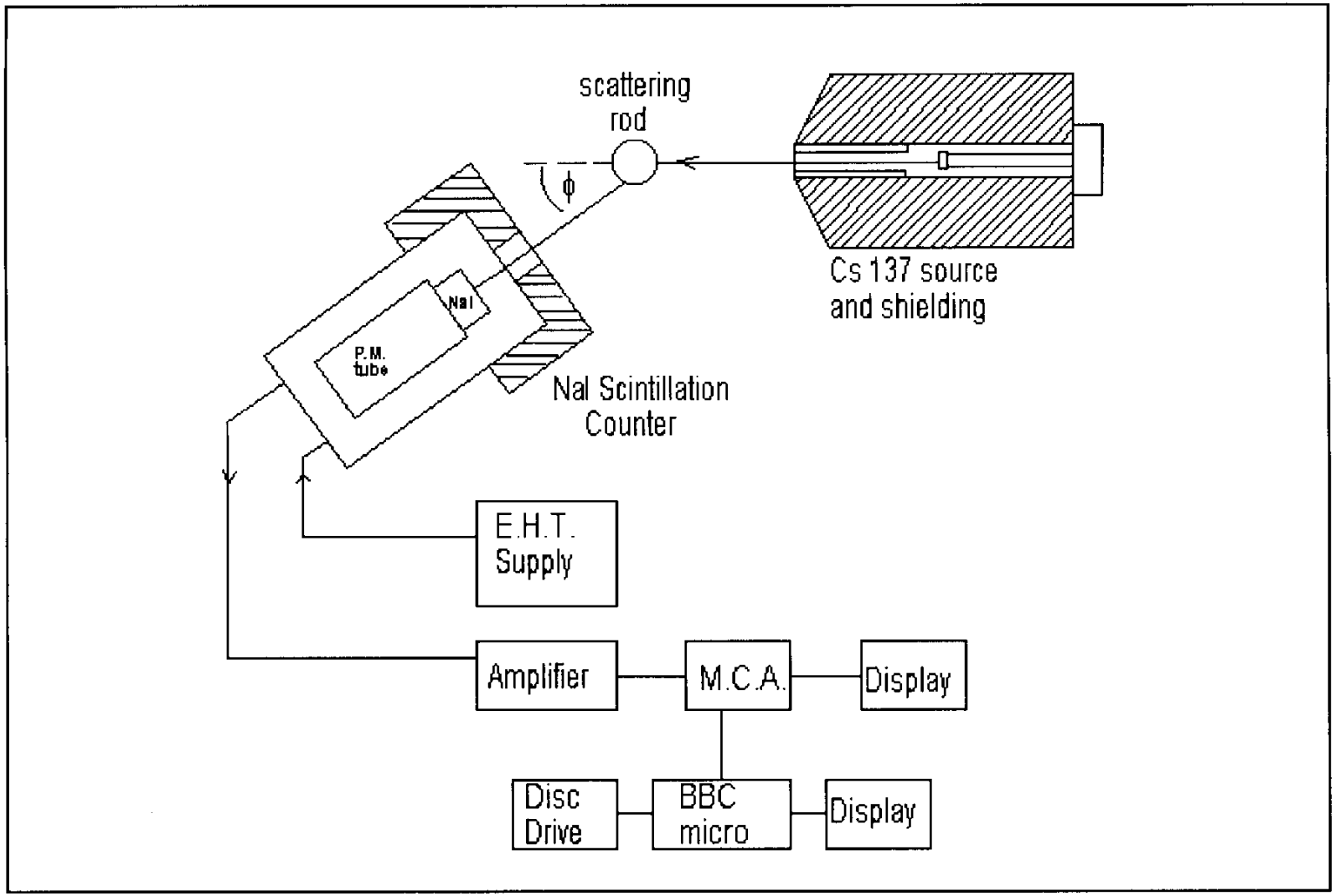
Consolidation exercise :

Analysis of the Compton scattering experiment from Lab-III

Reminder of the context of the Compton scattering experiment

(see "Design" module earlier)




scattering
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M.C.A.
Display
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Display

Problem spec:

A single run of the Compton experiment will produce a data file containing measurements of photon energy and rate as a function of angle. The file consists of several ascii lines, each containing:

```
angle  energy  uncertainly_on_energy  rate uncertainty_on_rate
eg:
10   600   20    50    7
20   560   20    40    6
...
```

You are required to write an analysis suite which analyses this data in order to obtain the value of the electron mass which best fits this data (the functional form of energy -vs- angle depends upon the electron mass).

Requirements:

- ⇒ **read the data from the file**
- ⇒ **print out the data set for visual verification**

- ⇒ **fit the known functional form of the energy -vs- angle to the data points using a χ^2 minimisation procedure to obtain the best mass**

- ⇒ **print the result out**