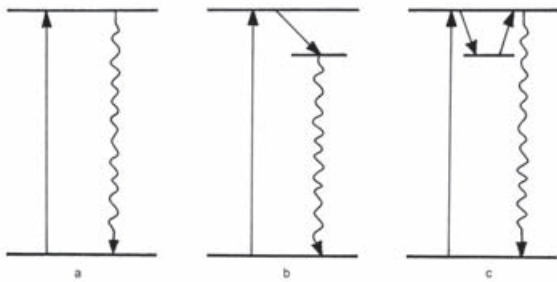


### 1.4 Luminescence

The term luminescence is sometimes also known as fluorescence, or photoluminescence. The process involves a material absorbing radiation and then reemitting light. The energy may be re-radiated almost immediately or it may take several hours. There are a number of ways that the material can hold the energy and this impacts on length of the time the energy is stored and the amount of energy that is re-radiated.



In Figure 31 image (a) represents simple luminescence where the material absorbs the energy and the next transition is to re-radiate the energy. In (b) some of energy in the material is lost via another process before re-radiation takes place. In (c) some of the energy is dissipated and the material falls into a state where it cannot re-radiate until it is restored to the higher energy level. This process can lock energy into materials and is the basis of some 'glow in the dark' materials.

Figure 31  
Simplified representations of energy level schemes in luminescence.