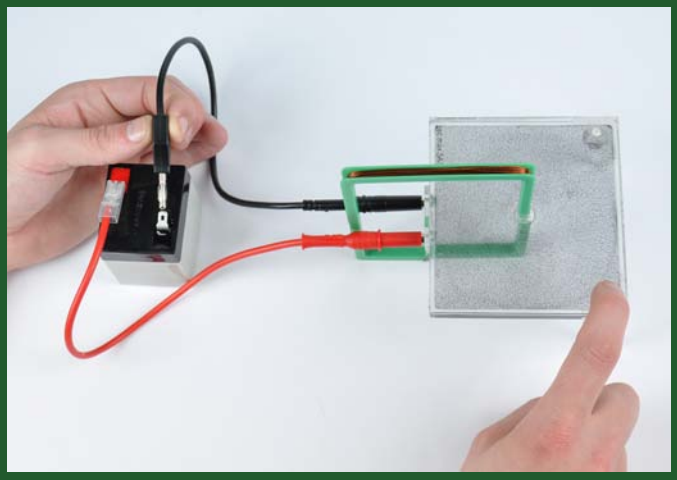
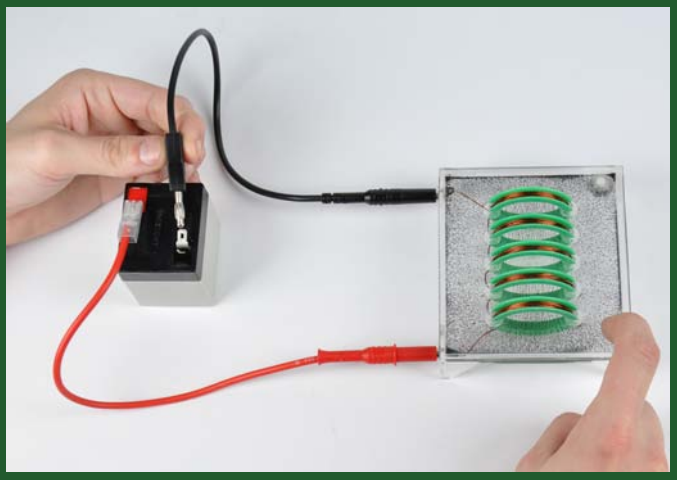
Student Experiments

Manual

MAGNETIC FIELD OF CURRENT

P9902-5U





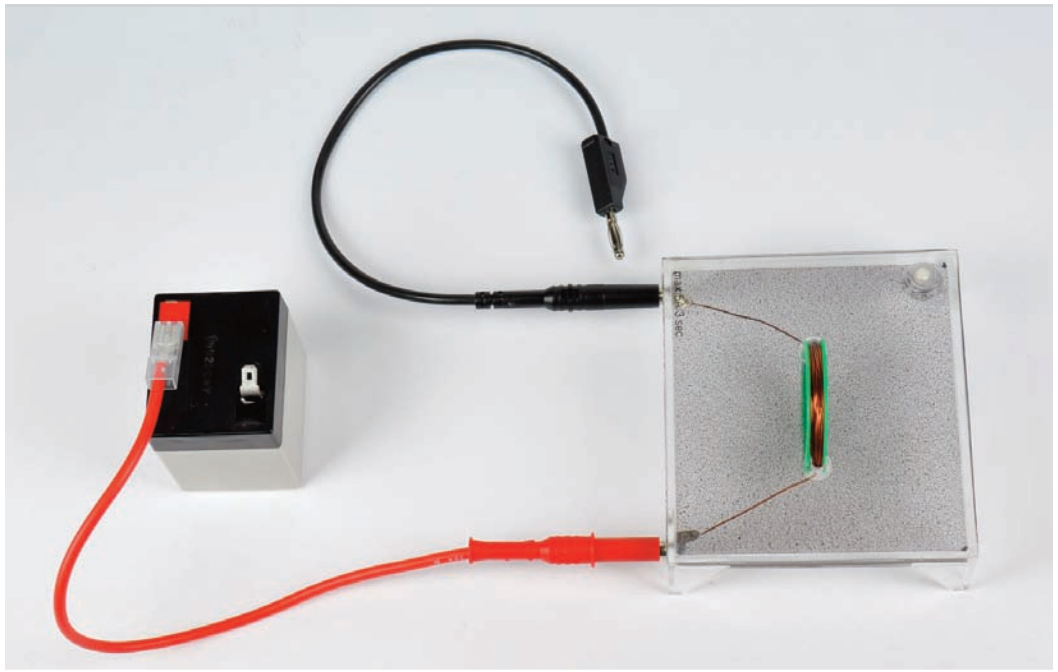
www.ntl.at

INDEX

MAGNETIC FIELD LINES AT A CONDUCTOR LOOP

EMS 5.2

Required Kit:
P9902-5U Magnetic field of current



Material:
1x Magnetic field - conductor models
"Conductor loop"
1x Battery with 2 cables

