Yichao

For shutting off, go through the checklist in the following order

- Turn off equipments
- Turn off power supplies
- Turn off computers

Wait before everyone else finish their corresponding steps before starting the next one.

For powering up, go through the checklist in the following order

- Turn on computers
- Turn on power supplies
- Turn on equipments
- Check computer connection to devices

Also wait before everyone else finish their corresponding steps before starting the next one.

Equipments and power supplies are mostly located around the laser table on the library side.

Check Lee's part after everything are off.

1 Equipments

Thorlabs temperature controller for Na Raman doubler
1st level above Na Raman and D2 seed lasers
Record temperature settings

Setpoint	

Turn off check list

- Turn off
- Unplug power

- Plug in power
- Check temperature setting
- Turn on

• Timebase driver for Na Raman and Na D2 (x2)

1st level above Na Raman and D2 seed lasers Record current and T1 settings

Raman Current	
Raman T1	
MOT Current	
MOT T1	

Turn off check list

- Turn off
- Unplug power

Turn on check list

- Plug in power
- Turn on
- Set current/temperature.
- Enable T1 survo
- Turn on current

• Oscilloscope for Na D2 lock 1st level above Na Raman amplifier

- Unplug from wall
- MPB Raman amplifier
 1st level above Na MOT beam path
 Turn off check list
 - Power off
 - Unplug from wall

Turn on check list

- Plug into wall
- Power on

• Homebuilt lockbox for Na D2

1st level above Na seed

Turn on-off together with the adjustable high voltage power supply above

Record high voltage power supply output

Voltage	
---------	--

Turn off check list

- Unlock
- Turn down the voltage of the high voltage power supply to 0
- Unplug high voltage power on lockbox (zip tie)
- Unplug 15V from lockbox (zip tie)
- Turn off high voltage power supply
- Unplug high voltage power supply from wall

Turn on check list

- Plug high voltage power supply into the wall
- Turn on high voltage power supply (make sure the output is 0)
- Plug in 15V to lockbox
- Plug in high voltage to lockbox
- Turn up the voltage of the high voltage power supply
- Check HV output

• SRS shutter driver for Na 1st level above Na D2 beam path, below Variac Switch off/on with the switch on the back.

_	Off	On	Variac	for	N_2	coll
•			variac	101	INa	cen

Above Na D2 beam path

Record temperature and voltage settings

Voltage	
Temperature	

Turn off check list

- − Turn voltage to 0
- Switch off
- Unplug from wall

Turn on check list

- Plug into wall
- Switch on
- Turn the voltage up **SLOWLY** and monitor the temperature at the same time.

• In Homebuilt lockbox for Na D1

1st level above Na D2 beam path Turn on-off together with the fixed high voltage power supply above

Turn off check list

- Unlock
- Unplug high voltage power on lockbox (zip tie)
- Unplug 15V from lockbox (zip tie)
- Unplug high voltage power supply from walls

Turn on check list

- Plug high voltage power supply into the wall
- Plug in 15V to lockbox
- Plug in high voltage to lockbox
- Check HV output

• Thorlabs temperature controller for Na D1 doubler

1st level above Na D1

Record temperature settings

Setpoint

Turn off check list

- Turn off
- Unplug power

Turn on check list

- Plug in power
- Check temperature setting
- Turn on

• Thorlabs temperature controller for Na D1 seed

1st level above Na D1 seed

Record temperature settings

Setpoint	
----------	--

Turn off check list

- Turn off
- Unplug power

- Plug in power
- Check temperature setting
- Turn on

• Thorlabs current controller for Na D1 seed

 $1\mathrm{st}$ level above Na $\mathrm{D}1$ seed

Record current settings

Current

Turn off check list

- Turn off
- Unplug power

Turn on check list

- Plug in power
- Check current setting
- Turn on

2 Power supplies

• Benchtop power supply

2nd level above Na Variac Record voltage/current values:

