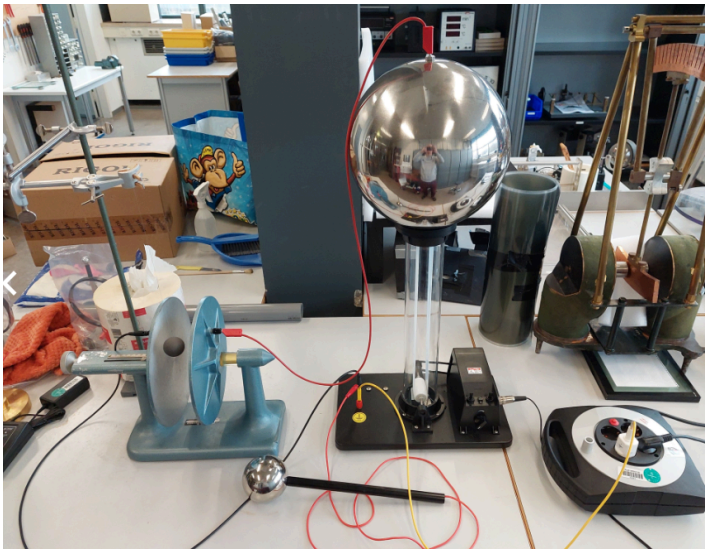
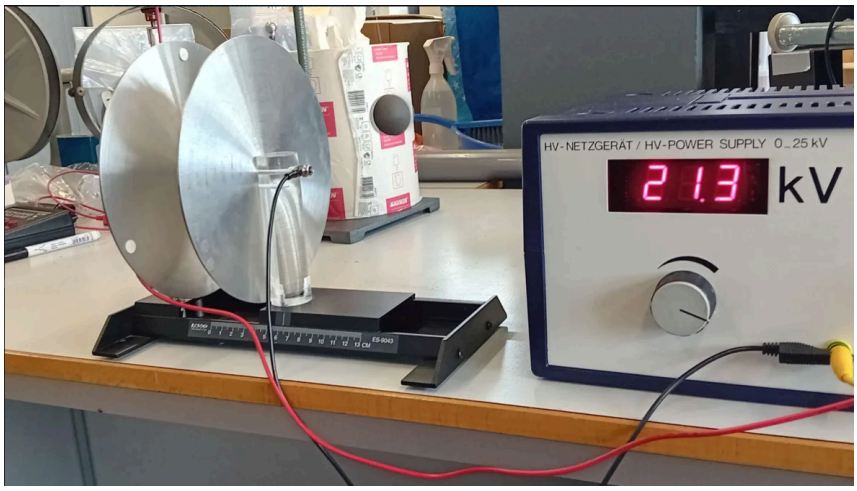
# 5B20.51 - Visualizing field lines around the capacitor

Key words: electric field lines, capacitor






**<u>Equipment List</u>:**

1. Power source
2. Capacitor with two-sided metal plates
3. Ping pong ball with a conducting paint on a string
4. Tall string holder

**<u>How to assemble and operate</u>**:

- Connect the power supply/van der graaff generator to the capacitor plates.
- Position the ping pong ball between the plates at the middle height. A preferable starting distance between the plates is 6.5cm.
- Turn on the power supply and increase the voltage. After it reaches a sufficient value, the ping pong ball should start to oscillate between the plates according to the field lines.
- To visualize the outside field lines, the ping pong ball should be moved to the negatively charged plate using the string. After the ball is released, it should start following the outer field lines.

**<u>Description/Theory</u>**:

This demonstration illustrates the electric field lines inside and around the capacitor.

**Comments/Notes**

The voltage increase should be slow, due to safety reasons. If the voltage supplied is too big, one of the plates might discharge to the environment.