Mechano-Active Tissue Engineering

MATEware Tutorial

MATEware Tutorial

These lessons help users practice the software before using real samples. If problems occur during this exercise please consult the User Manual for detailed information.

Materials Required:

Assembled MATE system Six Validation Sample Wells Six Empty Sample Wells Six 500g Calibration Weights

Sections:

- 1. Calibration Exercise
- 2. Analyze Exercise
- 3. Stimulate Exercise
- 4. A & S Sequence Exercise
- 5. Data Retrieval Exercise

Start Span Calibration...

Last Calibration: Sep 24, 2014 at 10:05.11 AM

Press Start Test... when the system

is ready

Before using the MATE, for the first time, it needs to undergo a span and load calibration. These calibrations should be repeated once a month to ensure optimal performance

1. Load the six empty Empty Wells into a MATE Tray and cover the Tray with a MATE Lid.



- 2. Double click the MATEware Icon
- 3. On the MATEware main window click the Calibration Tab.



5. Load the six Empty Wells into a MATE Tray and cover the Tray with a MATE Lid.

Station 2

Station 3

Station 4

Station 5

Station 6

/alue

אר 19 4-

8-8

2-

1-

0-

0.1 0.2 0.3 0.4 0.5 0.6 0.7 Voltage (V)

Station 4

Station 5

Station 6



6. Place the loaded Tray on top of the **MATE**:



- 7. Click the **Start Span Calibration** button automatically calibrates.
- 8. The Span Calibration Window will close automatically when complete.
- 9. Remove the MATE Tray, empty Wells, and MATE Lid from the MATE.



10. Return to the **Calibration Tab** and click the **Load Calibration** button

11. Click the **Start Load Calibration** button automatically calibrates.

Load Calibration		Calibration.vi
Calibration of the MATE force output. This should be rule Calibration Procedure: 1. Remove IId, tray, and wells 2. Press "Start Test" 3. When prompted, place 500 g weights on loading posts. Avoid contact between weights. Start Load Calibration Last Calibration: Sep 24, 2014 at 10:13:10 AM Press Start Test when the system is ready	n on a monthly basis, or before a prolonged experiment. Avoid calibration during a prolonged Results Force Conversion (N/V) Station 1 Station 2 Station 3 Station 4 Station 5 Station 6	d experiment to preserve data consistency.

Start Load Calibration.

12. A window will pop up asking that users place the **six 500g calibration weights** on the MATE loading pistons. Center the weights on each piston, then click the **OK** button.

- 13. The system will continue to **automatically calibrate**. Allow the program to run to completion. The window will automatically close when complete.
- 14. The MATE system is now calibrated. This calibration procedure should be performed once per month, but not during a long-term test series.
- 15. MATEware will automatically notify users when the next system calibration is due.



and wait while the system



This exercise will determine the material proportion of six samples contained in the validation sample wells.

- 1. Double click the **MATEware Icon Method** on the desktop.
- 2. Load the Validation Sample Wells into a MATE Tray and cover the Tray with a MATE Lid. The validation sample wells contain samples of known material properties.



3. Place the loaded Tray on top of the MATE.



- 4. Close the MATEbox handle to secure the lid.
- 5. Click on the **Create Task** button on the MATEware main window.

This exercise will measure the material properties of the six samples by first applying 2% pre-strain followed by an additional 3% test strain, allowing material properties to be compared.

6. Set the values of the Configuration Window as shown:

	General		Analyze
Task	Task Type	Loading	Pre-Strain
	Task Name Tutorial Analyze		Test Strain 🛔 3 % strain
	Operator User Name		
Loadin	3 Mode Strain Mode (%) Safe Strain 50 %		
	Description This is the tutorial	LOADING (strain, pressure, force)	1s 10 s (creep) Test-Load Pre-Load TIME

Task Type set to:

Analyze

Task Name set to Tutorial Analyze

Task Operator set to Your Name

Loading Mode set to Strain Mode (%)

