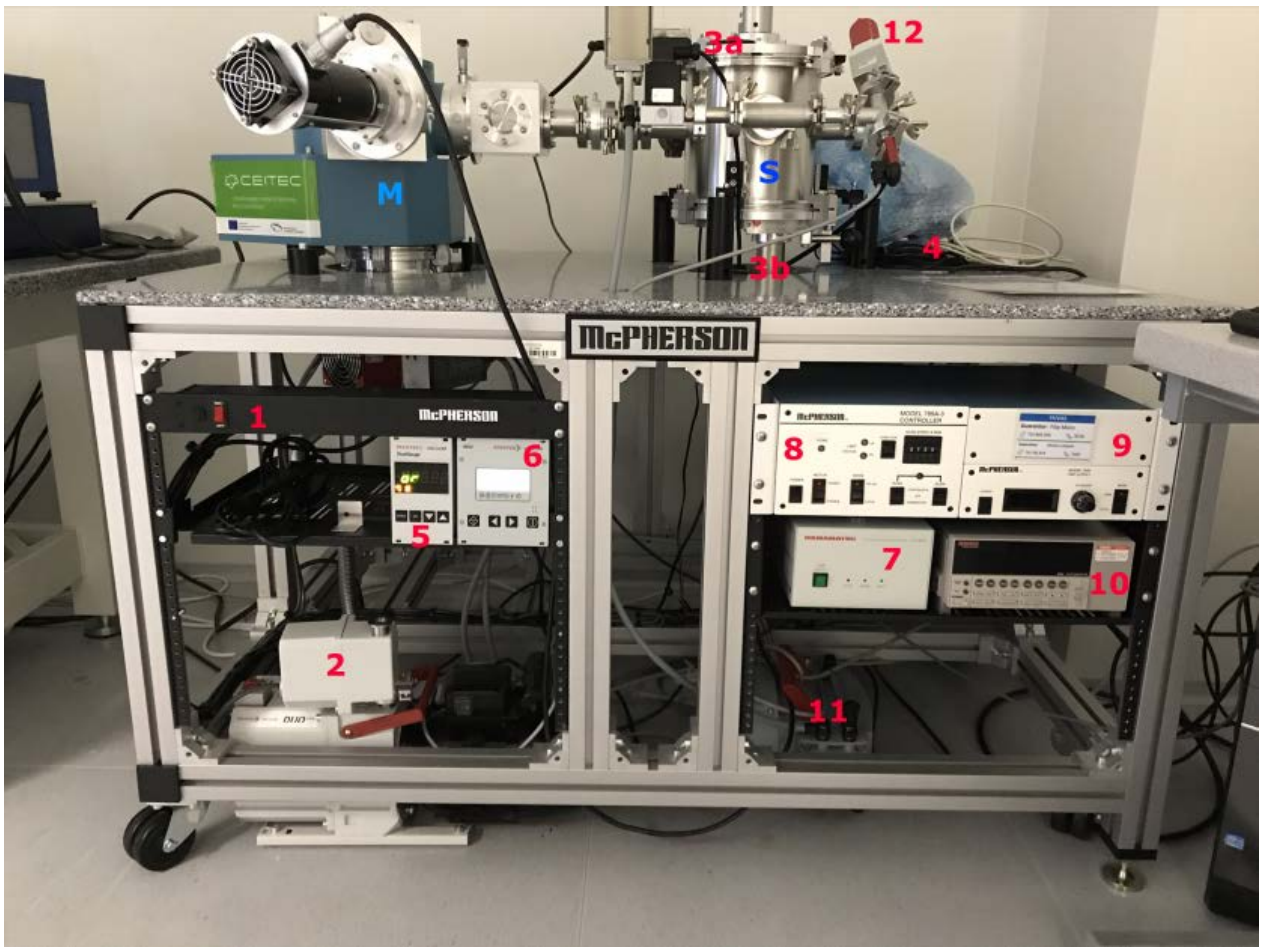
*This guide obtains just brief information. In case you need detailed instructions, read the VUVAS 1000 manual. It is recommended to read the **Safety Instruction and Basic Troubleshooting** manual prior to your work.*

