

**University of California at Berkeley  
College of Engineering  
Mechanical Engineering Department**

**ME118, Spring 2015**

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**Lab #1**

**Due : One week after the last group's lab time**

**Lab 1 (Synthesis of CNTs)**

Please read through paper #2 carefully as lab #1 is based on the same process. TA will prepare the samples that already have different layers of materials (including catalyst) on the silicon substrate.

- (1) Go to 1113 Etcheverry at the time you are assigned and take a photo of the specimen you are assigned before the synthesis process. You should ask TA or reader on the specific dimensions, thickness ... of the specimen
- (2) Under the guidance of TA or Reader, please place the sample into the tube and set the right gas flow and temperature similar to paper #2 with a target growth time suggested by TA or Reader.
- (3) After the synthesis process, please move the sample out of the tube (must wait until the tube is cooled down). Please take a photo for the sample after the synthesis process
- (4) Measure the IV response of CNTs
- (5) Estimate the resistance of the CNT and if possible, suggest ways to measure the contact resistances.
- (6) write a short (1 page) report about this lab, including IV response of CNT bundles.