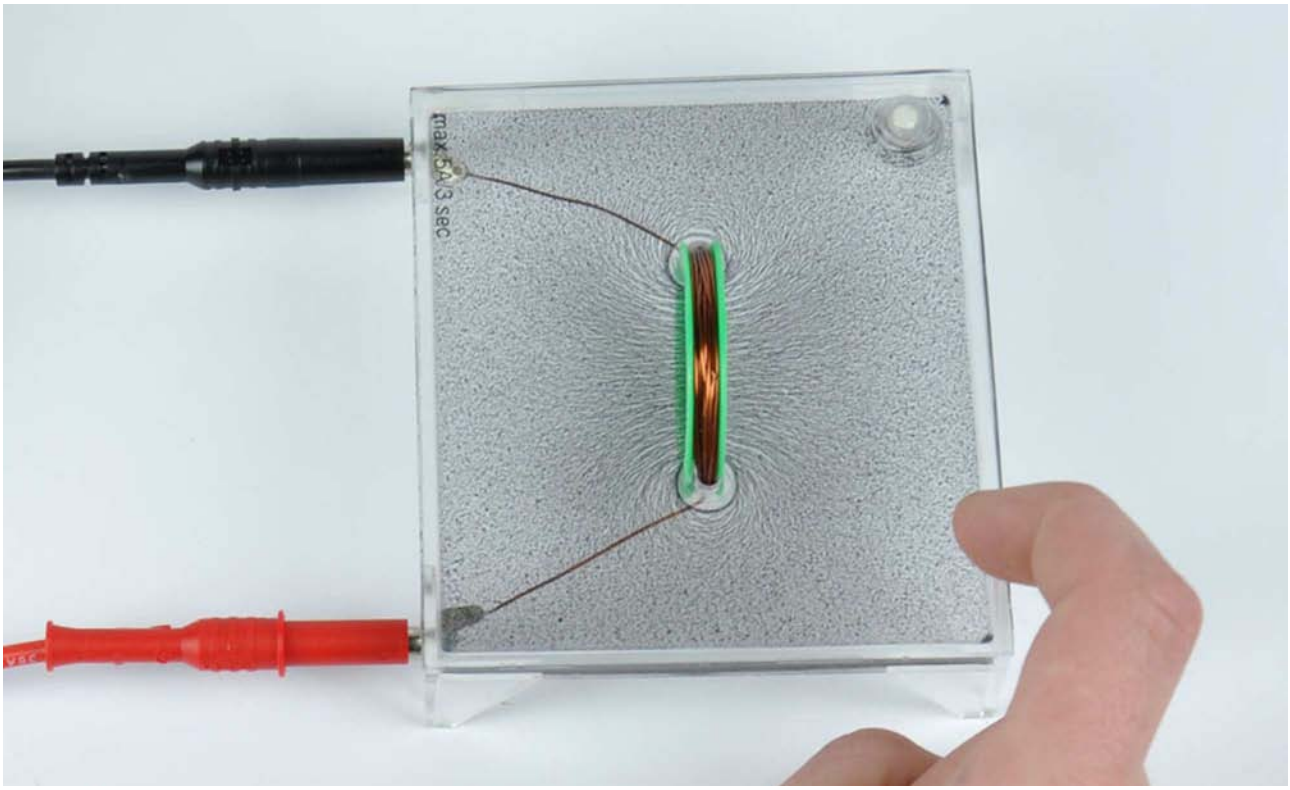
MAGNETC FIELD LINES AT A CONDUCTOR LOOP

EMS 5.2

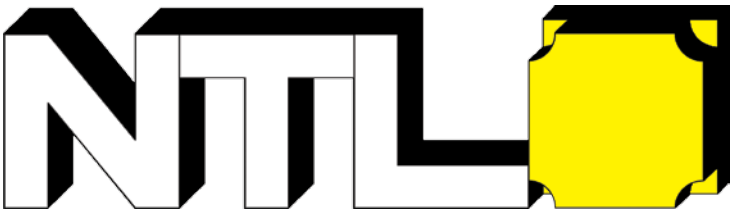
The goal of this experiment is to explore the geometry of a magnetic field, generated by a conductor loop.

Experiment:
To ensure an uniform allocation of the iron filings in the acrylic glass cuvette of the conductor model, we shake it strongly.
Afterwards we connect the two cables with safety plugs to the conductor loop model.
Connect the red cable to the positive pole of the battery.
As this is again a short-circuit experiment, we touch the negative pole of the battery with the connector of the black cable for a maximum of 3 seconds.

To achieve a good illustration of the field lines, it is recommended to knock on the acrylic glass of the conductor model while current is flowing.



Conclusion:
The iron filings arrange themselves along the magnetic field lines.
At the two points, where the conductor loop intersects the acrylic glass cuvette, the iron filings arrange themselves in concentric circles around the conductor.
This creates a magnetic field similar to the magnetic field of a stationary magnetic pellet.



Student Experiments

NTL Manufacturer & Wholesaler

Werner von Siemensstraße 1
A - 7343 Neutal
Austria

www.ntl.at