Guide to simulating the capacitance matrix in ANSYS Maxwell

1. Maxwell 3D > Solution Type > Electrostatic
2. Modeler > Units > um
3. Modeler > Import > [your design]
   1. Un-select PYDXF layer
   2. Units: um
   3. “Import as 2D sheet”
4. Delete unwanted boxes
5. Select remaining shapes > Edit > Boolean > Unite
6. Objects need to be completely separated from ground plane – if needed, add rectangle to shapes to disconnect from ground
7. Draw rectangle around shapes for ground plane
8. Select all > Edit > Boolean > Subtract objects from ground plane
9. Draw substrate and vacuum as described previously
10. Sweep objects across normal (choose thickness of material)
11. Delete the old sheets so that the design is all objects
12. For each object, assign an excitation
    1. Right click > Assign Excitation > Voltage
    2. Set one of these (any one) to -1V, all others can be 0V. This just ensures that it will solve for the capacitances because there is some voltage in the simulation.
13. Parameters > Assign Matrix > Select All
14. Analysis > Add Solution Setup:
    1. Max # passes: 100
    2. Min # converged passes: 3
15. Analyze
16. Solution Data > Matrix
    1. Row, Col correspond to capacitance between those two objects