

# Comparison between atomic absorption and flame emission spectroscopy and Atomic fluorescence spectroscopy

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## Comparison between FES and AAS

Flame Emission spectroscopy	Atomic Absorption spectroscopy
1. Amount of light emitted by excited atom is measured.	1. Amount of light absorbed by ground state atom is measured.
2. Absorption intensity and signal response greatly influenced by temperature variation.	2. Absorption intensity and signal response does not depend upon temperature.
3. Beer's law is not obeyed.	3. Beers law is obeyed.
4. Intensity of emitted radiation is directly proportional to the number of atoms in excited state.	4. Intensity of absorbed radiation is directly proportional to the number of atoms in ground state.
5. Relation between emission intensity vs. concentration is not much linear.	5. Absorption intensity vs concentration of analyte is much linear.
6. Atomization and excitation flame used.	6. Atomization flame used.
7. Intensity vs concentration data is obtained.	7. Absorbance vs concentration data is obtained
8. Limited to alkali and alkali earth metals.	8. Useful for more than 70 metals.

## Difference between AAS & FES

FES	AAS
Measurement of emitted radiation forms the basis of FES.	Measurement of intensity of absorbed radiation is basis of AAS.
Intensity of emitted radiation is directly proportional to the number of atoms in excited state.	Intensity of absorbed radiation is directly proportional to the number of atoms in ground state.
Here excitation process and signal response is influenced by flame temperature.	Here absorption intensity and signal response is independent to temperature.
Relationship between emission intensity Vs concentration is not that much linear.	Absorption intensity Vs concentration is very much linear.

## Arrangement of light source is also different in AAS, AFS, FE

# Atomic Absorption/Emission/Fluorescence Spectroscopy