Left Voltage	
Left Current	
Right Voltage	
Right Current	

Turn off check list

- Unplug loads
- Label and zip tie loads to the power supply
- Turn off the power supply
- Unplug from wall

Turn on check list

- Plug into the wall
- Turn on the power supply Do NOT do this with loads pluged in
- Plug the load back in

• Homebuilt 24V power supply

2nd level above Cs tweezer controllers Turn off check list

- Unplug load
- Label and zip tie loads to the power supply
- Switch off on the back

- Switch on
- Plug the load back in

•	Off	On	Benchtop power supp	ly
			l above Na D1 seed controllers	·
	Recor	d vo	oltage/current values:	

Left Voltage	
Left Current	
Right Voltage	
Right Current	

Turn off check list

- Unplug loads
- Label and zip tie loads to the power supply
- Turn off the power supply
- Unplug from wall

Turn on check list

- Plug into the wall
- Turn on the power supply Do NOT do this with loads pluged in
- Plug the load back in

• Benchtop power supply 2nd level above Cs tweezer, right of 24V power

2nd level above Cs tweezer, right of 24V power supply

Record voltage/current values:

Left Voltage	
Left Current	
Right Voltage	
Right Current	

Turn off check list

- Unplug loads
- Label and zip tie loads to the power supply
- Turn off the power supply
- Unplug from wall

- Plug into the wall
- Turn on the power supply Do NOT do this with loads pluged in
- Plug the load back in

• Benchtop power supply

1st level above Cs tweezer Record voltage/current values:

Left Voltage	
Left Current	
Right Voltage	
Right Current	

Turn off check list

- Unplug loads
- Label and zip tie loads to the power supply
- Turn off the power supply
- Unplug from wall

Turn on check list

- Plug into the wall
- Turn on the power supply Do NOT do this with loads pluged in
- Plug the load back in

• Off On UPS

2nd level above laser table Turn off check list

- Turn off
- Unplug from wall

Turn on check list

- Plug into the wall
- Turn on

3 Computers

• Computer control box for 1.0 Turn off check list

- − ☐ (Do following three steps quickly)
- Turn off the box by flipping the switch on the front side of the box
- Unplug the high voltage (48V) power supply (circular plug) on the front side of the box. Then unplug the power supply itself fromm the outlet.
- Unplug the 12V board power supply. (L.T.E. one with a rectangular connector in the front)
- Unplug USB power on the front side near the fan.
- Zip tie the three unpluged powers to the computer control box.

- Connect to 3.5G Windfrek clock generator from Tweezer1. Set frequency to 3.5G and amplitude to max.
- (Remove power connection zip ties and) Plug in USB power supply.
- (Do following three steps quickly)
- Plug in the 12V board power supply.
- Plug in high voltage power supply.
- Turn on the power switch of the box. The fans should start spinning.

Jon

For shutting off, go through the checklist in the following order

- Turn off equipments
- Turn off power supplies
- Turn off computers

Wait before everyone else finish their corresponding steps before starting the next one.

For powering up, go through the checklist in the following order

- Turn on computers
- Turn on power supplies
- Turn on equipments
- Check computer connection to devices

Also wait before everyone else finish their corresponding steps before starting the next one.

Equipments and power supplies are mostly located around the machine table facing the laser table or the computer area.

Check Jessie's part after everything are off.