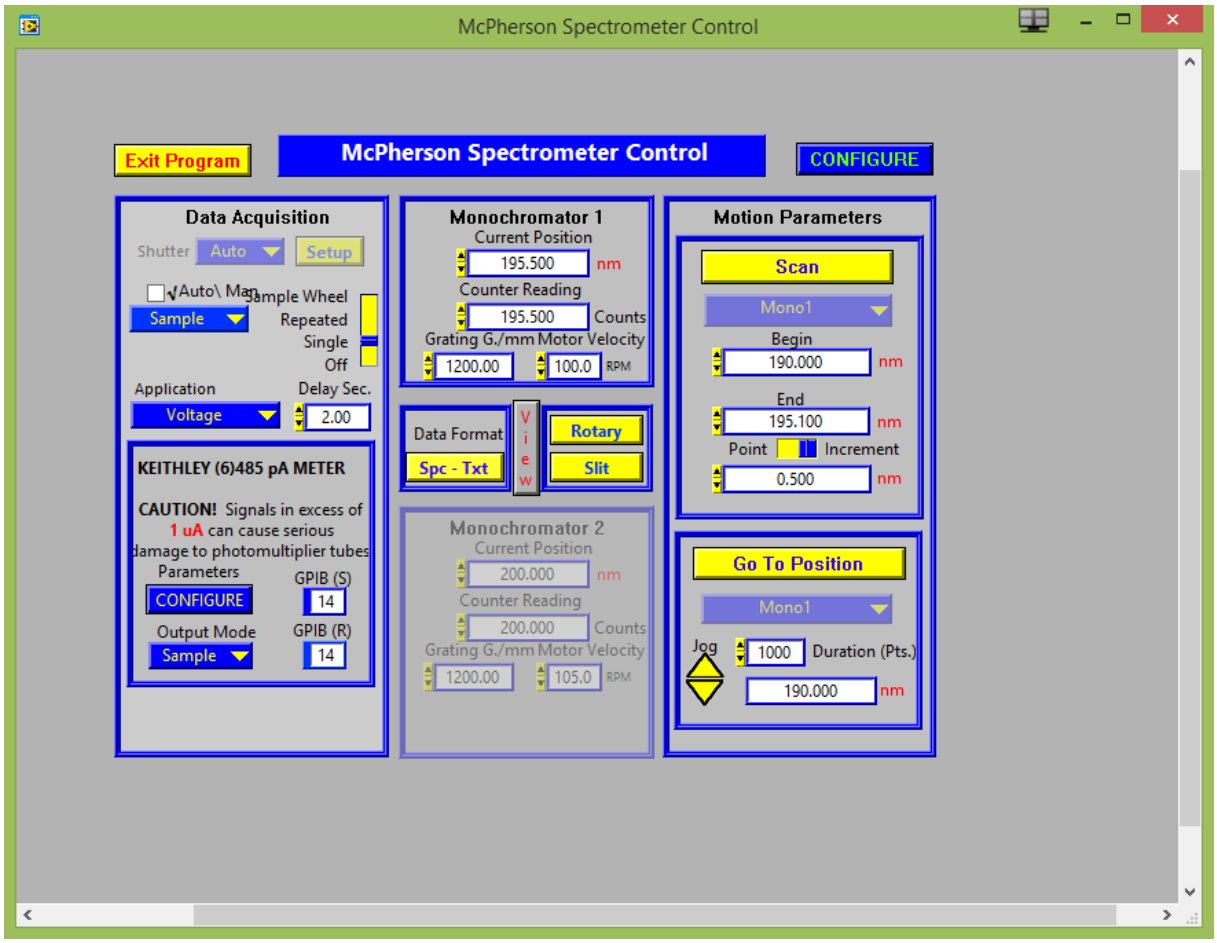
VUVAS 1000

Turning on procedure

1. **OPTIONAL:** Replacing sample holder.
2. **OPTIONAL:** Inserting samples: 2 screws on the lid of the sample chamber (S) hold the sample holder. It's preferable to
3. **CHECK** (usually is not needed):
    a) switch on power (button on the central distribution box RZS/11)
    b) switch on central power button (red) on the front desk of the table (#1 on the figure)
    c) open N2 valve on the main inlet or the small distribution panel (left side of the table)
4. Evacuate the monochromator (M): switch on the rotary pump (#2 on the figure)
5. Switch on the computer
6. Check gate valve between monochromator and chamber – should be closed (power switch #4 off)



7. Wait until pressure in chan. 1 of combined gauge controller (#5) reaches 5 mbar, start the turbopump (panel #6)
8. Open slits before and after the monochromator to cca 40 µm
9. When pressure drops below $1e^{-3}$ mbar, switch on the lamp (green button #7)
10. Wait 30–60 min to stabilize the lamp
11. Turn on the monochromator (#8), PMT power supply (#9) and Keithley multimeter (#10)
12. Start the program (McPherson Spectrometer Control ) and initialize the connection to the multimeter (press CONFIGURE in bottom left corner of the main dialogue window).
13. Go to 159 nm (button "Go To Position" for time series)
14. Start membrane pump (#11 below table), open the electrical valve (#3a) using switch on power wire (#3b)
15. Wait until pressure (channel 2) reaches 6 mbar
16. Open the gate valve (should hear a hissing sound, otherwise check if the N2 inlet is open)
17. Put detector in transmission position, pull sample holder in the upper position (empty hole)
18. Increase PMT voltage to reach **max. 900 nA** on multimeter (higher current can **damage the PMT!**).

