

Potential energy

The amount of energy possessed by a body by virtue of its position, state or configuration is known as potential energy of the body.

[Thus, potential energy is the energy that can be associated with the configuration (or arrangement) of a system of objects that exert forces on one another. Obviously, if configuration of the system changes, then its potential changes.

Potential energy takes many forms. For example:

- (i) Because of gravitational attraction of masses towards each other, arises the gravitational potential energy. This type of energy is hidden until the object is allowed to fall.
- (ii) Potential energy can be stored in objects by compressing them, stretching them, bending them or twisting them in shape. This is called elastic potential energy. It can be converted into other forms of energy by allowing the object to regain its origin shape.
 - When we wind the spring of our watch, potential energy is stored in the spring on account of configuration of the turns of the spring. As the spring unwinds, it works to move the hands of the watch. Thus, the wound spring has the potential energy to do the work.
 - Again, it is due to potential energy of the compressed spring in a loaded pistol that the bullet is released with a large velocity on firing the pistol.
 - Similarly, when a stretched bow is released, the arrow goes forward with a large velocity on account of potential energy of the stretched bow.
- (iii) Batteries contain potential energy by separating charges that are attracted towards each other. This potential energy can be transformed into other forms of energy by completing the circuit.]