


## How to use CalTenCurve?

Update: 18/April/2022

1. Version of MATLAB is at least R2019a. The formats of your data should be .xlsx or .csv.
2. The column number of strain and stress should be the SAME in every raw data file.

21 and 22 column for example



U	V
strain (mm/mm)	stress (Mpa)
0	0
0.000164	3.077946
0.000328	5.437705
0.000524	9.541633
0.000711	6.155892
0.00089	3.077946
0.001032	6.361088
0.001203	7.284472

Fig. 1

3. This code is suitable for standard curves. So, please pre-process the data before using it.

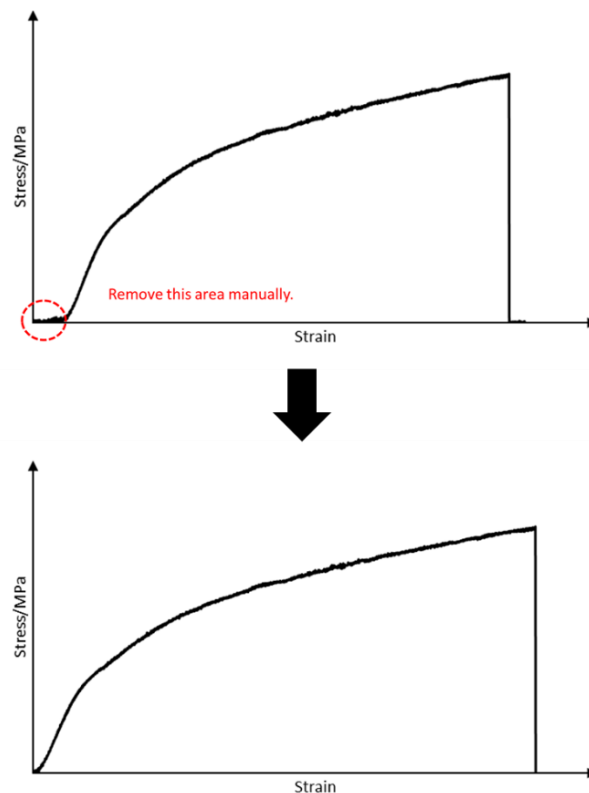


Fig. 2

4. Put ONLY your data files in one folder, the name of files can be any type. (Fig. 3)

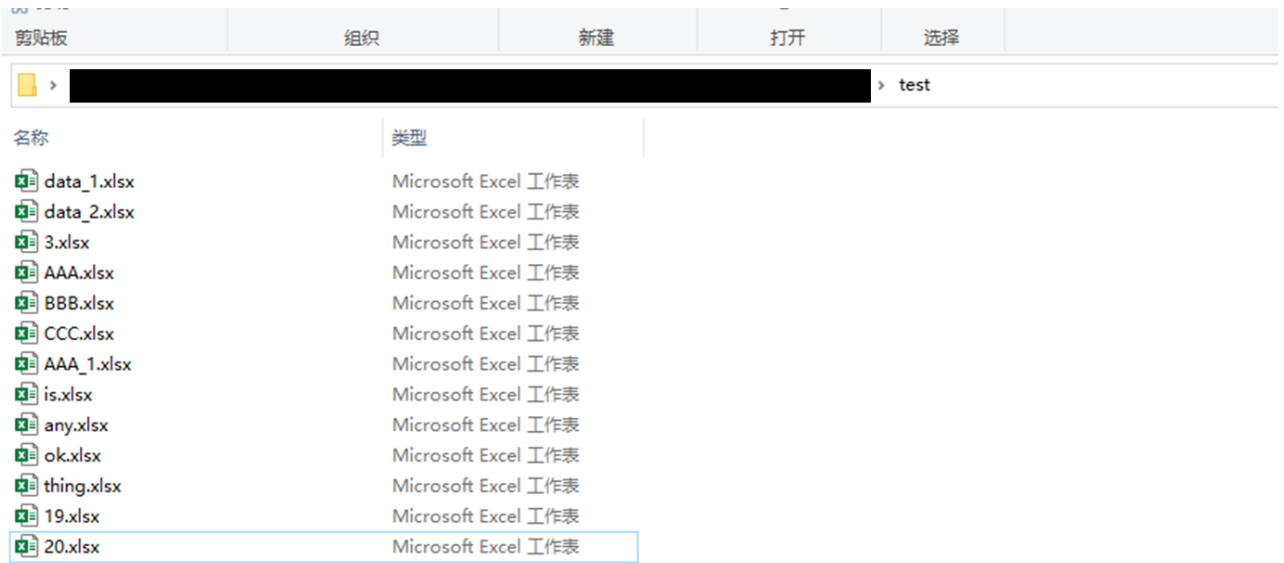


Fig. 3

5. Open MATLAB and run CalTenCurve.

First, run CalTenCurve and select your test folder. (Fig. 4)

