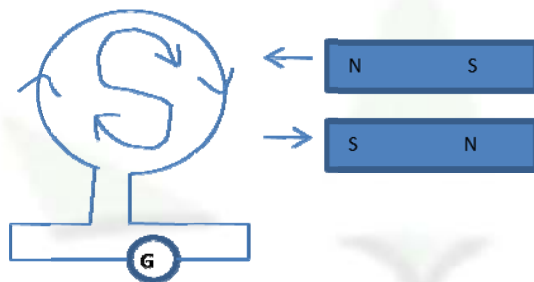


Lenz's Law And Principle Of Conservation Of Energy



Lenz's law & principle of conservation of energy:

We can show that the Lenz's law is in accordance with the conservation principle of energy.



Let us start by assuming that Lenz's law is not correct, then the direction of induced current in the coil should favour the cause in the figure the direction of induced current should be clockwise as shown. Suppose the bar magnet is at rest facing the coil. Now it is given a slight push towards the coil and then left free. During that small time interval the flux through the coil changes and an induced current flows through the coil which will attract the N-pole (i.e. the bar magnet) continuous to move towards the coil giving a continuous induced current. Thus without supplying any energy we get a continuous induced current and a continuous motion of the magnet which is against the principle of conservation of energy. Thus if Lenz's law is not correct then the conservation principle of energy is violated.

Hence the Lenz's law must be correct so that the principle of conservation of energy is obeyed.