

- 7 (a) Explain how emission line spectra provide evidence for discrete electron energy levels in isolated atoms.

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- (b) X-rays are produced when high speed electrons collide with a metal target.

Fig. 7.1 shows how the intensity of the X-rays varies with their wavelength.

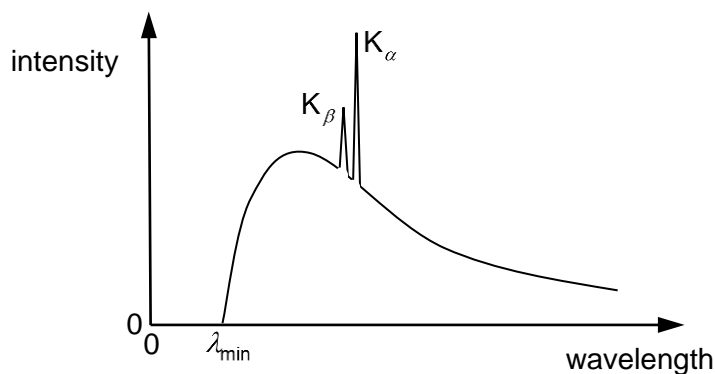


Fig. 7.1

Explain the origins of the following features in Fig. 7.1:

- (i) The wavelength of the characteristic line K_{α} is greater than the wavelength of K_{β} .

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- (ii)** There is a minimum wavelength λ_{\min} for the X-rays.

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