1 Equipments

• Agilent function generator for Na 1.0 switching

1st level above TiSapph facing computers Record parameters:

Ch1 Hi	
Ch1 Lo	
Ch2 Hi	
Ch2 Lo	

Turn off check list

- Turn off
- Unplug from wall

- Plug into wall
- Turn on
- Set frequency, duty cycle, high/low voltages
- Set switching phase back

• 2nd version Till's current controller for Cs 1.5 (x2)

1st level above 1.5 Cs MOT

Record current values:

Top Current	
Bottom Current	

Turn off check list

- Turn off
- Unplug power (zip tie to controller)

Turn on check list

- Plug in power
- Turn on
- Thorlabs current controller
 1st level below Cs 1.5 MOT drivers
 Unused

Turn off check list

- Turn off
- Unplug power
- Homebuilt temperature servo for Cs 1.5 MOT (x2)

 1st level above Cs 1.5 MOT

Switch off/on the front switch

Oscilloscope for Cs 1.5 MOT lock

1st level above Cs 1.5 MOT

– Unplug from wall

• Homebuilt lockbox for Cs 1.5 MOT

1st level above Cs 1.5 MOT Turn off check list

- Unlock
- Unplug 15V from lockbox (zip tie)

Turn on check list

– Plug in 15V to lockbox

• Function generator for Cs MOT 1.5 lockbox

1st level under Cs MOT 1.5 lockbox Turn off check list

- Record settings
- Turn off
- Unplug from wall

- Plug into wall
- Turn on
- Restore settings

• HV amplifiers for 1.0 piezo mirrors

Above the space beween Na 1.5 beam path and NaCs 1.5 chamber

Turn on-off together with the function generator below and the high voltage power supply on the left

Turn off check list

- Turn off the function generator
- Unplug function generator output (zip tie and label)
- Unplug HV power supply from the wall

Turn on check list

- Plugin HV power supply to the wall
- Plugin function generator output
- Turn on the function generator

• De Pump

1st level above NaCs 1.0 chamber Turn off check list

- Turn off
- Unplug from walls

Turn on check list

- Plug into wall
- Turn on (should be enough)

• I Andor Camera for 1.0

Turn off check list

- Switch off
- Switch off chiller
- Unplug camera power (zip tie to camera)

Turn on check list

- Plug in camera power
- Switch on chiller
- Switch on

2 Power supplies

• Benchtop power supply 2nd level above Cs 1.5 MOT controllers
Record voltage/current values:

Left Voltage	
Left Current	
Right Voltage	
Right Current	

Turn off check list

- Unplug loads
- Label and zip tie loads to the power supply
- Turn off the power supply
- Unplug from wall

- Plug into the wall
- Turn on the power supply **Do NOT do this with** loads pluged in
- Plug the load back in

Off	Homebuilt 24V power suppl	y
2nd level	l above Cs 1.5 MOT controllers	
Turn off	check list	

- Unplug load
- Label and zip tie loads to the power supply
- Switch off on the back

Turn on check list

- Switch on
- Plug the load back in

• Benchtop power supply (x2) 1st level above Na 1.5 bean path Record voltage/current values:

Left Voltage	
Left Current	
Right Voltage	
Right Current	

Turn off check list

- Unplug loads
- Label and zip tie loads to the power supply
- Turn off the power supply
- Unplug from wall

Turn on check list

- Plug into the wall
- Turn on the power supply **Do NOT do this with** loads pluged in
- Plug the load back in

• If the Homebuilt $\pm 15,5$ V power supply

2nd level above Na 1.5 beam path Turn off check list

- Unplug load
- Label and zip tie loads to the power supply
- Switch off on the back

Turn on check list

- Switch on
- Plug the load back in

• Benchtop power supply (x2) 2nd level above piezo mirror electronics

Record voltage/current values:

Left Voltage	
Left Current	
Right Voltage	
Right Current	

Turn off check list

- Unplug loads
- Label and zip tie loads to the power supply
- Turn off the power supply
- Unplug from wall

- Plug into the wall
- Turn on the power supply Do NOT do this with loads pluged in
- Plug the load back in

Benchtop power supply 2nd level above NaCs 1.0 chamber

Record voltage/current values:

Left Voltage	
Left Current	
Right Voltage	
Right Current	

Turn off check list

- Unplug loads
- Label and zip tie loads to the power supply
- Turn off the power supply
- Unplug from wall

Turn on check list

- Plug into the wall
- Turn on the power supply **Do NOT do this with** loads pluged in
- Plug the load back in

Computers

- Tweezer 2 computer Check following devices
 - Andor camera
- Tweezer 3 computer Check following devices
 - Software radio

Lee

For shutting off, go through the checklist in the following order

- Turn off equipments
- Turn off power supplies
- Turn off computers

Wait before everyone else finish their corresponding steps before starting the next one.