Loading Safe Strain set to 50 %

Sample Diameter set to 8 mm

Loading Pre-Strain set to 2 % strain

Loading Test Strain set to 3 % strain

7. Click the **Save and Close** button to save the test configuration file.

1. Look at the MATEware main window and check that the Task has been loaded into the MATEware main window as shown below:

M			MATE v2.0			_ 🗆 🗙
MATE System Empower Your Research						MATE v2.0 matesystems.com
Task	General	Analyze	Stimulate	A & S Sequence	Status	
CREATE new task LOAD existing task EDIT existing task	"Tutorial Analyze" Analyze Task - Strain Mode (%) 8.0 mm Sample Diameter 50 % Safe Strain Operator : User Name Description: This is the tutorial.	2.0 % Pre-Strain 3.0 % Test Strain 3.0 %/sec Load Rate 10 sec Creep Time			"Tutorial Analyze" Loaded. Press Start to run	ABORT Task

- 2. Click the **Start** button to being the test.
- 3. Wait until the test has been completed, it should take approximately 1 minute.
- 4. While the test is running windows will pop-up showing real time results as shown below:



5. An HTML report will automatically pop-up in an internet browser window:

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Index Configuration Task Configu	[Please see the document titled "HTML Report Read Me File" for information on how to customize the text above]	matesystems.com		
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Analyze Graph The graph below represents the results for the Analyse task Material Test Material Test Mater				S
The graph below represents the results for the Analyse task Material Test	10 sec Creep Time			
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	The graph below represents the results for the Analyse task			
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6. Minimize the HTML report.

Click the Analyze Tab and inspect the results. The results should look similar to the results shown below. Check that all measurements are consistent: thickness should be 2.9mm ± 0.2mm, elasticity should be 600kPa ± 100kPa, creep should be 1.5 %/10sec ± 0.3%/10sec.



Section 3: Stimulate Exercise

This exercise stimulates the samples of the validation sample wells. First, samples are stimulated in "peak strain optimization", whereby the peak strain will exceed the "safe strain" therefor, which in turn will unload specimens for protection.

- 1. Double click the **MATEware Icon Material** on the desktop.
- 2. Load the Sample Wells into a MATE Tray and cover the Tray with a MATE Lid.



3. Place the loaded Tray on top of the **MATE**.



4. Close the MATEbox handle to secure the lid.

Click on the **Create Task** button on the MATEware main window.

5. Set the values of the Configuration Window as shown:

General	Analyze	Stimulate	Analyze & Stimulate Sequence
Task Task Type Stimulate	Loading Pre-Strain 2 % strain	Loading Pre-Strain	Stimulate Sequences per day
Task Name Tutorial Stimulate 1	Test Strain 🕽 3 % strain	Strain Amplitude 🗧 3 % strain	Number of days 📜 1
Operator User Name		Cycling Frequency	Pause between sequences 🖞 🚺 min
Loading Mode Strain Mode (%)		Duration 20 cycles	Analyze Every N sequences
Safe Strain 🖞 50 %		Control Peak Strain Optimization	Using Pre-Load, Test-Load = Amplitude
Sample Description This is the tutorial.			
Diameter* \$ 8 mm * If sample is not round, calculate its cross-section area A and use mainteent director = 0.5 CORE 4, a (3, 1).	DNICOOT BNICOOT Test-Load Pre-Load	Dyn. Strain Ratio = <u>Dyn. Strain</u> Total Strain Strain Onlight Pro-Load Strain Strain Strain Strain Strain Strain Strain Strain Strain	Stimulation Stimulation - Sequence 1 - Pause - Sequence 2 - Sequence 3
	Pre-Load	iii <	

General

Task Type set to:	Stimulate
Task Name set to	Tutorial Stimulate 1
Operator set to	Your Name
Loading Mode set to	Strain Mode (%)
Loading Safe Strain set to	50 %
Sample Description	This is the tutorial.
Sample Diameter set to	8 mm
Stimulate	
Loading Pre-Strain set to	2 % strain
Loading Strain Amplitude set to	3 % strain
Cycling Frequency set to	1 Hz
Cycling Duration set to	20 cycles
Control set to	Peak Strain Optimization

This exercise will stimulate the six samples by first applying 2% pre-strain, followed by an additional 3% dynamic load. The 3% dynamic load will be applied twenty times at 1Hz in **Peak Strain Optimization**.