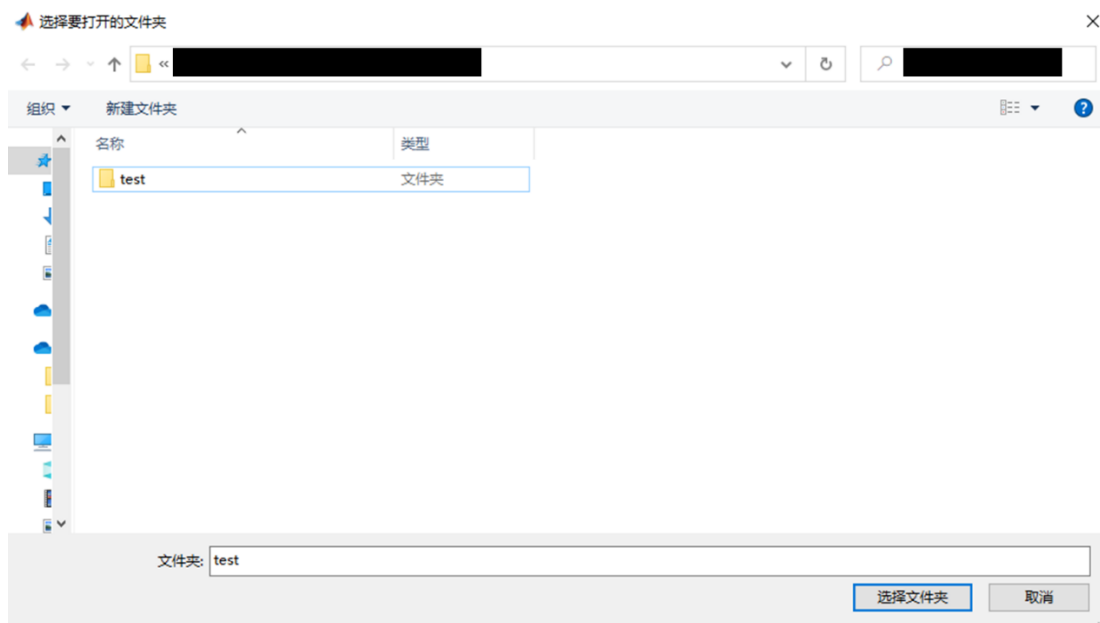


Fig. 4

Next, the code will let you enter the columns number of strain and stress. For example, 21 and 22. (Fig. 1)

```
Please enter the column number of strain in data:21
Please enter the column number of stress in data:22
```

Fig. 5

Finally, the code will let you enter the start and end strain values that are used to calculate Young's modulus. (For example material, strain from 0.003 to 0.01 is a linear range that can be used to calculate the modulus. You should choose the best range of your material.)

```
Please enter the START strain value to calculate Youngs modulus:0.003
Please enter the END strain value to calculate Youngs modulus:0.01
```

Fig. 6

## 6. Get results

All results can be found in Workspace, generally on the right side of the screen. Results are all variables starting with "Total\_".

Total_toughness		
13x2 cell		
	1	2
1	'19.xlsx'	37.1983
2	'20.xlsx'	37.8067
3	'3.xlsx'	61.6283
4	'AAA.xlsx'	54.7477
5	'AAA_1.xlsx'	78.1614
6	'BBB.xlsx'	29.7253
7	'CCC.xlsx'	43.0973

Total_breaking_strain	13x2 cell
Total_strength	13x2 cell
Total_toughness	13x2 cell
Total_Youngs	13x2 cell

Fig. 7

Open them and you will get your results for Young's modulus, strength, breaking strain and toughness.