For powering up, go through the checklist in the following order

- Turn on computers
- Turn on power supplies
- Turn on equipments
- Check computer connection to devices

Also wait before everyone else finish their corresponding steps before starting the next one.

Equipments and power supplies are mostly located around the laser table on the computer area side. Check Yichao's part after everything are off.

1 Equipments

• PLL for 1.0 Cs MOT

Turn off check list

- Unplug all signals (zip tie together)
- Unplug 15V and 5V powers (zip tie together)

Turn on check list

- Plugin 15V and 5V powers
- Plugin all signals
- Apply settings according to note on Generic tab, Equipment Settings.

• PLL for 1.0 Cs Raman

Turn off check list

- − Unplug all signals (zip tie together)
- Unplug 15V and 5V powers (zip tie together)

Turn on check list

- Plugin 15V and 5V powers
- Plugin all signals
- Apply settings according to note on Generic tab, Equipment Settings.

• Homebuilt temperature servo for Cs 1.0 MOT

1st level above Cs tweezer/MOT lasers Switch off/on the front switch

• 1st version Till's current controller for Cs MOT

1st level above Cs tweezer/MOT lasers Record current value:

Current	
---------	--

Turn off check list

- Turn off
- Unplug power (zip tie to controller)

Turn on check list

- Plug in power
- Turn on
- Cs 1.0 MOT lock box
 1st level above Cs MOT lasers
 - Make sure the laser is unlocked.
- Novatech function generator
 1st level above Cs MOT lasers Turn off check list
 - Save settings

Turn on check list

– Restore settings

• New Focus Cs Raman lasers drivers (2x)

1st level above Cs Raman lasers

Record Temperature, Current, Piezo voltage Temperature is accessible in the menu under system status

F3 Current	
F3 Piezo Voltage	
F3 Temperature	
F4 Current	
F4 Piezo Voltage	
F4 Temperature	

Turn off check list

- Turn off
- Unplug power

Turn on check list

- Plug in power
- (Turn on)
- SRS shutter driver for Cs
 1st level above Cs Raman lasers
 Switch off/on with the switch on the back.
- New Focus lock box for Cs

1st level above Cs Raman lasers Unplug power.

Homebuilt servo for Cs tweezer

temperature

1st level above Cs tweezer Switch off/on the front switch

• 2nd version Till's current controller for Cs Tweezer

1st level above Cs tweezer Record current value:

Current

Turn off check list

- Turn off
- Unplug power (zip tie to controller)

Turn on check list

- Plug in power
- Turn on
- Thorlabs current controller

1st level below Cs tweezer driver Unused

Turn off check list

- Turn off
- Unplug power

• Thorlabs temperature controller for Cs tweezer

1st level above Cs tweezer Record temperature settings

Setpoint

Turn off check list

- Turn off
- Unplug power

- Plug in power
- Check temperature setting
- Turn on
- Intensity servo for Cs
 1st level above Cs tweezer
 Unplug power

2 Power supplies

• Benchtop power supply
1st level above Cs tweezer/MOT lasers
Record voltage/current values:

Left Voltage	
Left Current	
Right Voltage	
Right Current	

Turn off check list

- Unplug loads
- Label and zip tie loads to the power supply
- Turn off the power supply
- Unplug from wall

Turn on check list

- Plug into the wall
- Turn on the power supply Do NOT do this with loads pluged in
- Plug the load back in

