Einstein showed that the shorter the wavelength of a wave, the more energy its associated photon carries through space. Please, comment this statement
Answer

This statement is not Einstein but Planck.

The Planck constant was first described as the proportionality constant between the energy (*E*) of a photon and the frequency (*ν*) of its associated electromagnetic wave. This relation between the energy and frequency is called the **Planck relation**:

$$E = h\nu\,.$$

Since the frequency ν, wavelength *λ*, and speed of light *c* are related by $\lambda\nu = c$, the Planck relation can also be expressed as

$$E = \frac{hc}{\lambda}.$$