

### Optimization of operating condition for Siemens polysilicon CVD reactor

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In general, one of the most widespread polysilicon production methods is Siemens process using CVD reactor. Although this scheme is extensively employed in industrial fields, behavior in the reactor has yet to be solved. Main point of this process is conflict between etching and deposition of silicon based precursor on surface of polysilicon. There are some operation conditions in which growth rates are fluctuated in a sensitive manner; Temperature of rod, concentration of precursor and flux of gas stream. Optimization of these conditions is crucial since it directly related to the benefits. There are several studies concerning TCS deposition reaction in plat reactors but there is little study in Siemens reactor. In this study, the goal of this simulation is to find operation condition where it reaches the best performance in terms of growth rate using simplified cylindrical model which is able to represent the Siemens reactor.