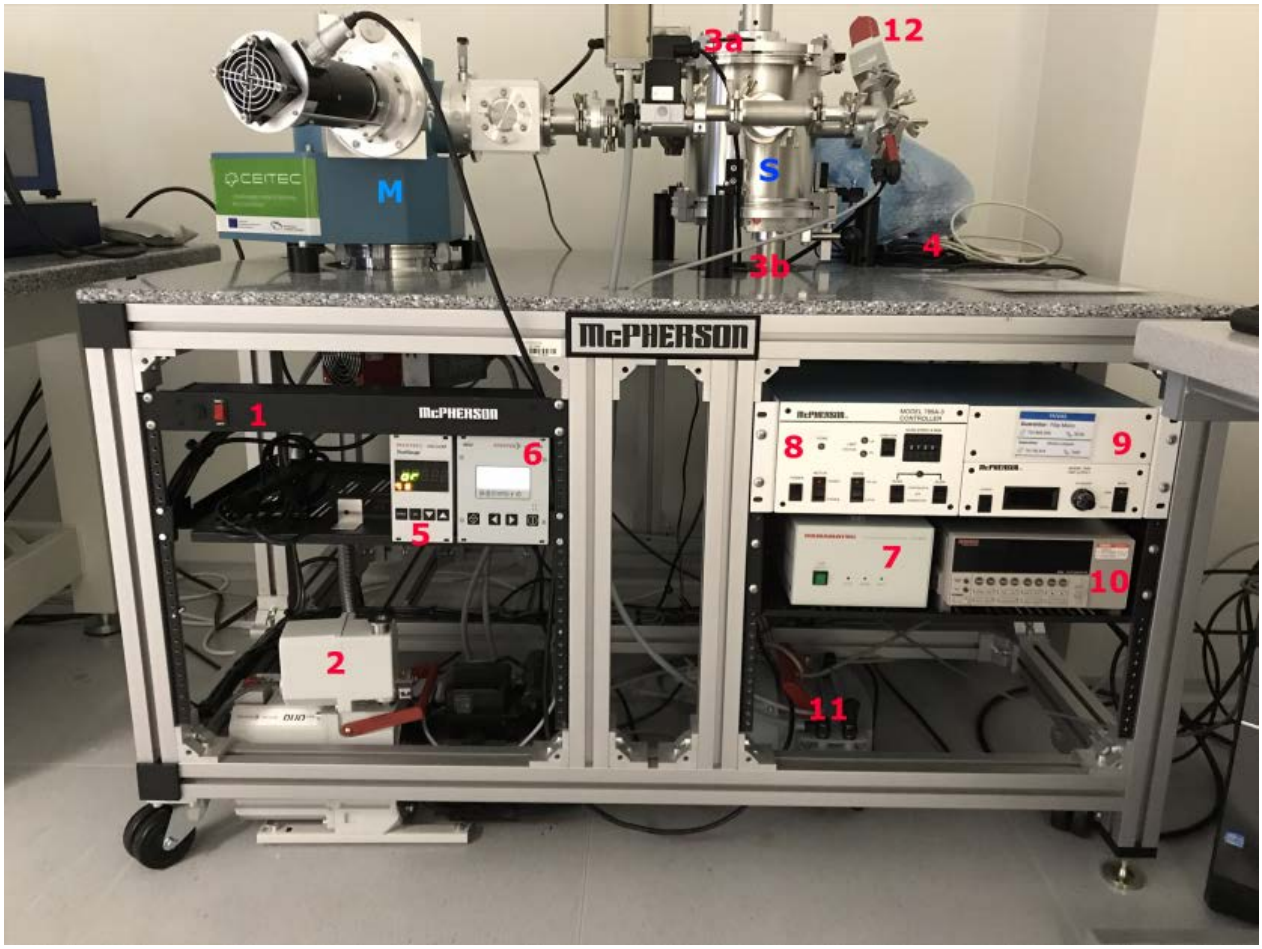


Changing the sample

1. Close gate valve (switch #4)
2. open N2 valve and red manual valve (#12) to vent the chamber
3. **switch off the PMT supply** (#9) – even a small amount of light leaking in the sample chamber could increase the PMT current drastically
4. unscrew and remove the sample holder, fix samples and place it back
5. close the red valve (#12), open electric valve (#3) in front and turn on membrane pump (#11)
6. when 6 mbar is reached, close the electric valve and the membrane pump

