

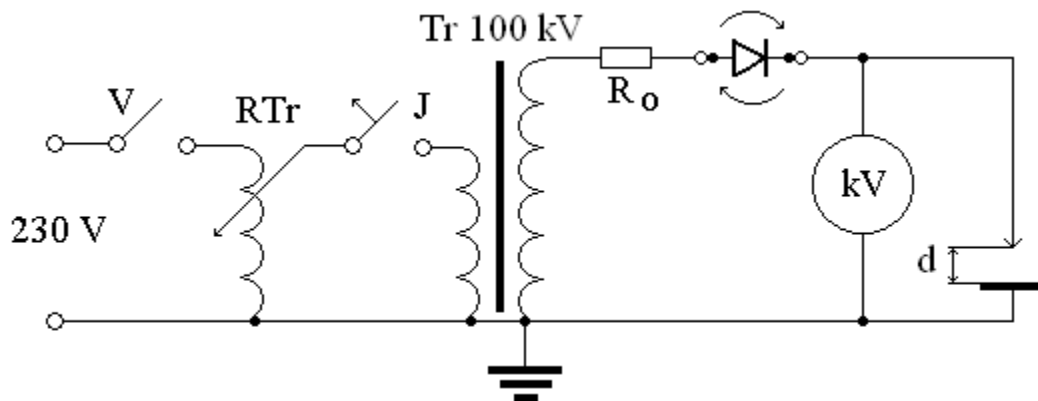
Task 4: Barriers Influence to the Electrical Strength in a Non-Uniform Electric Field

(Laboratory F1-115)

- Measure the flashover voltage U_P in the dependency of gap distance d for both dc voltage polarities. Gap distance should be stepwise increased up to 100 mm with step about 20 mm.
- Determine the optimal location of the barrier (the distance of the barrier from the plane is marked as a) for the distance between electrodes $d = 50$ mm. The positive voltage polarity is applied to the tip.

The polarity effect in non-uniform electric field should be smartly explained as a part of the conclusion of the paper!

Measurement circuit:



V – switch

RTr – controlled power transformer

J – breaker

Tr – testing transformer 100 kV

Ro – limiting resistor

kV – electrostatic kilo-voltmeter

d – controllable gap distance between electrodes

Example of the Graphical Evaluation of Results:

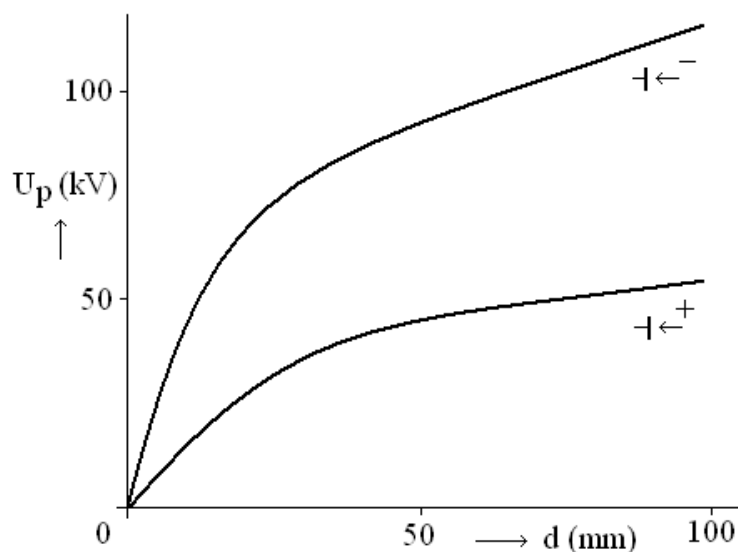
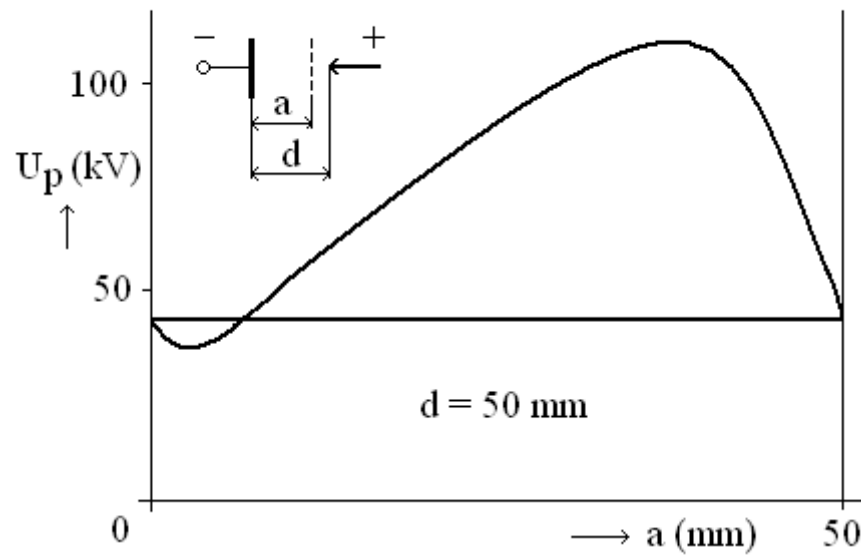


Fig. 1: Dependency of the flashover voltage to gap distance**Fig. 2:** Dependency of the flashover voltage to the location of the barrier in non-uniform electrical field