Peak Strain Optimization will automatically maintain a consistent peak strain of 5% (2% + 3%). Due to sample creep, the static strain can increase over time as shown in the figure below:



- 7. Click the **Save and Close** button to save the test configuration file.
- 8. Make sure the Task has been loaded into the MATEware main window as shown below:

ATE System power Your Research	h -		MATE v2.0			– 🗆 MATE v2. matesystems.co
Task	General	Analyze	Stimulate	A & S Sequence	Status	
CREATE new task	"Tutorial Stimulate 1" Stimulate Task - Strain Mode (%) 8.0 mm Sample Diameter 50 % Safe Strain		2.0 % Pre-Strain 3.0 % Strain Amplitude 1.00 Hz Frequency 20 Cycles Duration		"Tutorial Stimulate 1" Loaded. Press Start to run	START
LOAD existing task	Operator : User Name Description: This is the tutorial.		Peak Strain Optimization			
EDIT existing task						ABORT Task

9. Click the **Start** button to begin the test.

10. Wait until the test has been completed, it should take approximately 1 minute.

11. While the test is running windows will pop-up showing real time results as shown below:

Thickness				ele regares mar er reast es	Current Cycle	nically (i.e., strain amplitdue), and that static compression (Min Strain) accounts for less than 40% of tota Stimulation History	ar compress
Thickness (mm)	Peak Strain (%)	Strain Amp (%)	Min Strain (%)	Finished Cycles	5-	Station	on 1 💦
Station 1 2.8	5.0%	1.7 %	3.3 %	20	4.6-		on 3 🔼
Station 2 2.9	5.0 %	1.6 %	3.4 %	20		2 Statio	on 4
Station 3 2.8	5.0 %	1.7 %	3.3 %	20	e (////////////////////////////////////		on 6 🌄
Station 4 3.0	5.0%	1.7 %	3.3 %	20	3.8-		: peak strai
Station 5 3.0	5.0%	1.7 %	3.3 %	20	3.4-		: : min strain +
	Thickness (mm) Station 1 2.8 Station 2 2.9 Station 3 2.8 Station 4 3.0	Thickness (mm) Seation 1 2.8 Seation 2 2.9 Seation 3 2.8 Seation 4 3.0	Thickness (mm) Peak Strain Strain Amp (%) Station 1 2.8 1.7 % Station 2 2.9 3.8 % Station 3 2.8 1.7 % Station 4 3.0 3.5 % 1.7 %	Thickness (mm) Peak Strain (%) Strain Amp (%) Min Strain (%) Station 1 2.8 17% 3.3% Station 2 2.9 16% 3.4% Station 3 2.8 1.7% 3.3% Station 4 3.0 1.7% 3.3%	Thickness (nm) Peak Strain Strain Amp (%) Min Strain (%) Finished Cycles Station 1 2.8 1.7 % 3.3 % 20 Station 2 2.9 5.8 % 1.6 % 3.4 % 20 Station 3 2.8 1.7 % 3.3 % 20 Station 4 3.0 3.6 % 1.7 % 3.3 % 20	Thickness (mm) Peak Strain (%) Strain Amp (%) Min Strain (%) Finished (Cycles) 52- 4.8- 4.8- 4.8- 4.8- 4.8- 4.8- 4.8- 4.8	Thickness (mm) Peak Strain (m) Strain Amp (%) Min Strain (%) Finished Cycles 52 55 55 56 56 Station 1 2.8 3.3 % 20 4.8 4.5 54 54 55 56