• In Homebuilt $\pm 15,5$ V power supply

2nd level above Cs tweezer/MOT lasers Turn off check list

- Unplug load
- Label and zip tie loads to the power supply
- Switch off on the back

Turn on check list

- Switch on
- Plug the load back in

• Benchtop power supply

1st level next to Cs Raman driver Record voltage/current values:

Voltage	
Current	

Turn off check list

- Unplug loads
- Label and zip tie loads to the power supply
- Turn off the power supply
- Unplug from wall

Turn on check list

- Plug into the wall
- Turn on the power supply **Do NOT do this with** loads pluged in
- Plug the load back in

• Homebuilt 24V power supply 2nd level above Cs Raman lasers Turn off check list

- Unplug load
- Label and zip tie loads to the power supply
- Switch off on the back

- Switch on
- Plug the load back in

• Benchtop power supply for Cs Raman locking

2nd level above Cs Raman lockbox

Record voltage/current values:

Voltage	
Current	

Turn off check list

- Unplug loads
- Label and zip tie loads to the power supply
- Turn off the power supply
- Unplug from wall

Turn on check list

- Plug into the wall
- Turn on the power supply Do NOT do this with loads pluged in
- Plug the load back in

3 Computers

• Tweezer 1 computer

Check following devices

- Thorlabs cameras
- Na Raman amplifier

Jessie

For shutting off, go through the checklist in the following order

- Turn off equipments
- Turn off power supplies
- Turn off computers

Wait before everyone else finish their corresponding steps before starting the next one.

For powering up, go through the checklist in the following order

- Turn on computers
- Turn on power supplies
- Turn on equipments
- Check computer connection to devices

Also wait before everyone else finish their corresponding steps before starting the next one.

Equipments and power supplies are mostly located around the machine table facing the 1.5 table. Check Frederic's part after everything are off.

1 Equipments

• III TiSapph

Turn off check list

- Turn off pump, unplug from wall
- Turn off controller, unplug from wall
- Turn off chiller, unplug from wall

Turn on check list

Ask Frederic.

- Plug into wall, turn on chiller
- Plug into wall, turn on controller
- Plug into wall, turn on pump

• Quantel Laser 1st level in the middle, facing 1.5 table

Intensity servo for Na
1st level above Na tweezer, below 1.0 computer control box
Unplug power

- 1st version Till's current controller for butterfly laser
 1st level above TiSapph
 Turn off check list
 - Turn off
 - Unplug power (zip tie to controller)
- Homebuilt temperature servo for butterfly laser
 1st level above TiSapph
 Switch off/on the front switch

• PLL for 1.5 Cs MOT

Turn off check list

- Unplug all signals (zip tie together)
- Unplug 15V and 5V powers (zip tie together)

Turn on check list

- Plugin 15V and 5V powers
- Plugin all signals
- Apply settings???

2 Power supplies

• Homebuilt 24V power supply 2nd level above NaCs 1.0 chamber, facing the drawers/wall

Turn off check list

- Unplug load
- Label and zip tie loads to the power supply
- Switch off on the back

Turn on check list

- Switch on
- Plug the load back in

• Benchtop power supply for dispensers

1st level above NaCs 1.0 chamber Turn off check list

- Unplug loads
- Label and zip tie loads to the power supply
- Turn off the power supply
- Unplug from wall

Turn on check list

- Plug into the wall
- Turn on the power supply Do NOT do this with loads pluged in
- Plug the load back in

• Benchtop power supply for 1.5 computer control clock

2nd level next to 1.5 computer control box Record voltage/current values:

Voltage	
Current	

Turn off check list

- Unplug loads
- Label and zip tie loads to the power supply
- Turn off the power supply
- Unplug from wall

- Plug into the wall
- Turn on the power supply **Do NOT do this with** loads pluged in
- Plug the load back in

• Homebuilt $\pm 15,5$ V power

supply 2nd level above TiSapph Turn off check list

- Unplug load
- Label and zip tie loads to the power supply
- Switch off on the back

