



UNIVERSITY OF HILLA
College of Engineering Technologies
Department of Medical Devices Technologies

Fundamental of Electrical Engineering(DC)

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First Stage

LAB3

Light Emitting Diode
characteristic(LED) الدايمود الباعث للضوء

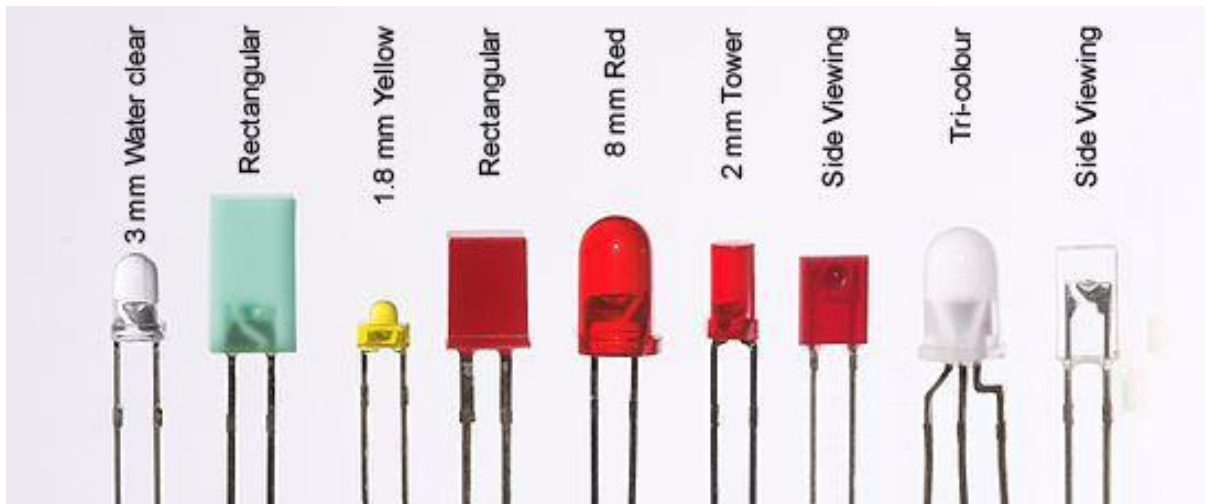
Light Emitting Diode characteristic(LED)

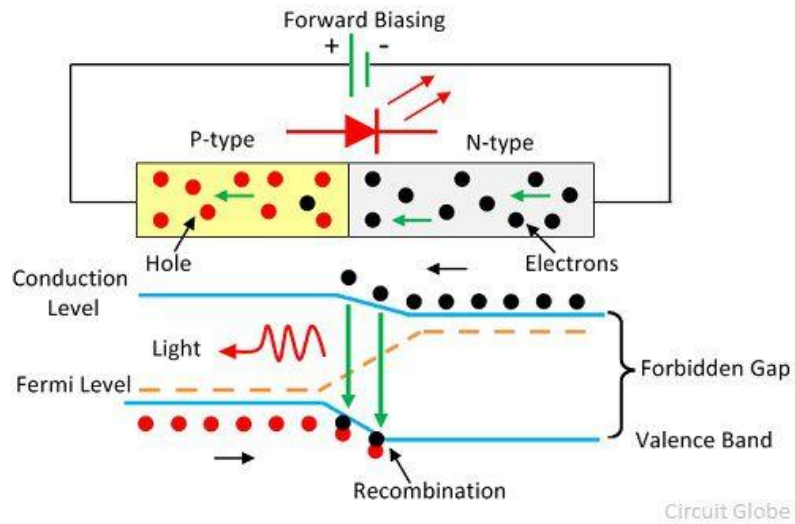
الدايود الباعث للضوء

الغرض من التجربة **objective** / دراسة خواص الدايود الباعث للضوء

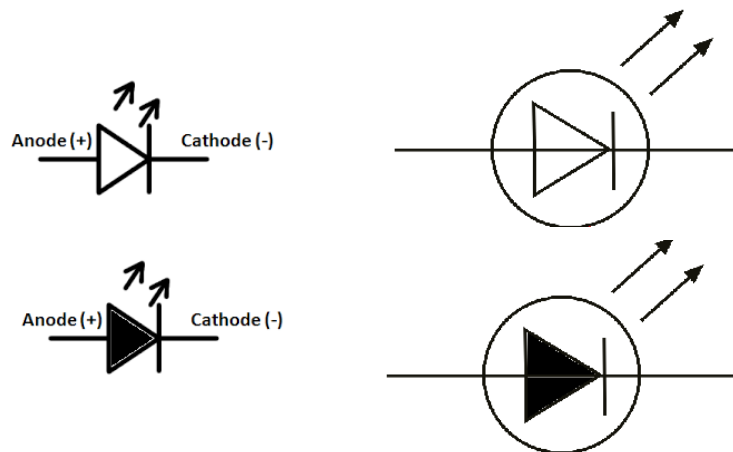
theory /

In this type of diode, there are special materials that make it light up when an electric current passes through it in the case of forward bias. The light-emitting diode (LED) consists of one end of the anode and the other end of the cathode. The two ends inside the light-emitting diode are separate and isolated between them. A short distance from the vacuum, and when the light-emitting diode is connected to an electrical current, the electrical current is transmitted from the anode to the cathode. The following figures explain the types of photodiodes and how they work.