12. An HTML report will automatically pop-up in an internet browser window:

Company Name Company Address Address line 2 phone: xxxxx face xxxxx email: xxxxxx face xxxxx email: xxxxxx email: xxxxxx Places see the document titled "HTML Report Read Me File" in for information on how to customize the text ebove] M///E ID: xxxxxx	the C-/MATE/HTML Additions directory	Matter Trasue Engeleer matesystems.com
	MATE Test Report	
This HTML file is auto-generated at the end of every test. This file ca Auto-generated on: Mon Oct 06, 2014 at 13:34	n be found as a raw HTML document in the C/MATE/Data/(task name)/(start time) dir.	
Task Configuration		
	Stimulate Settings 2.0 % Fire-Stanin 3.0 % Strain Amplitude 1.00 Hs Frequency 20 Cycles Duration	A & 5 Sequence Setting
Description This is the tutorial. Tesk Description : This is the tutorial. Analyze Settings	2.0 % Pre-Strain 3.0 % Strain Amplitude 1.00 Hz Frequency	A & 5 Sequence S
Stimulate Graph		
The graph below represents the Stimulate task. The lines with dots are the Peak Strain. The lines without dots are the Minimum Strain.		
	te Graph	

13. Minimize the HTML report.

14. Click the **Stimulate Tab** and inspect the results. The results should look similar to the results shown below:

Getti	ing Starteo		Ana	lyze	Stimulate	A & S Seque	nce	Calibration	War	ming Log
						Stimulation	History			
	Stimu	lation (last	cycle)		5.25-	• • • • • •				dots : peak strain lines : min strain
	Strain Amp	Peak Strain	Min Strain (%)	Cycles Finished	4.75-					Station 1
Station 1	1.7 %	5.0 %	3.3 %	20	4.25-					Station 2 Kation 3
Station 2	1.6 %	5.0 %	3.4 %	20	£ 3.75 -					Station 4
Station 3	1.7 %	5.0 %	3.3 %	20	G 3.5- 3.25-					Station 5 📩
Station 4	1.7 %	5.0 %	3.3 %	20	3- 2.75-					
Station 5	1.7 %	5.0 %	3.3 %	20	2.5-					Cursors: X Y
Station 6	1.7 %	5.0 %	3.3 %	20	2.25-					<u>Q</u> +
					1.75-1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5 6 7 8 9	10 11 12 Cycle	13 14 15 16	17 18 19	20

After a few cycles, peak strain is optimized to a constant value of 5%. With prolonged cycling, specimen creep will cause a mild increase in minimal strain (i.e., "static strain") due to sample creep.

15. Return to the MATEware main window and click on the **Create Task** button .

16. Set the values of the Configuration Window as shown:

General	Analyze	Stimulate	Analyze & Stimulate Sequence
Task Task Type Stimulate	Loading Pre-Strain 2 % strain	Loading Pre-Strain 2 % strain	Stimulate Sequences per day
Task Name Tutorial Stimulate 2	Test Strain 🗧 3 % strain	Strain Amplitude 3 % strain	Number of days 🗍 🧵
Operator User Name		Cycling Frequency 1 Hz	Pause between sequences
Loading Mode Strain Mode (%)		Duration 20 cycles	Analyze Every N sequences
Safe Strain 🗧 6 %		Control Amplitude Optimization	Using Pre-Load, Test-Load = Amplitude
Sample Description This is the tutorial.			
Diameter* \$ mm * If sample is not round, calculate its cross-section area A and use equivalent dimeter: D = SQRT4 x A 3.140	15 10 s (creep) Test-Load Pre-Load	Dyn. Strain Ratio = Dyn. Strain Total Strain Strain Strain Strain Strain Strain Strain Strain Strain Strain Strain Strain Strain Strain Strain	Sequence Pause

General

Task Type set to:	Stimulate
Task Name set to	Tutorial Stimulate 2
Operator set to	Your Name
Loading Mode set to	Strain Mode (%)
Loading Safe Strain set to	6 %
Sample Description	This is the tutorial.

