



# Atomic Emission Spectroscopy (AES) & Atomic Absorption Spectroscopy (AAS)

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# IIOs

Identify Atomic Emission Spectroscopy

01

02

Identify Atomic Absorption Spectroscopy

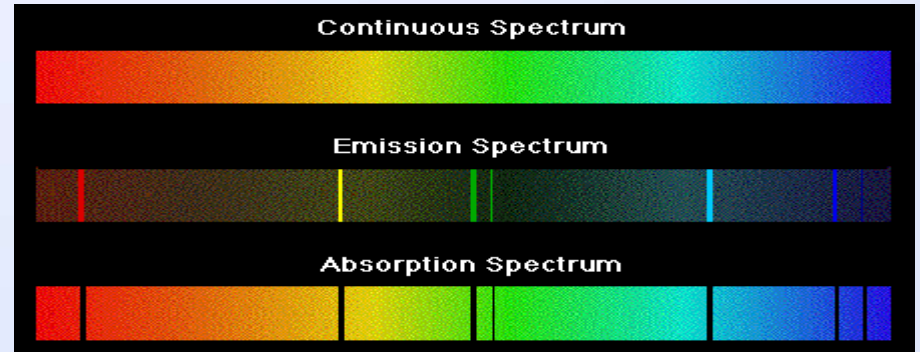
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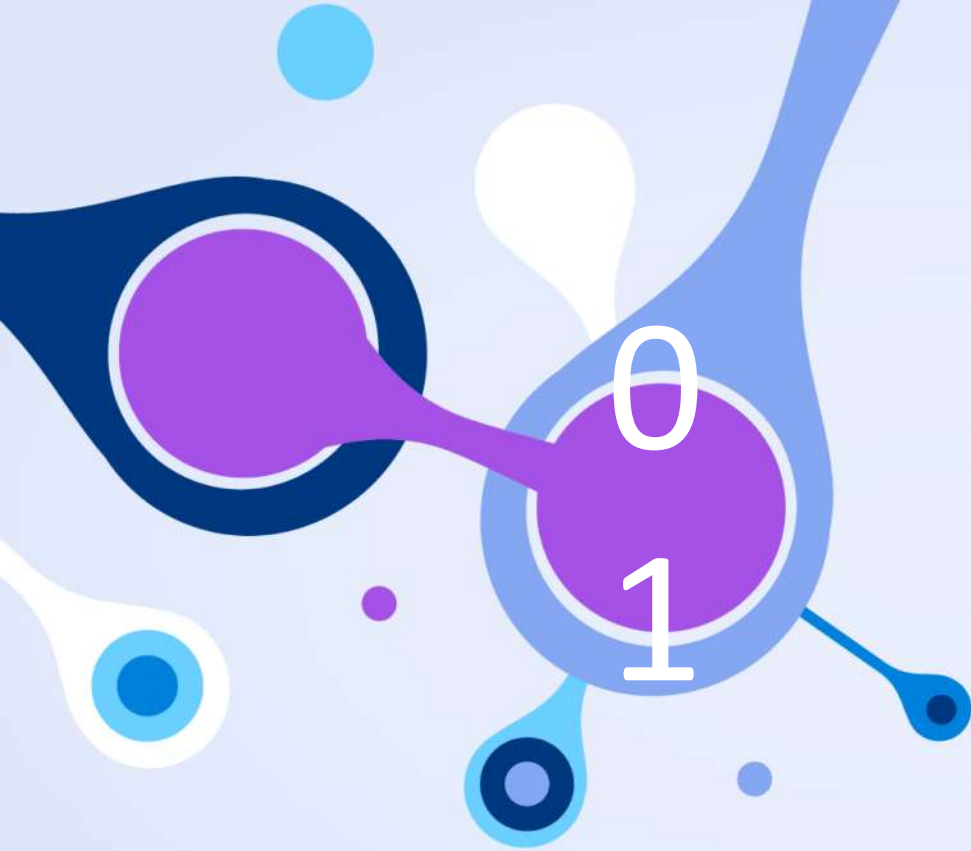
Compare between Atomic Emission Spectroscopy (AES) and Atomic Absorption spectroscopy(AAS)

# Introduction

For analytical spectroscopy, there are two main categories of instruments - based on either atomic absorption or atomic emission.

Both types of instruments use technologies based on quantum mechanics, where electrons make discrete transitions from one energy state to another.






