

### Modeling and simulation of polysilicon CVD reactor using chlorinated silane as a precursor

최병희, 양대륙\*  
고려대학교  
(dryang@korea.ac.kr\*)

Polysilicon is raw material utilized in semiconductor, solar panel and etc. and it's demand become rise. Accordingly, Production process is also a matter of interest. Despite of it's needs, Modeling of polysilicon production process are rarely carried out. Because it is difficult to analyse this process and need excessive calculation. To describe this process properly, Momentum, energy and component balance is taken into account in model and It should be considered that adsorption and desorption on Silicon surface as well as gas phase reaction. In this study, Siemens process which is the one of the most used in a world to produce polysilicon is modeled and simulated. In this model, TCS is employed as a precursor diluted in H<sub>2</sub> gas. A series of gas and surface reactions are included and 2D symmetric momentum, energy, component balance are used. Finally, using suggested model, operating condition are researched to get maximum polysilicon growth rate.