# Current-conducting effect of a magnetic field

***Xojamuratova J.R.***

*Karakalpak State University after named Berdakh,*

*2nd year undergraduate student in physics,*

*Nukus*

***Abstract.*** *A force called a magnetic field in a piece of space where a current and a permanent magnet are located area is formed. Its important feature is that it is only in this area affects only moving charges.*

***Key words:*** *Current, permanent magnet, magnetic field, positive direction, current conductor,contour, magnetic moment, frame, magnetic induction vector, magnetic induction lines, right screw rule.*

In nature, there are such natural metal compounds that have the property of attracting certain objects. This property of bodies means that there is a field around them. Such a field is called a magnetic field. Objects that do not lose a magnetic field around them for a long time are called permanent magnets or simply magnets. Let's bring a regular magnet close to small pieces of iron. In this case, we can see that the pieces of iron stick to only two ends of the magnet. The place where the magnetic effect of a permanent magnet is strongest is called the magnetic pole. Every magnet has two poles: north (N) and south (S).

A magnetic field can have a number of effects on current-carrying conductors. The main ones are:

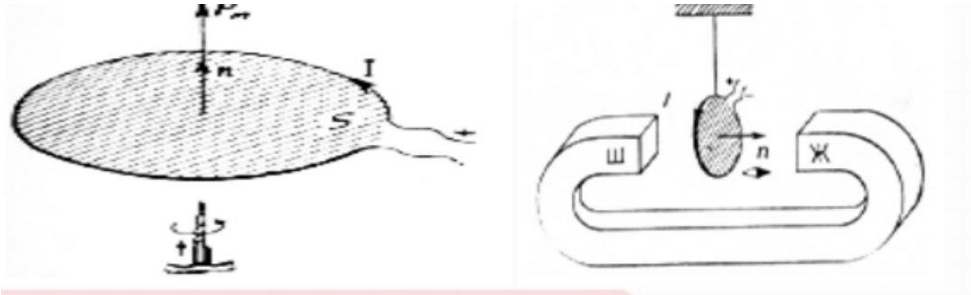
1. Lorentz force: When a current-carrying conductor moves in a magnetic field, it is subjected to the Lorentz force. This force is perpendicular to the direction of motion of the conductor and moves the conductor within the magnetic field.

2. Induction: If a current-carrying conductor is placed in a magnetic field and this field is changing, an inductive voltage appears in the conductor. This phenomenon is related to Faraday's law.

3. Change in energy: The change in the strength of the magnetic field and the current in the conductor causes a change in energy. This process is called electromagnetic induction.

4. Heating: Current flowing through a conductor can interact with the magnetic field and cause heating. This phenomenon is called Joule heating.

5. Magnetic field strength: When the current in a conductor changes, the magnetic field around it also changes. This phenomenon is related to electromagnetic fields and is used in various devices. These effects are explained on the basis of electrodynamics and electromagnetic theory and are used in many engineering and scientific fields.



A force called a magnetic field in a piece of space where a current and a permanent magnet are located area is formed. Its important feature is that it is only in this area affects only moving charges. According to experiments, it is a magnet the effect of the area on the current on the shape of the conductor, its location in the area and it will depend on the power of the current passing through it.

Therefore, the study of the magnetic field from the vine, flat contour (frame) with very small geometric dimensions we use The location of the contour in space is the normal transferred to this contour.We characterize it through the direction. Given as the direction of the magnetic field at the point, of the current contour placed at this point a positive direction is taken. Also, the magnetic arrow (needle) at this point it can also be determined by the direction of the force affecting the north pole. Magnet acting as a pair of forces, turning the area into a current contour, and moving it in a certain direction forces to settle according to The torque of the force is that of the field depends on the properties of the point and the properties of the contour.

**References**

1. Feynman, R.P., Leighton, R.B., Sands, M. (2011). *The Feynman Lectures on Physics*.

2. Halliday, D., Resnick, R., Walker, J. (2014). *Fundamentals of Physics*.

3. Griffiths, D.J. (2017). *Introduction to Electrodynamics*.

4.SK A. Ниғмонхўжаев, К.А. Турсунметов ва б. Физика III. – Т.: «Ўқитувчи», 2001. – 352 б.

5. К.А. Турсунметов ва б. Физикадан масалалар тўплами. – Т.: «Ўқитувчи», 2005. (4 та нашр) – 216 б.

6. Т.М. Оплачко, К.А. Турсунметов. Физика II – Т.: «Илм зиё», 2006–2017. – 208 б.

7. К.А. Турсунметов ва б. Физикани такрорланг. Муқобил маълумотнома. – Т.: «Turon-Iqbol», 2013. – 256 б

8. К.А. Турсунметов ва б. Физика. Маълумотнома. – Т.: «Ўзбекистон»,2016. – 176 б.