COLOR IMAGE PROCESSING

- Color is a powerful descriptor and is used for object identification and extraction.
- Colors are illumination effects caused by light waves having different wavelengths.
- Color image processing is divided into 2 categories:

I. Full Color processing

II. Pseudo color processing

- Color images are usually 16bit or 24 bit.

COLOR FUNDAMENTALS

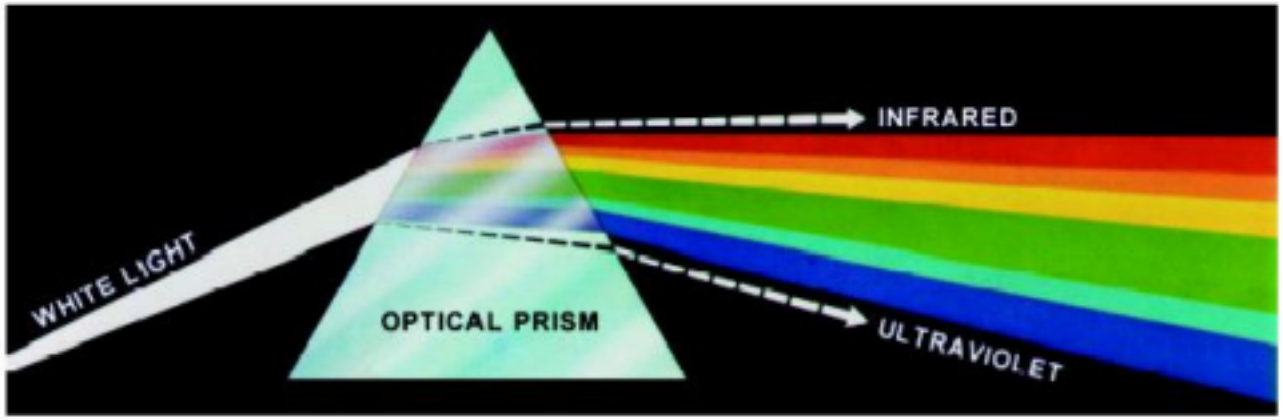

FIGURE 6.1 Color spectrum seen by passing white light through a prism. (Courtesy of the General Electric Co., Lamp Business Division.)

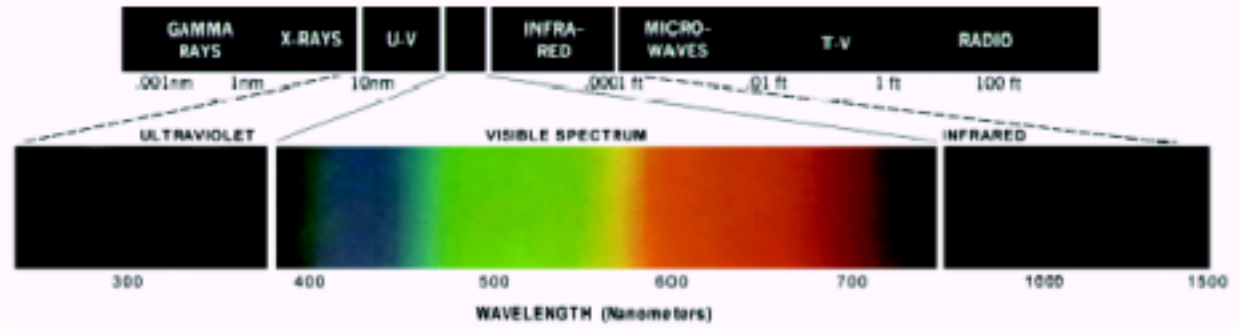

FIGURE 6.2 Wavelengths comprising the visible range of the electromagnetic spectrum. (Courtesy of the General Electric Co., Lamp Business Division.)

- Three characteristics that distinguishes one color from another:-

  Intensity

  Hue

  Saturation

- **Intensity** is use to express brightness of a color.
- **Hue** is associated with wavelength in a mixture of light waves. It is the dominant color as perceived by an observer.

- **Saturation** is the amount of white light mixed with a hue.

  Pure spectrum colors are fully saturated.

  Colors such as pink(red &white) lavender(violet & white) are less saturated.

  Saturation is expressed as percentage and it varies from 0-100%.

  Saturation of pure white light is 0% and that of pure color light is 100%.

- Two types of light

  Achromatic light

  Chromatic light