

Application No. 647: Experiments with magnets

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Workshop for fans of physics

Orientation week for new students

Each year the last week of August we at the Royal Institute of Technology in Stockholm welcome about 130 students interested in physics to our Master of Science in Engineering Physics. As part of a two-week welcome, we always come up with a program for the new students. This year the theme was magnetism.



Our magnet workshop

For our workshop we created a booth with several experiments. A few friends and I demonstrated the experiments and made sure the students got the gist of it. We found ideas for our experiments among your customer applications. We'd like to introduce a few of the experiments as follows:



Gauss pistol

The first station demonstrated the so-called Gauss pistol.



We got the idea from your customer applications "Gauss pistol" (www.supermagnete.fr/eng/project148) and "The Launching Pad" (www.supermagnete.fr/eng/project68). We used:



- 9 steel balls (www.supermagnete.fr/eng/ST-K-13-N)
- 5 cube magnets W-12-N (www.supermagnete.fr/eng/W-12-N)

Electric motor

The students also had the opportunity to build an electric motor with simple parts.



The customer application "The World's Simplest Electric Motor" (www.supermagnete.fr/eng/project1) inspired us to try this experiment. We used:

- 1 disc magnet S-15-08-N (www.supermagnete.fr/eng/S-15-08-N)



The levitating magnetic rod

Another favorite was the levitating rod magnet.



This experiment is based on our namesake project "Levitating rod magnet" (www.supermagnete.fr/eng/project328). We used:

- 10 rod magnets S-04-25-N (www.supermagnete.fr/eng/S-04-25-N)



The twirling sphere

An interesting experiment on the topic of magnetic repulsion was the twirling sphere.



The inspiration was the namesake customer application "Swirling sphere" (www.supermagnete.fr/eng/project228). We used:

- 20 disc magnets S-08-05-N (www.supermagnete.fr/eng/S-08-05-N)
- 4 disc magnets S-03-03-N (www.supermagnete.fr/eng/S-03-03-N)
- 1 Steel balls 13 mm (www.supermagnete.fr/eng/ST-K-13-N)



Slowly dropping sphere

The last experiment illustrated electromagnetic induction.



This experiment was based on the customer application "Aluminum Foil as Contact-Free Parachute" (www.supermagnete.fr/eng/project77). We used:

- 1 sphere magnet K-19-C (www.supermagnete.fr/eng/K-19-C)



Articles used

- 10 x ST-K-13-N: Steel balls 13 mm (www.supermagnete.fr/eng/ST-K-13-N)
- 5 x W-12-N: Cube magnet 12 mm (www.supermagnete.fr/eng/W-12-N)
- 1 x S-15-08-N: Disc magnet Ø 15 mm, height 8 mm (www.supermagnete.fr/eng/S-15-08-N)
- 10 x S-04-25-N: Rod magnet Ø 4 mm, height 25 mm (www.supermagnete.fr/eng/S-04-25-N)
- 20 x S-08-05-N: Disc magnet Ø 8 mm, height 5 mm (www.supermagnete.fr/eng/S-08-05-N)
- 4 x S-03-03-N: Disc magnet Ø 3 mm, height 3 mm (www.supermagnete.fr/eng/S-03-03-N)
- 1 x K-19-C: Sphere magnet Ø 19 mm (www.supermagnete.fr/eng/K-19-C)
- 10 x ST-K-10-N: Steel balls 10 mm (www.supermagnete.fr/eng/ST-K-10-N)
- 10 x ST-K-20-N: Steel balls 20 mm (www.supermagnete.fr/eng/ST-K-20-N)
- 10 x ST-K-08-N: Steel balls 8 mm (www.supermagnete.fr/eng/ST-K-08-N)

Online since: 09/09/2013

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