Script Starts

|

Transducer Initialized? – no – Inform user, then terminate the script

|

yes

|

Laser Initialized? – no – Inform user, then terminate the script
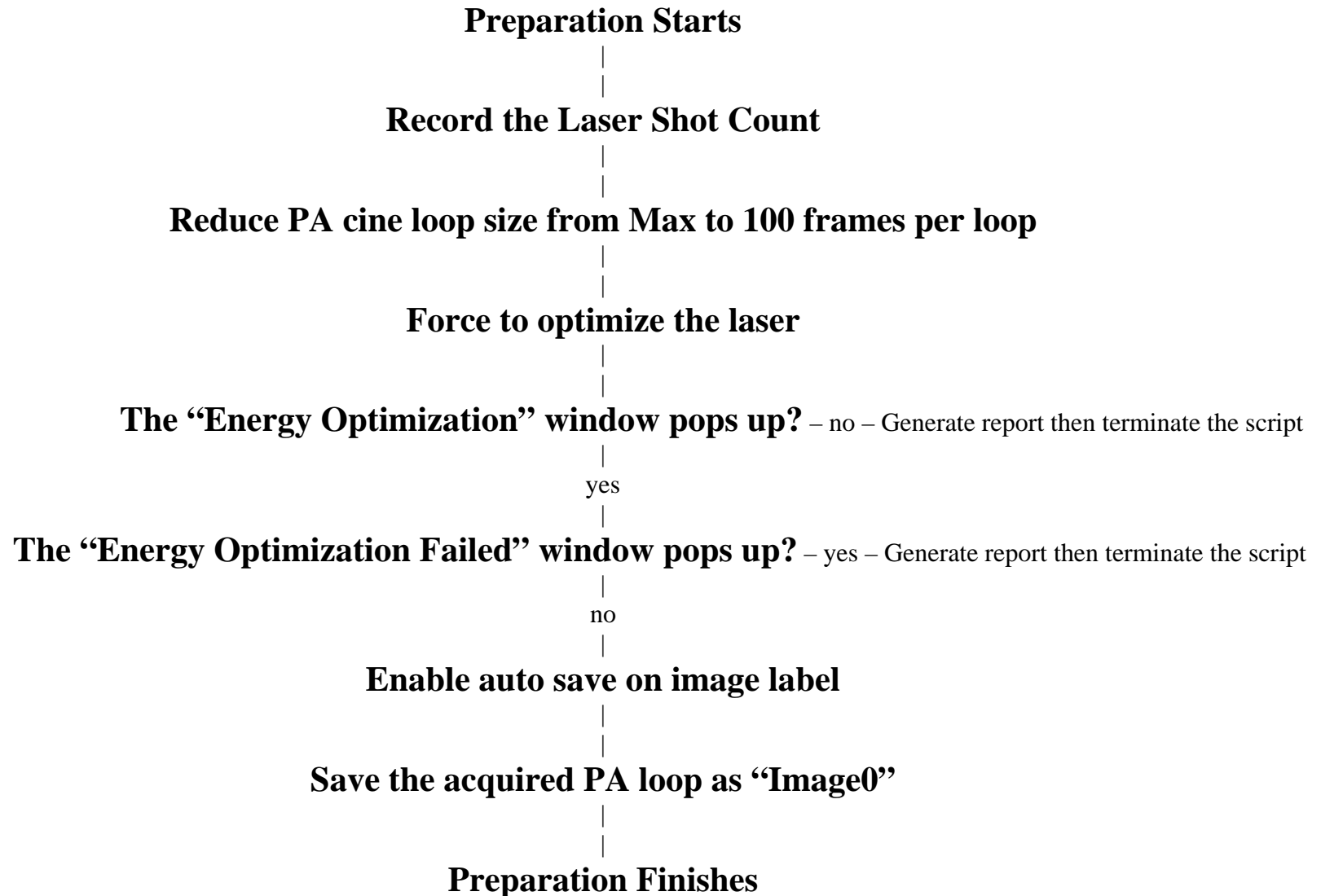
|

yes

|

Preparation

|

(first) ***2 hours Cycle*** (one direction detuning)

