

light-emitting diode (LED)

Semiconductor (often a combination of gallium, arsenic and phosphorous or gallium and nitrogen) containing an n region (where electrons are more numerous than positive charges) separated from a p region (where positive charges are more numerous than negative charges). Upon application of a voltage, charges move and emission of ultraviolet, visible or infrared radiation is produced each time a charge recombination takes place. Although a LED emits incoherent monochromatic light, normally a very narrow frequency range is obtained.

Notes:

1. This effect is a form of electroluminescence.
2. The colour depends on the semi-conducting material used, and can be ultraviolet, visible or infrared.
3. Organic light-emitting devices (OLEDs) contain diodes made of small molecules or made of polymeric materials. The latter are sometimes called PLEDs.

Source:

PAC, 2007, 79, 293 (*Glossary of terms used in photochemistry, 3rd edition (IUPAC Recommendations 2006)*) on page 364