Openings for a post-doctoral scientists

We seek two post-doctoral scientists for the following projects:

(i) **Materials science of imprintable epitaxy**: Almost all of semiconductor microelectronics and solar cell technologies rely upon the use of single crystal wafers or near single crystal wafers to act as a template  for a single crystal device layer in question that is typically less than 1-2 microns in thickness.  Being able to create these single crystal layers on arbitrary substrates such as glass will change semiconductor manufacturing because of the cost and flexibility advantages it will provide.  This project will examine the underlying materials science and physics that needs to be understood and controlled in order to accomplish this.

My group has a position open for a post-doctoral scientist for carrying out research on imprintable epitaxy, where “peelable” crystalline templates are used to initiate amorphous to epitaxial transformations via solid phase processes. Applications for these types of structures would be in solar cells and microelectronics.

(ii) **Near field chemical vapor deposition for 3-D additive synthesis of epitaxial structures**.  The goal here is to combine near field techniques (such as those used in atomic force microscopies for instance) with epitaxial deposition techniques for being able to write nanoscale epitaxial structures in three dimensions for novel device and memory applications. There are many applications for this, particularly in the area of doped solid state qubits for quantum information science where controlled, localized placement of dopants is critical.

The candidate should have a strong experimental background in materials science, physics or chemistry, preferably with high vacuum expertise and thin films/epitaxial heterostructures expertise. Candidates with expertise in building near-field imaging systems are also encouraged to apply. The position will be in the Institute for Molecular Engineering (IME) at the University of Chicago.  There will be extensive opportunities to collaborate with scientists at Argonne National Laboratories.

If interested please send your CV to Supratik Guha (guha@uchicago.edu. For more information on the Guha research group please see:

<http://guha-lab.ime.uchicago.edu/index.html>.