|

Cool down 30 minutes

|

(second) **2 hours Cycle** (the other direction detuning)

|

Report

|

Script Finishes

Preparation Starts

|

Record the Laser Shot Count

|

Reduce PA cine loop size from Max to 100 frames per loop

|

Force to optimize the laser

|

The "Energy Optimization" window pops up? – no – Generate report then terminate the script

yes

|

The "Energy Optimization Failed" window pops up? – yes – Generate report then terminate the script

no

|

Enable auto save on image label

|

Save the acquired PA loop as "Image0"

|

Preparation Finishes

2 hours Cycle Starts
|
Record the Laser Shot Count & Laser Voltage
|
****
2 hours Loop Starts
|
Loop 8 times (each loop about 15 minutes, i.e., 4 loops/hour)
|
In each loop:
- acquire & save 4 PA-Mode cine loops (1 cine loop for each sub-mode, each cine loop 3 minutes long)
- detuning the laser
- optimize the laser (normally only optimize once in each loop if the optimization doesn't fail)
|
2 hours Loop Finishes
****
|
Record the Laser Shot Count & Laser Voltage
|
2 hours Cycle Finishes

2 hours Loop – Part I
Acquire & Save PA-Mode cine loops

|

****

Loop 4 times (each loop acquire and save 1 PA-Mode cine loop)
In each loop:

|

Start scanning in PA-Mode & Select "PA Acquisition" Screen Key

|

Previous sub-mode was "Spectro"? (if yes then stay scanning in "Single", otherwise select next sub-mode)

|

The "Spectro Acquisition Setup" window pops up? (if yes then ok it, otherwise do nothing)

|

Scanning 3 minutes for non-Spectro sub-mode or scanning till Spectro sub-mode is paused

|

Record Laser OPO and SHG Energy after pause (these energy are also recorded after succeeded optimizations)

|

The "Energy Optimization" window pops up after pause scan? (if yes then optimize, otherwise continue)

|

Save the acquired PA loop as "Image#" (# is an increasing number)
****

|

2 hours Loop – Part II
Detuning & Optimize the laser

2 hours Loop – Part II
Detuning & Optimize the laser

|

Detuning
****
Loop 10 times (each loop detune (-)2000 steps)

|

The "Energy Optimization" window pops up after each detune?
(if yes break loop go to optimization, otherwise continue looping.)
(If dosn't pop up after loop 10 times, generate report then terminate the script.)
****

|

|

Optimization
****
Loop 100 times (each loop optimize once. only stay in loop when optimization failed but PR>=90%)

|

The "Energy Optimization" window pops up? – no – break loop

|

yes

|

The "Energy Optimization Failed/Incomplete" window pops up?
If no, break loop to go back to "2 hours Loop – Part I (acquire and save PA-Mode loops)"
If yes & PR >= 90%, loop back to optimize again
If yes & PR<90%, generate report then terminate the script
****

Report

==

Report:

The script began from 1/25/2012 1:36:48 PM and finished at 1/25/2012 6:00:24 PM (263.6 minutes in total).

The Laser Shot Count increased from 874981 to 1157269 (increased 282288 in total).

65 PA-Mode cine loops (different sub-modes) were saved.

Total Optimized 17 times, and Failed 0 times.

The Optimization Passing Rate is 100%.

==

Option 1 (current script) – each PA-Mode loop 3 minutes:

Each loop is about 3 * 4 + 3 = 15 minutes. In 2 hours cycle can loop 8 times.

In 4.5 hours, the script will save **65** PA-Mode cine loops and execute **17** Optimizations in total.

Option 2 – each PA-Mode loop 2 minutes:

Each loop is about 2 * 4 + 2 = 10 minutes. In 2 hours cycle can loop 12 times.

In 4.5 hours, the script will save **97** PA-Mode cine loops and execute **25** Optimizations in total.

Option 3 – each PA-Mode loop 1 minute:

Each loop is about 1 * 4 + 2 = 6 minutes. In 2 hours cycle can loop 20 times.

In 4.5 hours, the script will save **161** PA-Mode cine loops and execute **41** Optimizations in total.