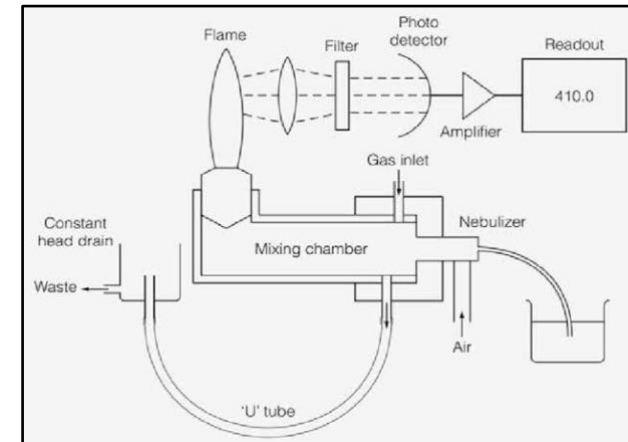
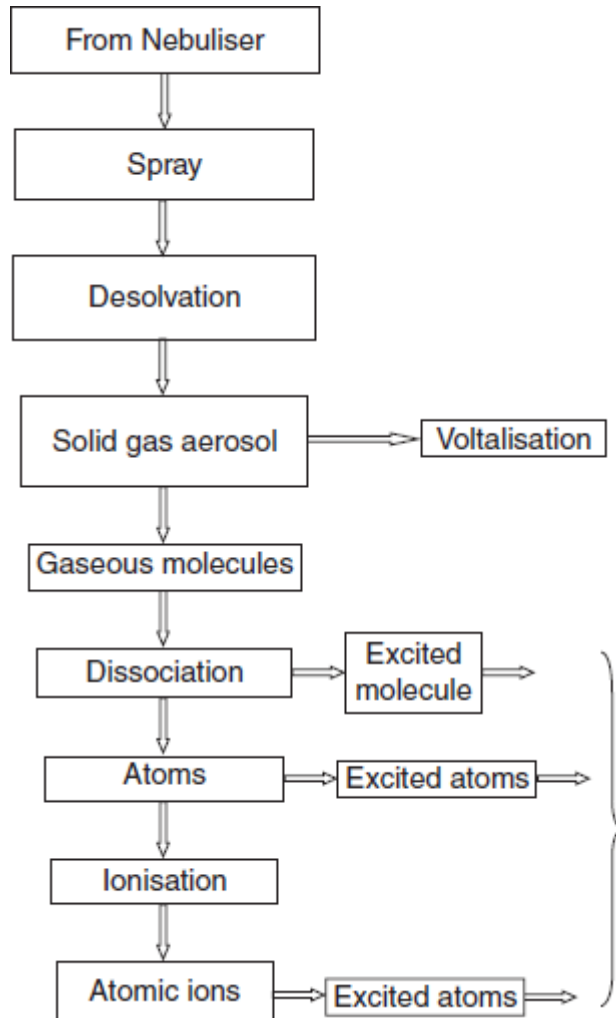


# Flame photometer

## Flame photometer:-

### Principle:-



### INTERFERENCES:-

Two type of interference of flame photometer

- 1) Chemical interferences
- 2) Spectral interferences

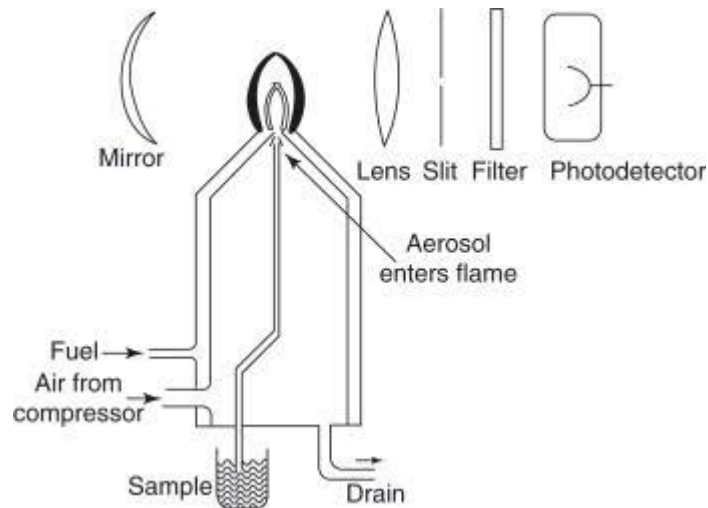
- 1. Chemical interferences:-** The a species in a flame reacts with the atom as a result emission is decrease reaction of chemical calcium and a soluble.
- 2. Spectral interference:-** The a emission of species in the flame occurs at the same wavelength as a compound being measured. when a solution of chemical calcium and sodium is atomized into the flame, where is Sodium is to be measured at 5889.