# Identify Atomic Emission Spectroscopy

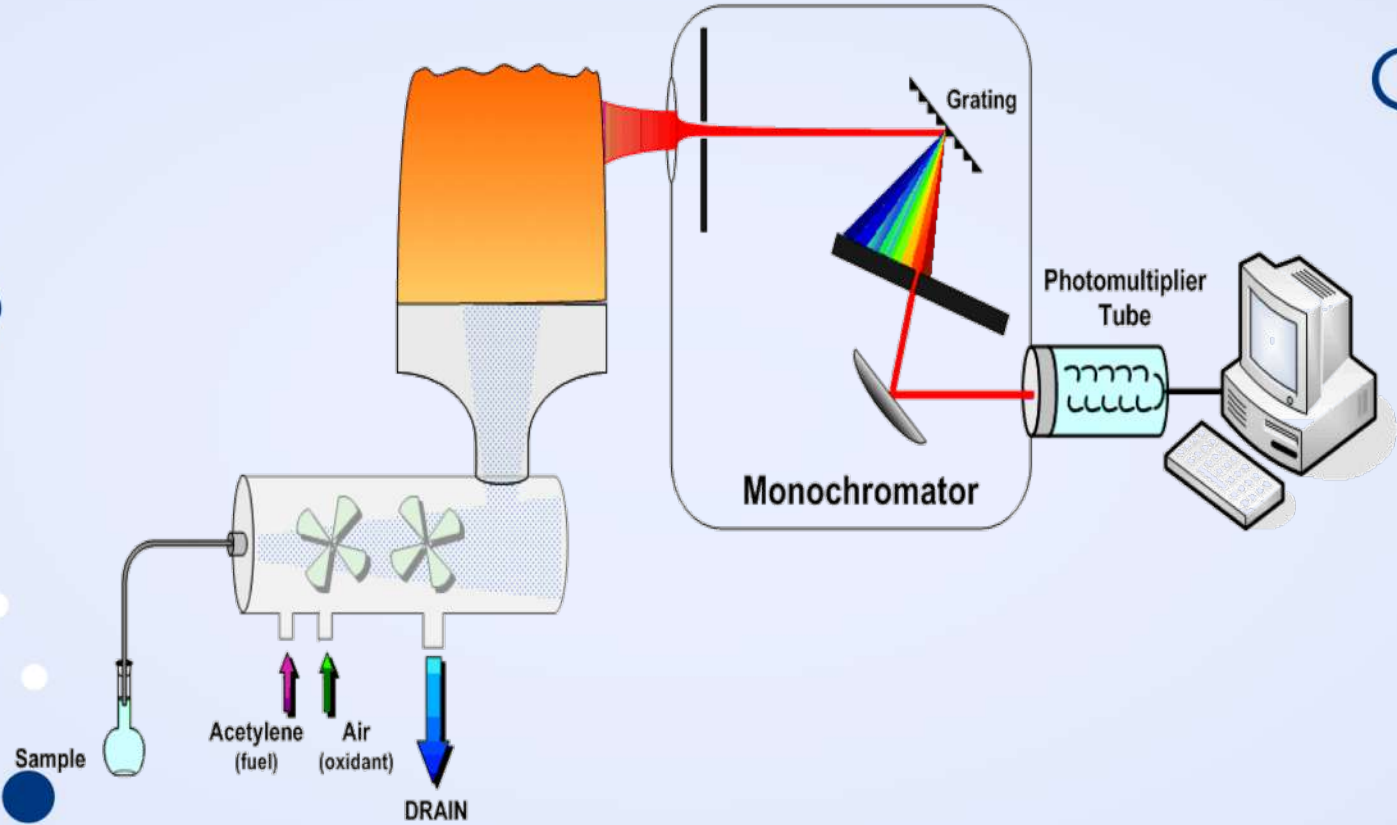


# Atomic Emission Spectroscopy (AES)



When energy is absorbed by electrons of an atom, electrons move from lower energy levels to higher energy levels. These excited electrons have to radiate energy to return to ground states from the excited state, which is unstable. The emission spectrum is formed by the frequencies of these emitted light.

