Diener Zepto (Plasma)

2023-11-20 - LBE PLASZEP [TUEILBE]

Responsible persons:	Moritz Leuthner (moritz.leuthner@tum.de)
Training:	Mandatory, only trained persons are allowed to operate.
Lab safety:	S1, Bio1, clean room
Booking calendar:	To secure measuring time, please schedule a meeting between your TUM account and "LBE PLASZEP [TUEILBE]" from the "TUM-Ressourcen" address book. Please including your phone number. Booking expires after 1h, if not used. In all other cases "first come, first serve". No time-slots longer than 3h without consultation. Responsible persons has decision sovereignty.
Accessories and data sheets:	Documentation in drawer below instrument. Wiki page: https://collab.dvb.bayern/x/ycNKB
Consumables:	Oxygen bottle. If pressure falls below 10 bar, an exchange is likely needed.
Operation:	Gas supply is regulated by sensitive needle valves. Close them (clockwise) only finger tight/until a minimal increase in resistance is felt. Do NOT over-tighten! Do NOT remove the glass substrate holder, except for cleaning purposes! Do NOT bump and scratch on the glass tube and sealing. Take especially care with the corners! Always close the chamber door after usage (dust-free) by pumping vacuum, then turning the rotary switch back to off. Do NOT change the pressure regulator or flow control at the oxygen bottle (bottle pressure: 190 bar, outlet pressure: 1.1 bar). Only operate the main/top valve. Always turn the knob a quarter turn back after fully opening or closing the valve.
Typical process	Place sample in chamber. Close gently both gas valves (clockwise). Pump vacuum to 0.15-0.10 mbar by turning rotary switch to *PUMP* and pressing the chamber door firmly shut. Turn rotary switch to *GAS* and open gas valve slowly (e.g. air) until pressure and gas flow has stabilized (0.6 mbar and 0.35 nL/h). Adjust the timer and power (e.g. 20 = 60 s and 100 = 30 W). Turn rotary switch to *PROCESS* and wait until plasma glows (diode at *PROCESS* turns red) and the process finishes (diode off). Switch to *FLUSH* and wait 10 s. Chamber opens automatically when turning the rotary switch to *FLOOD*. Close oxygen bottle (if needed).
Cleaning:	Keep substrate holder, glass tube and device's top clean and remove contaminants immediately.
Closing:	Document experiment in lab book. Close oxygen bottle (clockwise) at main/top valve. Close chamber door. Take your material with you or dispose it, but do not leave anything there. Put everything else, e.g. glass slides, etc., back to their original place. Lock all lab doors when you leave the lab.