

# The Physics Experiments of Robert Wichard Pohl (1884–1976)

For decades, Robert Wichard Pohl taught his famous lectures of introductory physics in the old lecture hall of the Physics Institute at Goettingen University. These lectures became the foundation for three volumes entitled „Introduction into Physics“. Now, using Professor Pohl’s original instruments in the same lecture hall in which he taught, this set of videos captures his extraordinary ingenuity and once more brings to life Pohl’s great experimental skills.



## Induction motor

**Video title:** Induction motor  
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**Abstract:** Eddy currents induced in an aluminum disk in a moving inhomogeneous field tend to move the disk along with the field. This is the principle of the induction motor.  
**Source:** Pohls Einführung in die Physik - Elektrizitätslehre und Optik. Lüders, Klaus; Pohl, Robert Otto (Hrsg.) 22. Aufl., 2006, Springer Berlin Heidelberg New York; p. 99  
**Key words:** Inhomogeneous magnetic field, electric conductors, eddy currents, induction motors.

**Goal of the experiment:** Eddy currents create torques which can drive an induction motor.  
**Experimental setup:** As a horseshoe magnet rotates around a vertical axis, it creates a rotating inhomogeneous magnetic field. Above the magnet is an aluminum disk free to rotate around a vertical axis. Its rotation is made visible with a flag which is attached to the disk.  
**Experiment:** As the magnet rotates, it induces eddy currents in the disk, which in turn experience forces in the magnetic field. This is the principle of the induction motor. Note that the disk always has to rotate less rapidly than the magnet, since otherwise no torque would be created.

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