# Atomic Emission Spectroscopy



# Identify Atomic Absorption Spectroscopy

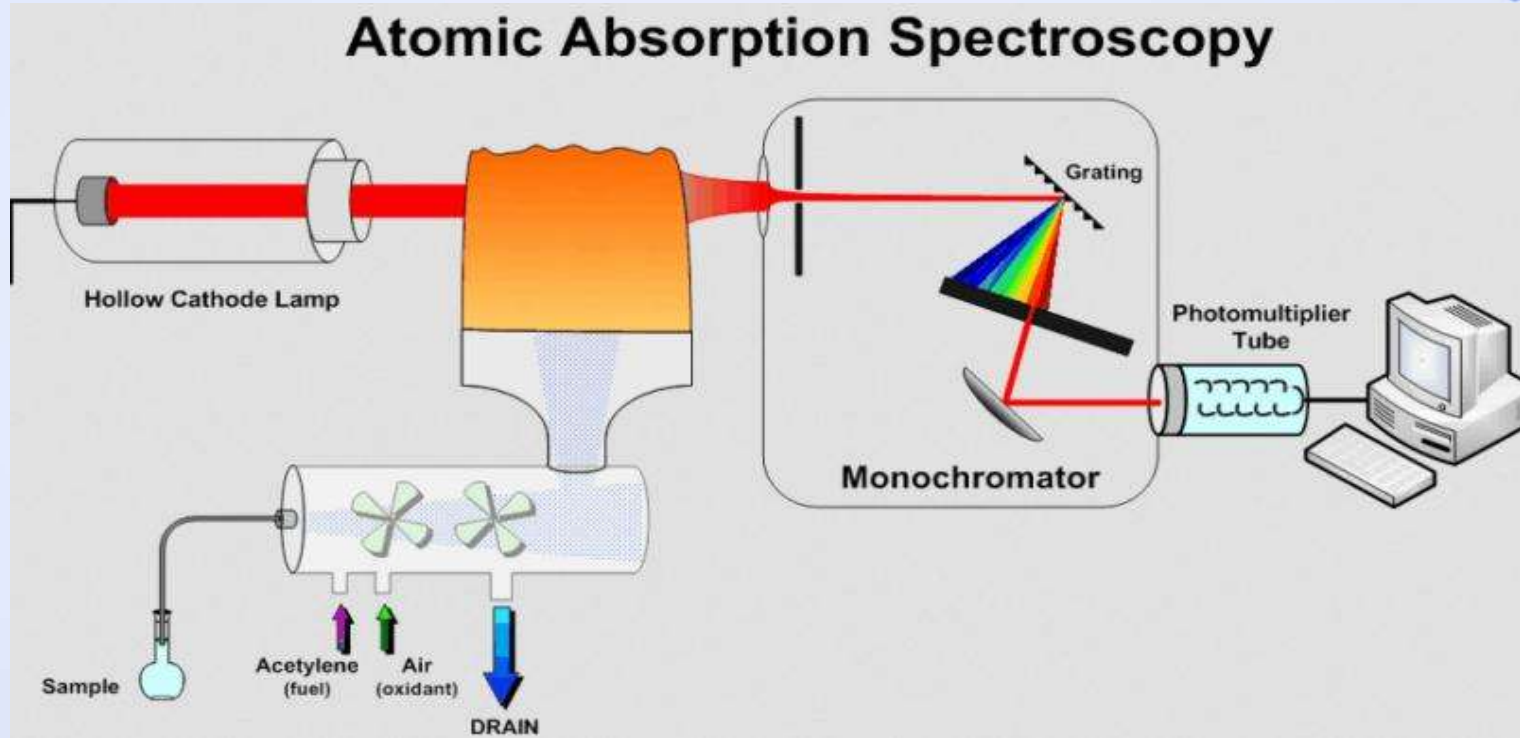


# Atomic Absorption Spectroscopy (AAS)

- Atomic absorption spectroscopy is a spectroanalytical procedure for the quantitative determination of chemical elements, using the absorption of optical radiation by free atoms in the gaseous state .
- It detect concentration of elements present in the sample . Use to detect metals



# Methodology of Absorption spectroscopy



Compare between  
Atomic Emission  
Spectroscopy (AES) and  
Atomic Absorption  
spectroscopy(AAS)



<b>Property Used to Compare</b>	<b>Absorption Spectra</b>	<b>Emission Spectra</b>
Energy Consumption	is produced when atoms absorb energy.	is produced when atoms release energy.
Appearance	show dark lines or gaps.	show colored lines.
Energy of Atom	An atom obtains a higher energy level when an absorption spectrum is given by that atom	given when an excited atom obtains a lower energy level.
Wavelength	account for wavelengths absorbed by a substance..	account for the wavelengths emitted by a substance.



# Summary

- Analytical spectroscopy, there are two main categories :atomic absorption(AAS) and atomic emission(AES).
- The emission spectrum is formed by the frequencies of these emitted light.
- Absorption spectrum is constituted by the frequencies of light transmitted with dark bands.
- Property Used to Compare for atomic emission spectroscopy (AES)/Absorption spectroscopy(AAS):Energy Consumption, Appearance, energy of atom and wavelength.

# References

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Thank  
you for  
listening