## Applications:-

- a) The use of gas flame as a source of excitation for Atomic emission is known as flame photometry.
- b) This technique now usually particularly for the determination of alkali and alkaline earth metal.

## Instrumentation:-

### 1)BURNER



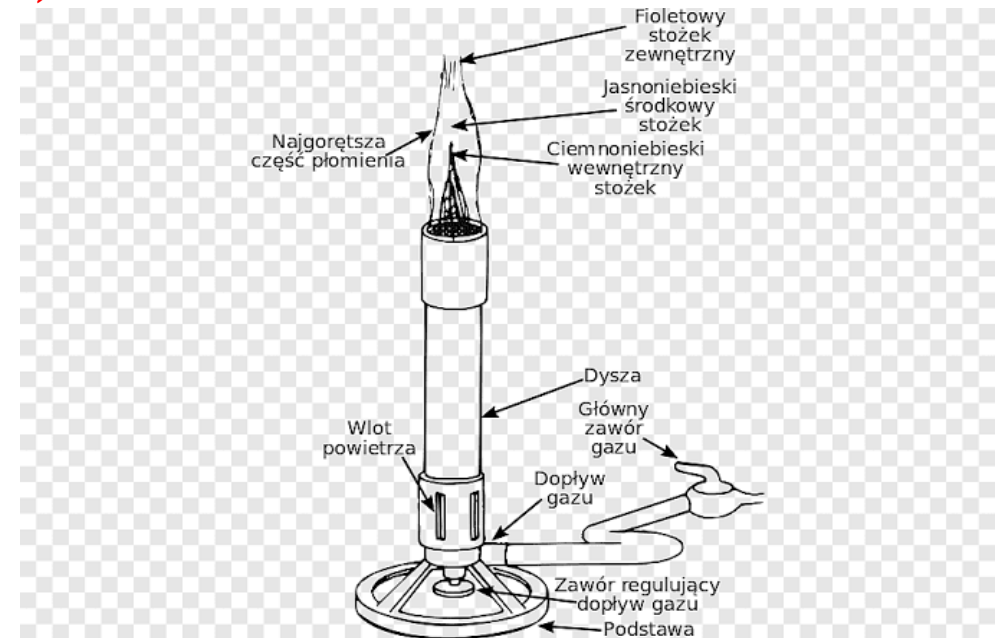
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Flame used in flame photometer must process following function-

It should process ability to evaporate liquid from sample solution resulting formation of solid residue.

Temperature of flame which is primary responsible for occur of above mentioned process is controlled by several factors which summarised as follows:

### I)Meker burner:-

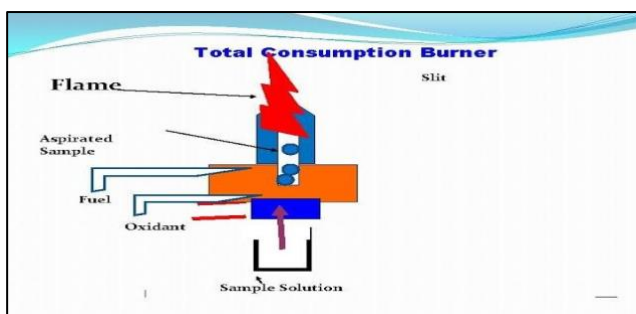


- The used earlier and employed natural gas and oxygen as this burner produced low temperature and

low excitation energies, this was generally used for study of alkali metals only.

