

## FOLDER CONTENT

<code>/img_to_ell/threshold</code> Usage : <code>./threshold micro1.pgm</code> <code>micro1a.pbm micro1b.pbm 200 400</code>	Converts greyscale .pgm image to black & white .pbm image containing the inclusions, given the minimum and maximum threshold.
<code>/img_to_ell/img-to-ell</code> Output: <code>random1.dat</code>	Reads the .pbm image to create a file describing the inclusions. Input parameters for this tool can be changed in <code>ell8.inp</code>
<code>/randomgen/rangen</code> (Usage detailed in <code>vcfem_rangen_help.pdf</code> ) Output: <code>random1.dat</code>	Can be used to generate random distribution of particles in the absence of a micrograph.
<code>/img_to_ell/plotell/plot_ell_dat.m</code>	Matlab program to plot the inclusions described in <code>random1.dat</code> file.
<code>/meshgen/mesh</code> Output: <code>vhomo.inp</code>	Reads the <code>random1.dat</code> file generated by <code>img-to-ell</code> tool and outputs the simple mesh.
<code>/meshgen/add_node</code> Output: <code>finalmesh.inp</code>	Reads the <code>vhomo.inp</code> file and adds nodes to create a complete mesh. Material properties can be changed by editing source code in <code>add_node.f90</code> .
<code>/meshgen/plot_mesh.m</code>	Matlab program to plot the VCFEM mesh described in the mesh file.
<code>/examples</code>	Contains some example problems along with input data and results.
<code>/postproc/extract/extract_m2</code> Output: <code>matrix.dat</code> <code>inclusion.dat</code>	Extracts the data from the file <code>results_un.dat</code> generated by the simulation for postprocessing.
<code>/postproc/contour/</code> Usage: <code>vtkpython CMRL.py</code>	This python program reads the output from <code>extract_m2</code> and creates contour plots. Files <code>matrix.dat</code> and <code>inclusion.dat</code> must be copied into the “contour” folder.
<code>/source_code/</code>	Contains the source code for the VCFEM program.