Turn on check list

- Switch on
- Plug the load back in

3 Computers

• Computer control box for 1.5 Turn off check list

- − ☐ (Do following three steps quickly)
- Turn off the box by flipping the switch on the front side of the box
- Unplug the high voltage (48V) power supply (circular plug) on the left side of the box. Then unplug the power supply itself fromm the outlet.
- Unplug the 12V board power supply. (L.T.E. one with a rectangular connector in the front)
- Unplug USB power on the front side near the fan.
- Zip tie the three unpluged powers to the computer control box.

- Connect to 3.5G Windfrek clock generator from Tweezer1. Set frequency to 3.5G and amplitude to max.
- (Remove power connection zip ties and) Plug in USB power supply.
- (Do following three steps quickly)
- Plug in the 12V board power supply.
- Plug in high voltage power supply. The fans should start spinning.
- Turn on the power switch of the box.

Frederic

For shutting off, go through the checklist in the following order

- Turn off equipments
- Turn off power supplies
- Turn off computers

Wait before everyone else finish their corresponding steps before starting the next one.

For powering up, go through the checklist in the following order

- Turn on computers
- Turn on power supplies
- Turn on equipments
- Check computer connection to devices

Also wait before everyone else finish their corresponding steps before starting the next one.

Equipments and power supplies are mostly on the 1.5 rack. Check Jon's part after everything are off.

1 Equipments

• Andor Camera for 1.5 Turn off check list

- Switch off
- Switch off chiller
- Unplug camera power (zip tie to camera)

Turn on check list

- Plug in camera power
- Switch on chiller
- Switch on

• 1.5 Feshbach coils

Before power shutdown

Wrap exposed part in napkins to prevent condensations

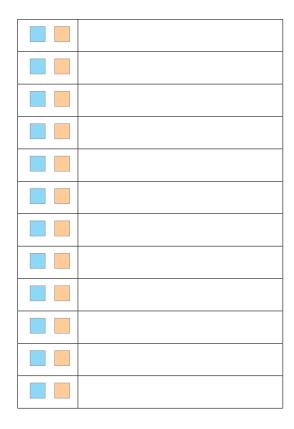
1.5 IGBT

Before power shutdown

- Wrap exposed part in napkins to prevent condensations

• Cooling water

Valves to close/reopen:



• HV amplifiers for 1.5 piezo mirrors

Top level of 1.5 rack

Turn on-off together with the function generator below and the high voltage power supply above the 1.0 machine table

Turn off check list

- Turn off the function generator
- Unplug function generator output (zip tie and label)
- Unplug HV power supply from the wall

Turn on check list

- Plugin HV power supply to the wall
- Plugin function generator output
- Turn on the function generator

• Of Pump

Bottom level 1.5 Rack Turn off check list

- Turn off
- Unplug from walls

- Plug into wall
- − Turn on (should be enough)

2 Power supplies

• Benchtop power supply 2nd level (from the top) 1.5 Rack. Next to coil servo

Record voltage/current values:

Left Voltage	
Left Current	
Right Voltage	
Right Current	

Turn off check list

- Unplug loads
- Label and zip tie loads to the power supply
- Turn off the power supply
- Unplug from wall

Turn on check list

- Plug into the wall
- Turn on the power supply Do NOT do this with loads pluged in
- Plug the load back in

Benchtop power supply Bottom level 1.5 Rack. Next to pump

Record voltage/current values:

Voltage	
Current	

Turn off check list

- Unplug loads
- Label and zip tie loads to the power supply
- Turn off the power supply
- Unplug from wall

Turn on check list

- Plug into the wall
- Turn on the power supply Do NOT do this with loads pluged in
- Plug the load back in

3 Computers

- Tweezer 4 computer
 Check following devices
 - Andor camera
 - Thorlabs camera