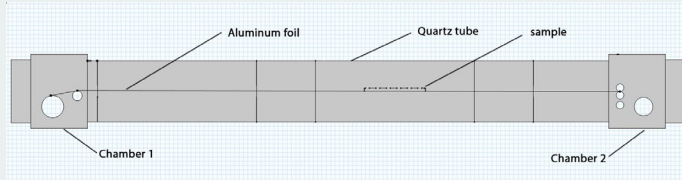


Purpose and aim



The aim of the project is to study different parameters in the CVD process using computational fluid dynamics simulation. There is a reactor that produces high-mass loaded electrodes with CNTs while another reactor has low-mass loading. By understanding the conditions that makes the good reactor produce good electrodes, we can try to apply the same conditions to any other reactor. A secondary project also is to enhance the current formula the company uses to produce the electrodes. By varying the carrier gas percentage and the hydrocarbon gas to reach the ultimate formula for the highest possible capacitance.

Results, important findings

While the temperature is an important factor, we can't modify it due to the aluminum electrodes. however, we can modify the gas composition. Altering the gas composition alters the velocity of the composition, we found that halving the current gas flow can yield conditions close to the reactor that produces good electrodes.

Enhancing Carbon Nanotube Growth for industrial-scale production of Supercapacitor Electrode: A Multifaceted Investigation of Key Factors in CVD Process



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