Sample Diameter set to	8 mm
Stimulate	
Loading Pre-Strain set to	2 % strain
Loading Strain Amplitude set to	3 % strain
Cycling Frequency set to	1 Hz
Cycling Duration set to	20 cycles
Control set to	Amplitude Optimization

- 17. This exercise will stimulate the six samples by first applying 2% pre-strain, followed by an additional 3% dynamic load. The 3% dynamic load will be applied twenty times at 1Hz in **Amplitude Optimization**. Be sure to set the Safe Strain to 6%.
- 18. Amplitude Optimization will maintain a consistent strain amplitude of 3% (test strain) However, due to sample creep the peak strain can increase over time as shown in the figure below:



- 19. Click the **Save and Close** button to save the test configuration file.
- 20. Look at the MATEware main window and check that the Task has been loaded into the MATEware main window as shown below:

			MATE v2.0			- D
ATE System power Your Research	h					matesystems.com
Task	General	Analyze	Stimulate	A & S Sequence	Status	
CREATE new task	"Tutorial Stimulate 2" Stimulate Task - Strain Mode (%) 8.0 mm Sample Diameter 6 % Safe Strain Operator : User Name		2.0 % Pre-Strain 3.0 % Strain Amplitude 1.00 Hz Frequency 20 Cycles Duration		"Tutorial Stimulate 2" Loaded. Press Start to run	START
LOAD existing task	Description: This is the tutorial.		Amplitude Optimization			
EDIT existing task						ABORT Task

21. Click the **Start** button to being the test.

22. Wait until the test has been completed, it should take approximately 1 minute.

23. While the test is running windows will pop-up showing real time results as shown below:



24. An HTML report will automatically pop-up in an internet browser window:

Company Address Address Inc 2		
phone: xxxxxx		NA I F
fax: xxxxxxx emeil: xxxxxxx		Mechano-Active Tissue Engineering
[Please see the document titled "HTML Report Read Me File" in the C/MA for information on how to customize the text above]	TE/HTML Additions directory	matesystems.com
MATE ID: xxxxxx		
	MATE Test Report	
This HTML file is auto-generated at the end of every test. This file can be found	3 as a raw HTML document in the C:/MATE/Data/(task name)/(start time) dir.	
Auto-generated on: Mon Oct 06, 2014 at 13:37		
Task Configuration		
The parameters used to define the task are listed below		
General Settings		
"Tutorial Stimulate 2" Stimulate Task - Strain Mode (%)		
8.0 mm Sample Diameter 6 % Safe Strain		
Operator : User Name Description:		
This is the tutorial. Task Description : This is the tutorial.		
	Stimulate Settings 2.0 % Pre-Strain	
Analyze Settings	3.0 % Strain Amplitude 1.00 Hz Frequency	A & S Sequence Settings
	20 Cycles Duration Amplitude Optimization	
Stimulate Graph		
The graph below represents the Stimulate task. The lines with dots are the Peak Strain.		
The lines with dots are the Yeak strain. The lines without dots are the Minimum Strain.		
Stimulate Graph	Station 1	
5	Station 2	
3	Station 3 Station 4	
4-	Station 5 Station 6 Station 6	
C 35- 9- 3-		
23-		
15-		
0.5		
	12 13 14 15 16 17 18 19 20	

25. Minimize the HTML report.

26. Click the **Stimulate Tab** and inspect the results. The results should look similar to the results shown below. Due to the stimulation being run in **Amplitude Optimization**, the samples were able to creep past the 6% safe strain limit. As soon as a sample exceeded the 6% safe strain threshold, loading of this sample was discontinued.



Section 4: A & S Sequence Exercise

This exercise will combine Analyze and Stimulation tasks into a sequence.



- 1. Double click the **MATEware Icon Method** on the desktop.
- 2. Load the Sample Wells into a MATE Tray and cover the Tray with a MATE Lid.



