sigTOOL has been developed by Malcolm Lidierth in the Wolfson Centre for Age-Related Diseases at the Guy's Hospital Campus of King's College London, London UK.

For a summary of sigTOOL features see
M. Lidierth (2009). sigTOOL: a MATLAB-based environment for sharing laboratory-developed software to analyze biological signals. *Journal of Neuroscience Methods* **178**, 188-196.

Installing sigTOOL

sigTOOL requires MATLAB R2006a or later for full compatibility. Make sure you have the latest version by checking:

http://sourceforge.net/projects/sigtool/

1. Unzip the sigTOOL source file to any location on your PC where you have administrator rights (i.e. both read/write access). All sigTOOL files and folders will be unzipped to a folder named sigTOOL e.g.
    > Windows
    > C:\Documents and Settings\username\matlab\sigTOOL
    > Linux
    > \home\username\sigTOOL
    > Mac
    > \Users\username\sigTOOL

    (Note: If the sigTOOL zip file contains multiple zipped files, unzip each one in turn).
2. Run MATLAB
3. From the MATLAB File menu choose Set Path.
4. Using the Add Folder option, add the
    > ….\sigTOOL\program

    folder to the MATLAB path (do not use Add with subfolders).
5. Save the path and close the path manager.
6. At the MATLAB prompt type sigTOOL.

Note: sigTOOL manages the MATLAB path dynamically. If you save the path after sigTOOL has been run, the sigTOOL subfolders will subsequently be added to the path every time you run MATLAB. Either:
1. Choose *File->Set path* in MATLAB and "Remove" all sigTOOL folders
or
2. Choose *File->Set path* in MATLAB, and select the "Default" path button.
Then add the ….\sigTOOL\program folder again as in Steps 5 and 6 above.

Platform specific steps:

Windows
1. A handful of sigTOOL routines have been written in C/C++ and need the Microsoft Visual Studio 2005 Run-Time Libraries. These are probably already installed. If not you will see
   ```
   ??? Invalid MEX-file '….\FILENAME.mexw32': This application has failed to start because the application configuration is incorrect. Reinstalling the application may fix this problem.
   ```
   To get the libraries see
   http://www.mathworks.com/support/solutions/data/1-2223MW.html
2. With MATLAB R2006a or earlier you may need to recompile some mex files. See "Support for old MATLAB versions" below.
3. On R2008b, items in the Result and Channel Managers may not resize properly when a window is maximized using the top right window controls. Resizing by dragging a corner of the window will reset things correctly.

Linux
1. On some Linux installations, the pop-up menus used in the sigTOOL graphical user interface may not respond as expected to mouse-clicks. This is due to a bug in MATLAB and affects MATLAB's own graphical controls as well as those in sigTOOL. This bug affects versions R2007b and R2008a only. There is presently no fix other than to upgrade to R2008b or revert to MATLAB R2007a or earlier.
2. A handful of sigTOOL m-file routines are shadowed by a mex-file which should run automatically in preference to the m-file. If a mex-file fails, you may need to recompile the C/C++ sources for the specific Linux platform. To do this
   i. Set up the MATLAB mex compiler by typing:
      mex −setup
      at the MATLAB prompt. For help type "help mex" at the MATLAB command prompt.
   ii. Type
      sigTOOL('compile');
      at the MATLAB prompt. This should automatically compile the required C/C++ source files and generate the mex-files.
3. On R2008b, items in the Result and Channel Managers may not resize properly when a window is maximized using the top right window controls. Resizing by dragging a corner of the window will reset things correctly.

Apple Mac
1. A handful of sigTOOL m-file routines are shadowed by a mex-file which should run automatically in preference to the m-file. Mex-files are not presently included for Intel CPU-based Macs. Generate the required mex-files by compiling the appropriate C/C++ source files:
   i. Set up the MATLAB mex compiler by typing:
      > mex –setup

      at the MATLAB prompt. For help type "help mex" at the MATLAB command prompt.
   ii. Type
      > sigTOOL('compile');

      at the MATLAB prompt. This should automatically compile the required C/C++ source files and generate the mex-files.

