

# Re: $E=F/q=vB$ Magnetic Force does not work on the charge

---

*Source:* <http://sci.tech-archive.net/Archive/sci.physics.relativity/2007-07/msg01451.html>

---

- *From:* "guskz@xxxxxxxxxxxx" <guskz@xxxxxxxxxxxx>
  - *Date:* Thu, 12 Jul 2007 13:48:39 -0700
- 

The magnetic field in the wire(the charge) determines the direction of the current and emf.

Further Quote:

"From this it follows immediately that the magnetic field of the current produced by the induced emf strengthens the field on the side toward which the wire is moving and weakens it on the opposite side (= direction of deflection). Once we know the direction of the magnetic field associated with the induced current, we can let the fingers of the right hand curve along the lines of force; the right thumb then points in the direction of the induced emf.

On Jul 12, 4:39 pm, "g...@xxxxxxxxxxxx" <g...@xxxxxxxxxxxx> wrote:

Model: A wire moving perpendicularly through a N&S magnetic field

Quote:"It is **\*\*\*\*ERRONEOUS\*\*\*\*** to think that the magnetic force does work on the charges to produce an EMF. We recall that the magnetic force is **PERPENDICULAR** to the velocity and hence to the displacement of the charge  $\Delta W = F \Delta S \cos(\text{angle})$  where  $\Delta S =$  displacement and in this case angle = 90 degrees therefore **NO WORK IS DONE BY THE \*\*\*\*MAGNETIC FORCE\*\*\*\***."

If one cannot figure out that the reverse is also true and that a magnetic force also does not affect a perpendicularly moving charge, absolutely no interaction occurs.