3. Place the loaded Tray on top of the **MATE**.



4. Close the MATEbox handle to secure the lid.

CREATE new task on the MATEware main window. Click on the Create Task button

5. Set the values of the Configuration window as shown:



General

Task Type set to:	A & S Sequence
Task Name set to	Tutorial Stimulate A & S
Operator set to	Your Name
Loading Mode set to	Strain Mode (%)
Loading Safe Strain set to	50 %
Sample Description	This is the tutorial.
Sample Diameter set to	8 mm
Stimulate	
Loading Pre-Strain set to	2 % strain
Loading Strain Amplitude set to	3 % strain
Cycling Frequency set to	1 Hz
Cycling Duration set to	10 cycles
Control set to	Amplitude Optimization
Analyze & Stimulate Sequence	
Sequences per day set to	6
Number of days set to	1 day
Pause between sequences set to	o 1 min

This exercise will combine the Analyze and Stimulate exercises into one test that will both analyze and stimulate samples. Samples will first be analyzed with a 2% pre-strain followed by an additional 3% test strain. Ten dynamic loads will be applied to samples during the stimulate portion of the test at 1Hz. This sequence will repeat five times. The Analyze portion of the test will be run every two sequences.

- 6. Click the **Save and Close** button to save the test configuration file.
- 7. Please check that the Task has been loaded into the MATEware main window as shown below:

E System wer Your Researc	h					MAT matesysten
Task	General	Analyze	Stimulate	A & S Sequence	Status	
CREATE new task	"Tutorial A & S" A & S Sequence Task - Strain Mode (%) 8.0 mm Sample Diameter 50 % Safe Strain Operator: User Name Description:	2.0 % Pre-Strain 3.0 % Test Strain 3.0 %/sec Load Rate 10 sec Creep Time	2.0 % Pre-Strain 3.0 % Strain Amplitude 1.00 Hz Frequency 10 Cycles Duration Amplitude Optimization	6 Sequences / day 1 Days 1 min pause between Sequences ANALYZE every 2 Sequences	"Tutorial A & S" Loaded. Press Start to run	START
EDIT isting task	This is the tutorial.					ABORT Task

- 8. To begin the test click the **Start** button
- 9. Wait until the test has been completed, it should take approximately 11 minutes.
- 10. While the test is running windows will pop-up showing real time results as shown below:



11. An HTML report will automatically pop up in a browser window showing the results. Notice that there are more graphs shown on this report than the Analyze or Stimulate only reports:

hana: xxxxxx n: xxxxxx Manas are the document tided "MTML Report Read Me File" in the C-/NATE/MTML Additions directory rinformation on how to customize the text show) MI To man			Mechano-Active Tissue Eng matesystems.
MATE ID: x0000X			
		MATE Test Report	
this HTML file is auto-generated at the end Auto-generated on: Men Oct 06, 2014 at 1		v MTML document in the C:/MPTE/Deta/(task name)/(start time) die	
T. 1. 0 F			
Task Configuration			
The parameters used to define the task are 1 General A.S. 5" "Tustinal A.S. 5" 8.0 mm Sample Diameter 30 % Safe Stain Operator: User Name Description: This is the tustinik. Task Description : This			
Analyze Settings	is the tutonial.	Stimulata Settings 2.0 % Pre-Strain	A & S Sequence
Ananya Saming 2.0 N Pre-Samin 2.0 N Pre-Samin 3.0 N Samin Amplitude 3.0 N Satisfumin			6 Sequence
3.0 % Test Strein			
2.0 K vinactorin 3.0 K/vac Lovel Inte 3.0 K/vac Lovel Inte 18 sec Casep Time		1.00 Ptr. Praguancy 10 Cycles Downion Amplitude Optimization	1 min pause between Se ANASTE every 2 Set
3.0 % Test Strain 3.0 %/sec Load Nate		10 Cycles Duration	1 min pause between Sec
3.0 % sat Souin 3.0 %/sat Load Mee 30 sec Casep Time A & S Sequence Graphs	file A & 3 Sequence rault summary graph. Sample Thickness	10 Cycles Dountion Amplitude Optimization	1 min pause between Sec
3.0 % sat Sorin 3.0 % sat Sorin 3.0 % set Carep Time A & S Sequence Graphs The graph below represent such option of		10 Cycles Dountion Amplitude Optimization Status 2 Batta 3 Batta 4	1 min pause between Sec
A & Sa Social So		10 Cycles Dountion Amplitude Optimization	1 min pause between Sec
3.0 % tast Sorin 3.0 % for Load Inte 3.0 wire Load Inte 3.0 wire Casep Time A & S Sequence Graphs The pushs below represent such option of		10 Cycles Dountion Amplitude Optimization Sector 1 Sector 1 Sector 1 Sector 1	1 min pause between Sec
3.0 % has been 3.0 % has been 3.0 were clear the 3.0 % of t		10 Cycles Dountion Amplitude Optimization Sector 1 Sector 1 Sector 1 Sector 1	1 min pause between Sec
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13. Click the A & S Sequence Tab and inspect the results. The results from both Analyze and Stimulate can be viewed by clicking the buttons on the left of the graph. The Thickness results should look similar to those shown below. Notice that there are only three data points due to Analyze only being run every two sequences:



