

# Plasmatic vacuum reactor (PVR) 1



1. Plasmatic vacuum reactor (PVR) consists of two steel hemispheres, which are mutually connected by a ring to form a sphere. Outer diameter is approximately 17 cm and inner diameter is 13 - 14 cm. PVR contains a window approximately 3 - 4 cm diameter, through which you can observe what is happening inside, further input and output of incoming or outgoing voltage. In the center of PVR there is central nonmagnetic column (isolated from PVR), which comprises arbor of 2 high speed DC engine, at it's end neodymium magnets are placed. The arbor is isolated from DC engine teflon-lined. It is possible to move DC engine with the arbor in or our of PVR by 19 - lifting system of the rotating magnetic field (Bolen - cable) and it is driven by 4 12 V battery. Speed of DC engine can be adjusted from 0 - 11 000 rpm by 5 PWM regulation. Improtant part of laboratory is vacuum system 6,7,8,9, which is used to create vacuum in millibars in 1 receiver and 12 containers . This vacuum system is connected with receiver and containers 17 by pipes and metering valves and 18 protective return valve, which is used to prevent intrusion of atmospheric air to turbomolecular pump, otherwise it would be destroyed. 13. USB Oscilloscope is used to measure and record values during tests.

## ***Other parts of our laboratory:***

- 1. Computer
- 2. Source to change the voltage from AC to a DC (10 A a 40 V)
- 3. Source of high frequency (VFZ) aprox. 10 - 100 KV with frequency aprox. 100 000 Hz
- 4. Profesional universal lathe for creating components

## ***Parts we need for the laboratory:***

- 1. Highfrequency generator upto 100KV with frequency 100 000Hz and minimal current (safe for our tests)
- 2. HD camera for recording (with tripod)
- 3. Oscilloscope, probes, multipliers, which are able to measure and record high voltage and frequency...

## **Involved people**

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[Research plan of plasmatic vacuum reactor \(PVR\) 1](#)