**ii) Total consumption burner:**

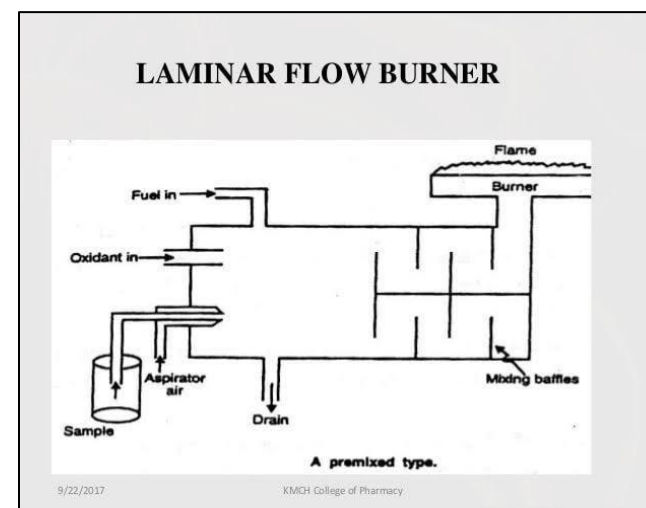
Typical total consumption burner shown in figure.



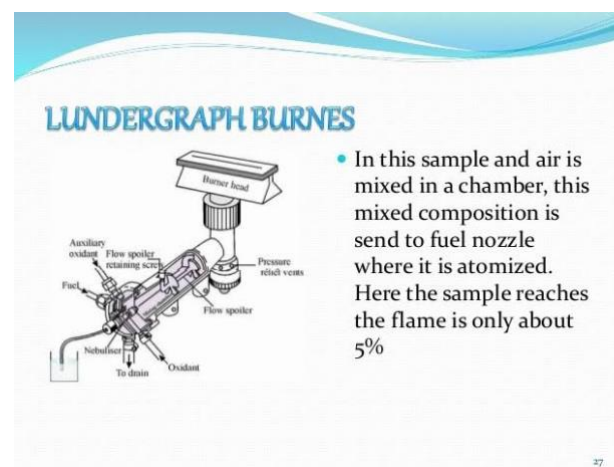
### iii) Premix of laminar-flow burners:-

typical premix or laminar-flow burners is shown.

A laminar flame may be formed in one of several possible flame configurations. The inner structure of a laminar premixed flame is composed of layers over which the decomposition, reaction and complete oxidation of fuel occurs.



iv) Lunder graph burner



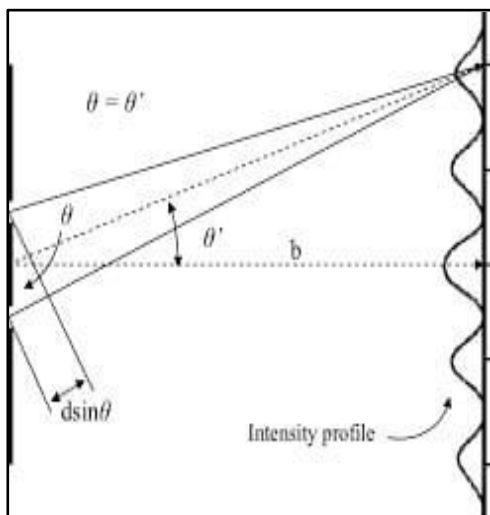
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## 2) Mirrors

- The radiation from flame of emit all directions in space.
- The of radiation is lost and loss of signal results.

## 3) Slits

- with best equipment entrance and exist slits are used before & after dispersion of element



**Reference:-** Instrumental method of chemical assay (B.K Sharma) Page No. -422-423 (Principle) 430-432 (Instrumentation) 431-439 (Interferences) 441-442 (Applications) Pharmaceutical drug analysis Page No. – 431-432 (Instrumentation)

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**CLASS:-**FINAL YEAR B PHARM

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# REFERENCE

Page