   (close the exit slit to reduce the blast on the turbopump)
7. open the plate valve

   (reopen the slit)
8. switch on the PMT supply (#9)
9. when the pressure reaches $1e^{-3}$ mbar, start measurement



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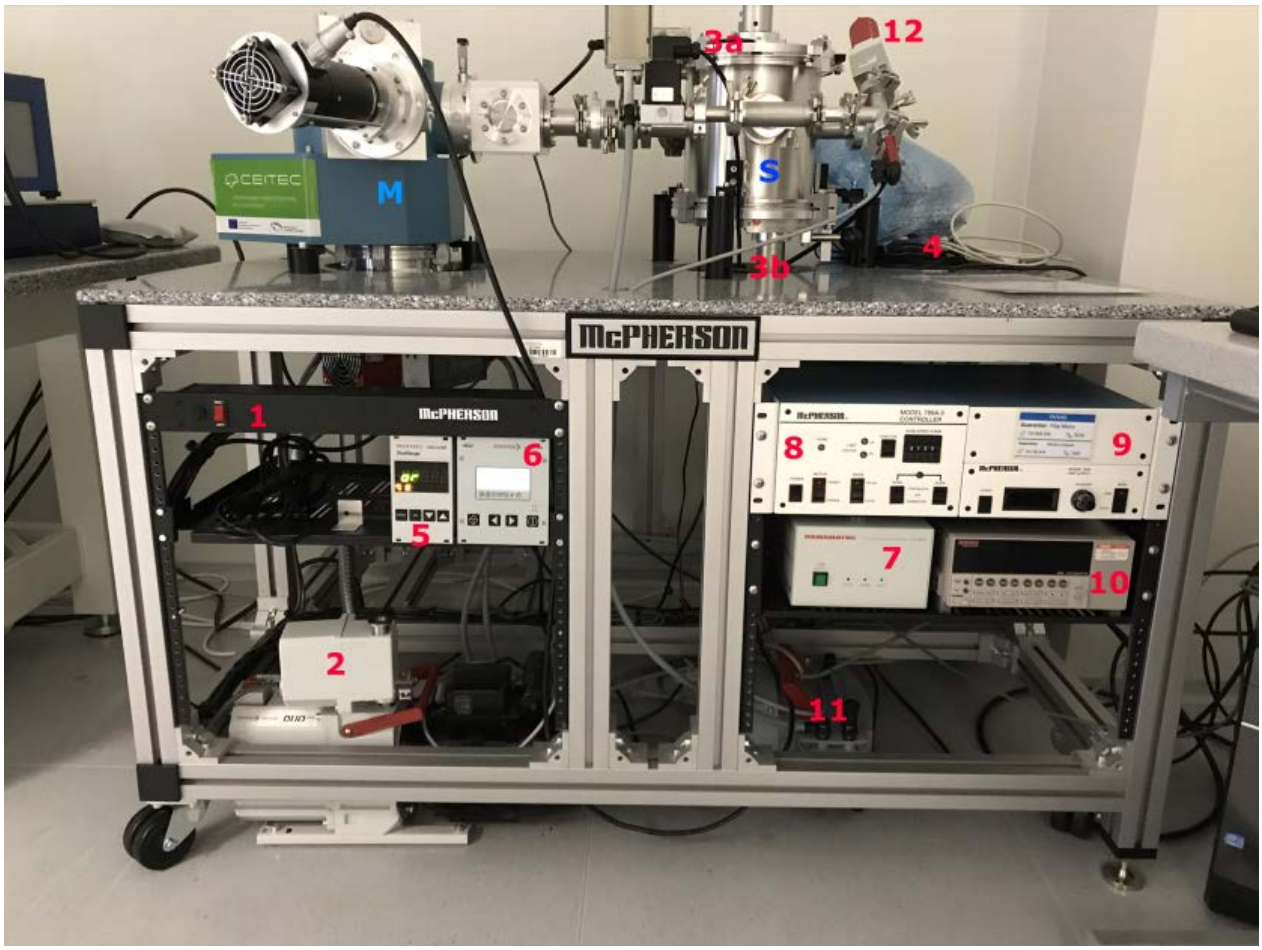
Turning off procedure

1. Close the gate valve
2. Turn off the lamp (#7) and PMT supply (#9).
3. Close the gate valve
4. Vent the sample chamber (open venting N2 valve #11)
5. Switch off the backing rotary (#1) and turbo (#6) pump.
6. Wait until lamp cooling fan stops and switch off the rest (not needed if some other measurement follows); turbopump will vent correctly without power.



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