Adding Options

The following 'stand-alone' MATLAB packages can be called by sigTOOL. These are not included in the sigTOOL distribution and need to be installed separately when sigTOOL is first installed; they do not need to be re-installed if sigTOOL is just being updated.

FastICA and Icasso for independent components analysis
To download both FastICA and Icasso visit:
> http://www.cis.hut.fi/projects/ica/fastica/.

FastICA was written by Hugo Gävert, Jarmo Hurri, Jaakko Särelä, and Aapo Hyvärinen. Icasso was written by of Johan Himberg.

EzyFit
Curve fitting requires EzyFit by Frederic Moisy. Download this from:
> http://www.mathworks.com/matlabcentral/fileexchange/loadFile.do?objectId=10176

To use EzyFit from sigTOOL you need only extract the files to your MATLAB work folder and place the …/ezyfit folder on the path (using File->Set Path in MATLAB). To install EzyFit as a Toolbox follow the author's instructions.

Wave_clus
The Wave_clus spike detection and sorting software needs to be downloaded from
> http://www.vis.caltech.edu/~rodri/Wave_clus/Wave_clus_home.htm

To use Wave_clus from sigTOOL, extract the files to your MATLAB work folder and place the …/ Wave_clus folder and subfolders on the path (using File->Set Path in MATLAB).

Multimedia file support

Import of multi-media files is supported via Micah Richert's mmread function. Download this from:

http://www.mathworks.com/matlabcentral/fileexchange/loadFile.do?objectId=8028&objectType=file

Extract the files to a folder and add it to your MATLAB path as above.

Support for old MATLAB versions

sigTOOL will not be supported for versions of MATLAB prior to R2006a but you may nonetheless be able to use some functions. Known issues are:

Version 7.01 through 7.1

If you are using MATLAB version 7.1 or earlier, the sigTOOL GUI will behave quirkily. For 7.01 or 7.04 you will need to edit MATLAB's JAVACOMPONENT.M file. Instructions on how to do this can be found at

http://www.mathworks.com/matlabcentral/fileexchange/loadFile.do?objectId=15580&objectType=FILE

The sigTOOL GUI is not compatible with version of MATLAB earlier than 7.01 but many sigTOOL functions will still be usable from the MATLAB command line.

Version 6 and 7.00
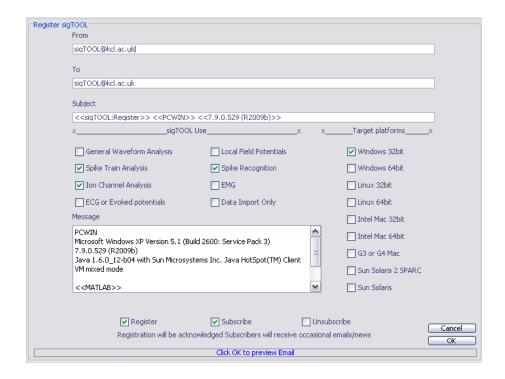
You can not use the sigTOOL GUI.

You may be able to call individual import functions, e.g ImportSMR for a Cambridge Electronic Design Spike2 file. Memory mapping will not be available. To load sigTOOL data files use the standard load command specifying the mat format explicitly e.g

```
load myfile.kcl -mat
load myfile.kcl chan1 –mat
```

Registering and subscribing

The sigTOOL GUI lets you register sigTOOL and subscribe to updates. Registration will help us to target further development of sigTOOL and raise funds for that development.

In the sigTOOL GUI, select Help -> sigTOOL-> Register sigTOOL

Registered users will receive an acknowledgment but should receive no further emails

Subscribers will receive notification when updates of sigTOOL are posted to the SourceForge website and occasional news about sigTOOL.

Note that this is independent of any news/RSS feeds you may have set up from SourceForge.

To **unsubscribe** subsequently, repeat the process selecting the unsubscribe check box