

**ADVANCES IN ELECTRODYNAMICS**

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Electrodynamics is a branch of physics that studies the electromagnetic field in the most general case and its interaction with bodies that have an electric charge.

The subject of electrodynamics includes the relationship of electrical and magnetic phenomena, electromagnetic radiation, electric current and its interaction with an electromagnetic field. Any electrical and magnetic interaction between charged bodies is considered in modern physics as being carried out by means of an electromagnetic field and therefore is also the subject of electrodynamics.

Most often, mistakenly, the term electrodynamics refers to classical electrodynamics, which describes only the continuous properties of the electromagnetic field through the system of Maxwell's equations. The term "electrodynamics" was introduced by André-Marie Ampère.

One of the main and first significant achievements in electrodynamics was the experimental discovery by Oersted in 1819–1820 of the generation of a magnetic field by an electric current.

Then in 1831, Michael Faraday experimentally discovered the phenomenon and law of electromagnetic induction, which became the first clear evidence of the direct dynamic relationship of electric and magnetic fields and he also in 1832 predicted the existence of electromagnetic waves. This was another great achievement and discovery in the field of electrodynamics.

As for future achievements and discoveries, one of the most accurate physical theories – quantum electrodynamics was discovered not so long ago. The field of electrodynamics is considered to be the most promising for innovative discoveries future.