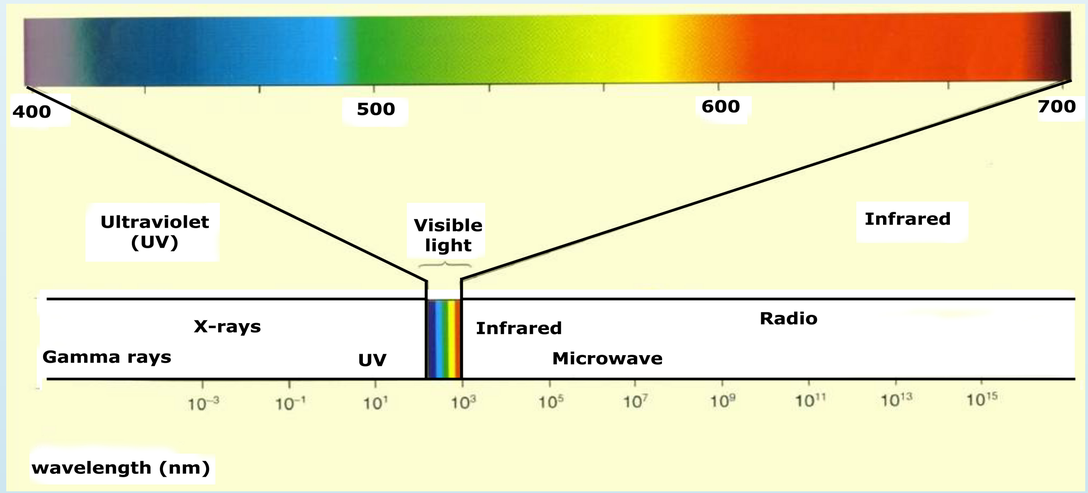
Chemical Fingerprints

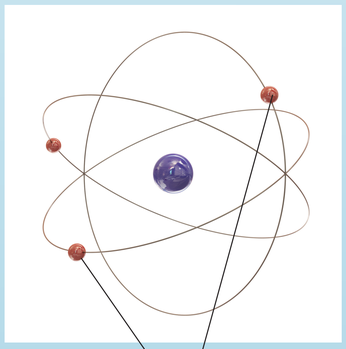
Every atom or molecule has a unique ‘fingerprint’, which is formed from the ‘electromagnetic radiation’ it absorbs and releases. Even across space we can use these fingerprints of radiation to identify them.

The electromagnetic spectrum

The light that we see is just one form of the electromagnetic radiation that atoms and molecules absorb or give off. The spectrum extends well beyond the narrow window that our eyes can see. To see the whole spectrum we use special equipment.

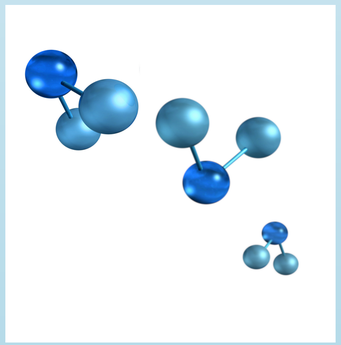


Types of radiation



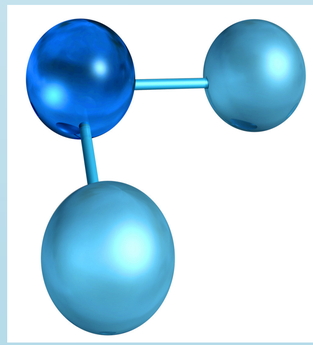
Visible & UV

The radiation that we see is known as visible light/ radiation. Visible radiation interacts with the electrons in atoms and molecules. Ultraviolet radiation works in a similar way.



Radio & Microwave

Radio and microwave radiation interacts with the way molecules rotate.



Infrared

Infrared radiation interacts with the vibration motion of the bonds that connect atoms in a molecule.

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