14. Click the **E Modulus** button to view the elastic modulus measurements from each Analyze sequence.

Getting Started	Analyze	Stimulate	A & S Sequence	Calibration	Warning Log
Result	660-1		Elasticity		
halyze Thickness	600-				Station 1 Station 2
E Modulus	500-				Station 3
Creep (10s)	(600 - (6년) 의 400 -				Station 4 Station 5
Cycles Completed	900				Station 6
Peak Strain	200-				
Strain Amplitude	100-				Cursors: X 1
	0-	2	3	4	<u>@</u> + <u>@</u>

15. Click the **Creep (10s)** button to view the creep measurements from each Analyze Sequence.



16. Click the **Cycles Completed** button to view the number of cycles each sample completed during each of the Stimulate portions of test. The **Cycles Completed** results should look similar to below. Notice that there are six data points for the Stimulate results corresponding to the number of sequences in the test:



17. Click the **Peak Strain** button to view the peak strain each sample experienced during each of the stimulate portions of the test. The **Peak Strain** results should look similar to below:

Ge	tting Started	Analyze	Stimulate	A & S Sequence	Calibration	Warning Log
R	Result	6.6-		Peak Strain of Last Cycle		
Analyze	Thickness E Modulus	6-				Station 1 💦 Station 2 💦 Station 3 🏹
	Creep (10s)	6° 4-				Station 4
Stimulate	Cycles Completed	2-				Station 6 📩
	Strain Amplitude	1-				Cursors: X Y 1 6.2
		0-1-1-1	2	3 4 Sequence	5	6 6

18. Click the **Strain Amplitude** button to view the maximum strain amplitude each sample experienced during each of the stimulate portions of the test. The **Strain Amplitude** results should look similar to below:



1. Retrieve the Tutorial A & S Sequence Data by clicking on Windows File Explorer

an the MATEpc Desktop screen.

2. Then follow the file path through the C drive shown below to access test data:



3. In the Data folder find and open the **Tutorial A & S Sequence Folder**:

Name	Date modified	Туре	Size	
퉬 Tutorial A & S 鷆 Tutorial Analyze	9/25/2014 12:50 PM 9/25/2014 12:50 PM			

 Open the Tutorial A & S Sequence Folder. Inside find the folder corresponding to the last instance the task was run. Tasks of the same name are stored in the same folder with a time stamp YMD_TIME to identify each task, i.e. Tutorial A & S was run on 20<u>14</u>, September <u>24</u>, at <u>15:46</u>.



5. Find the most recent Tutorial A & S data folder and open it.

Tutorial A & S 140924_1546 HTML Report Dir

- 🕌 Tutorial A & S 140924_1546 Raw Analyze Data
- 🐴 Tutorial A & S 140924_1546 Summary
- There are three folders present: the first is the HTML report, the second is the Analyze Results in tabular form, and the third is the data summary which shows all the A & S Sequence Results in tabular form.