# Microwave Reactor Standard Operating Procedure (SOP) 25/7/18

1. For procedures to run the reactor itself please see other SOPs

## Setting up

1. Turn on the PC, login to “User”
2. Make sure switch on black box is set to “II”
3. Open “Andor SOLIS 4.28.3”, select “Newton” CCD
4. Switch on CCD cooling by clicking the temp. in the bottom left of the software UI, set the temp. to -50oC. The temp. will turn blue when it is ready to use later

Steps 5 – 8 can be done in any order

1. Settings: slit = 30 microns, grating = NO 2 (1200 l/mm), centre wavelength = 510 nm (for C2 emission spectrum, change for (*e.g*.) CH, etc.)
2. Remove lens cap and prepare black tube with lab-jack (you will need to place this between lens and chamber and rest on lab-jack after striking and checking plasma)
3. “Acquisition setup”: readout rate = 1 MHz, pre-amp gain = 2x, mode = “accumulate” or “kinetic”
4. Set the accumulation time/number/(kinetic series length). *E.g*. 7.158 s/16 accs/45 kinetic points – lasts 90 minutes on kinetic.
5. Start the growth run. If doing kinetic mode, press the start button (camera icon) upon reaching required conditions. For accumulate mode, consider residence times

## During acquisition

1. Data can be visualised *in-situ* using “99:1” button to change contrast range and/or by right-clicking on data and selecting plot>row plot/vertically binned tracking plot
2. Save the data after acquisition has finished as a FITS file (32-bit unsigned)

## Turning off

1. Close the acquired data to check that it has been saved (you will be prompted if not)
2. Change the CCD temperature setting to -10oC
3. Remove black tube and lab jack to store, replace lens cap
4. Once temperature has reached ~ -10oC, close Andor software
5. If not in use soon, shut down the PC