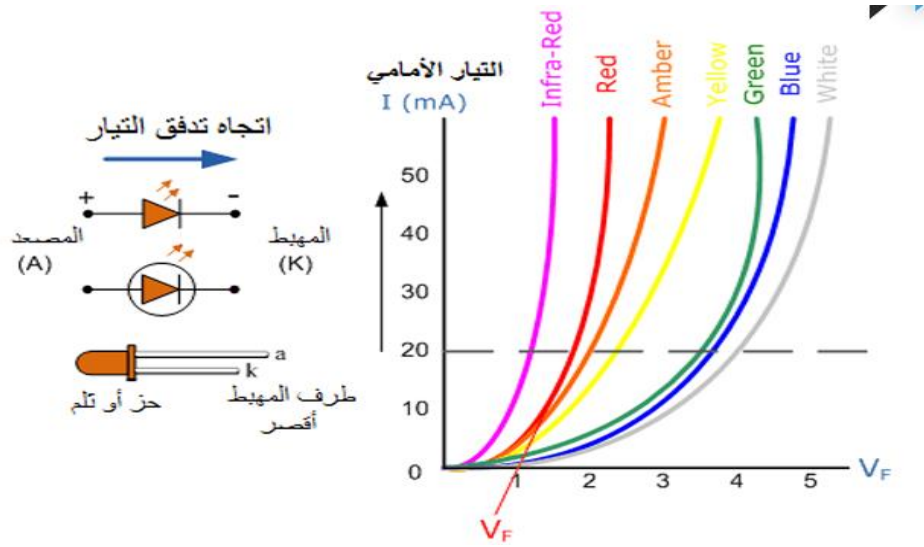




There are many symbols that indicate a light-emitting diode in electrical and electronic circuits. All symbols share one or two arrows pointing outward. Therefore, the form of the light-emitting diode in electrical and electronic circuits is as follows: -

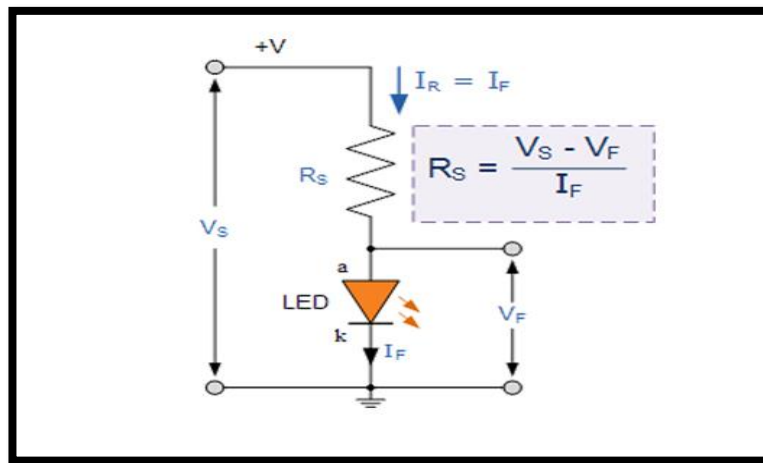


جهد التحيز الأمامي $V_F @ 20mA$	اللون	طول الموجة	مادة نصف الناقل
1.2v	Infra-Red	850-940nm	GaAs
1.8v	Red	630-660nm	GaAsP
2.0v	Amber	605-620nm	GaAsP
2.2v	Yellow	585-595nm	GaAsP:N
3.5v	Green	550-570nm	AlGaP
3.6v	Blue	430-505nm	SiC
4.0v	White	450nm	GaInN



طريقة العمل/

1. تسجيل القيمة المقاسة للمقاومة (R) وإنشاء الدائرة في الشكل التالي في البداية، قم بتعيين جهد التغذية إلى (V)



2. زيادة جهد التغذية E حتى يلاحظ "الضوء الأول". تسجيل V_D و V_R باستخدام الملتيميتر.
3. استمر في زيادة جهد التغذية E حتى يتم إنشاء "سطوع جيد".
4. قم بتسجيل V_D و V_R باستخدام الملتيميتر.