Development of a numerical code for plasma etching simulation based on the plasma-chemical reactions using python or C computer language

Abstract

Plasma Based etching process is an important method for various microchips and circuits printing. It is also used to clean the surfaces of the reactor and other substrates. To simulate the experiment of plasma etching a code is required. The objective of the project is to develop a 0-d code for the plasma etching process which is based on the chemical reaction dynamics. It is a steady-state code. The mass conservation of the reactor and energy conservation equation suppose to be modeled to estimate the species concentration and temperature. The code should be applied to the C_2F_6 *plasma reactor for* SiO_2 *etching. The outcome of the project will be a python or C language based code for the plasma etching simulation purpose.*

Academic Project Requirements:

1) **Required No. of student(s) for academic project: 01**

2) **Name of course with branch/discipline: _M. Tech. (Chemical Engineering) OR M. Tech (Nuclear Engineering) OR M. Sc. (Physics)**

3) **Academic Project duration:**

   (a) Total academic project duration: 9-12 Months
   (b) Student's presence at IPR for academic project work: 3 or 4 full working days per week (or as per IPR Office Guideline)

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