

CHAPTER OVERVIEW

10: Electromagnetic Induction, AC Circuits, and Electrical Technologies

Historically, it was very shortly after Oersted discovered currents cause magnetic fields that other scientists asked the following question: Can magnetic fields cause currents? The answer was soon found by experiment to be yes. In 1831, some 12 years after Oersted's discovery, the English scientist Michael Faraday (1791–1862) and the American scientist Joseph Henry (1797–1878) independently demonstrated that magnetic fields can produce currents. The basic process of generating emfs (electromotive force) and, hence, currents with magnetic fields is known as **induction**; this process is also called magnetic induction to distinguish it from charging by induction, which utilizes the Coulomb force.

[10.1: Prelude to Electromagnetic Induction, AC Circuits and Electrical Technologies](#)

[10.2: Induced Emf and Magnetic Flux](#)

[10.3: Faraday's Law of Induction- Lenz's Law](#)

[10.4: Motional Emf](#)

[10.5: Electric Generators](#)

Thumbnail: Small cheap inductor. (CC-SA-BY 3.0; FDominec).

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