(a)

SeqAutoCollect.gui

ROI Selection Tool

0 cell(s) selected from this coverslip
(hover mouse over a region to view number of cells selected in that region)

1,1	1,2	1,3	1,4	1,5	1,6	1,7	1,8	1,9	1,10
2,1	2,2	2,3	2,4	2,5	2,6	2,7	2,8	2,9	2,10
3,1	3,2	3,3	3,4	3,5	3,6	3,7	3,8	3,9	3,10
4,1	4,2	4,3	4,4	4,5	4,6	4,7	4,8	4,9	4,10
5,1	5,2	5,3	5,4	5,5	5,6	5,7	5,8	5,9	5,10
6,1	6,2	6,3	6,4	6,5	6,6	6,7	6,8	6,9	6,10
7,1	7,2	7,3	7,4	7,5	7,6	7,7	7,8	7,9	7,10
8,1	8,2	8,3	8,4	8,5	8,6	8,7	8,8	8,9	8,10
9,1	9,2	9,3	9,4	9,5	9,6	9,7	9,8	9,9	9,10
10,1	10,2	10,3	10,4	10,5	10,6	10,7	10,8	10,9	10,10

Sample Stage
(use mouse wheel to control z piezo)

+Z +X
+z +x -Y -y +y +Y
-z -x
-Z -X

Stepper Position (mm)
X: 1.000
Y: 1.000
Z: 1.000

Piezo Position (um)
X: 10.000
Y: 10.000
Z: 10.000

Load Sample | Open Stepper GUI | Reset Piezos
Unload Sample | Open Piezo GUI | Reconnect Piezos

Directory/File Options

Save Directory:
Coverslip Name:
Label Number: 1
Filename Tag:

Hamamatsu sCMOS

Exposure Time (seconds)
Lamp focus: 0.02
Lamp capture: 0.02
Laser focus: 0.2
Laser sequence: 0.01

Find Coverslip
Open sCMOS GUI
Reset sCMOS

Light Sources

647nm Laser
On for focus: Power (mW): 50
On for sequence: Power (mW): 50
Open 647nm Laser GUI

405nm Laser
On for focus: Power (mW): 11.84
On for sequence: Power (mW): 11.84
Open 405nm Laser GUI

LED Lamp
Lamp Power (% of max): 35
Open LED Lamp GUI

Alignment/Registration

Use Active Registration
Use Periodic Registration
after every 1 sequence(s)
Find Coverslip Offset

Acquisition

Number of Sequences: 7
Number of Frames: 6000
Pre-Activate Fluorophores
for 10 second(s)
Indicate Photobleaching Round:
Automatically Publish Results:
Start Autocollect
Abort Acquisition

Status: Setting up main sCMOS...

(b)

SRcollect.gui

FILE
Save Directory: Y:\SRuser\18-01-31\
Base FileName: Cell1
File type: .mat

CAMERA
Camera Gain: Low (Alexa647)
Camera ROI: Left Bottom
Exp. Time Focus: 0.01 Actual:
Exp. Time Seq.: 0.01 Actual: 0.03203
Num Frames: 2000 Zoom: 400...

REGISTRATION
Exp. Time Reg.: 0.01 Take Current Center Stage
Load Reference
Align Show Reference Take Reference Save Reference
No Registration
Align to Self (Takes/Saves Reference Image)
Align to Reference

LIGHT SOURCE

	405 nm	488 nm	561 nm	642 nm	Lamp
On during Focus	☐	☐	☐	☐	☐
On during Aquisition	☐	☐	☐	☐	☐
Low Power	1	1	1	1	50
High Power	4	10	10	80	
[MinPower, MaxPower]	[0.25, 8.5] (mW)	[0, 100] (mW)	[0.125, 100] (mW)	[0, 80] (mW)	[0, 100] (Percent)

CONTROL
Number of Sequences: 20
Focus Lamp | Focus Laser (Low)
Lamp | Focus Laser (High)
START | ABORT

(c)

ExampleCamera.gui(obj): obj

Display | Camera Parameters

Action

Exposure Times (s)		Output Variable
0.01	Focus	focus
0.02	Capture	capture
0.05	Sequence	sequence

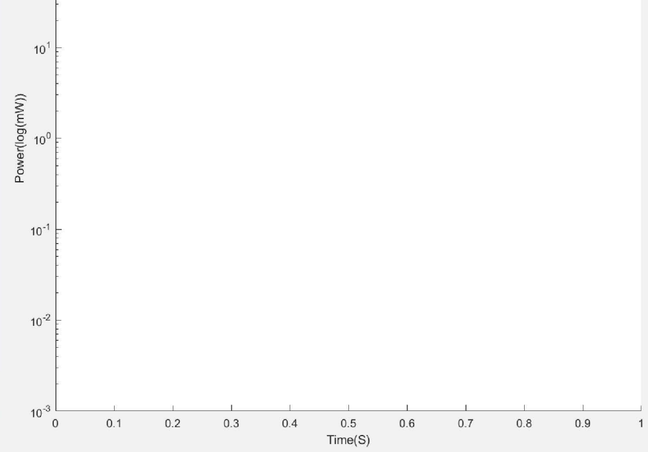
Sequence Length 10
Sequence Period 0.1
Zoom 100%

22
Abort | Exit

(g)

Figure 1
File Edit View Insert Tools Desktop Window Help

Current mW Max mW



400<lambda(nm)<1100 nm
Start Plot | Stop Plot
T(S)
Get mW
Power(mW)

(d)

TCubePiezo X

0 um 20 um
< >
C F F C

Fine step size 0.2 um
Coarse step size 2 um

Mouse wheel fine/coarse Fine

Set Position 0 um

(e)

NanoMax Stage Control

UP
up
down
DOWN

X-
x- Y+ y+ y- Y-
x+
X+

(f)

TIRFLaser488

Min Power 0 mW
Max Power 100 mW

Set Power 0 mW

Off