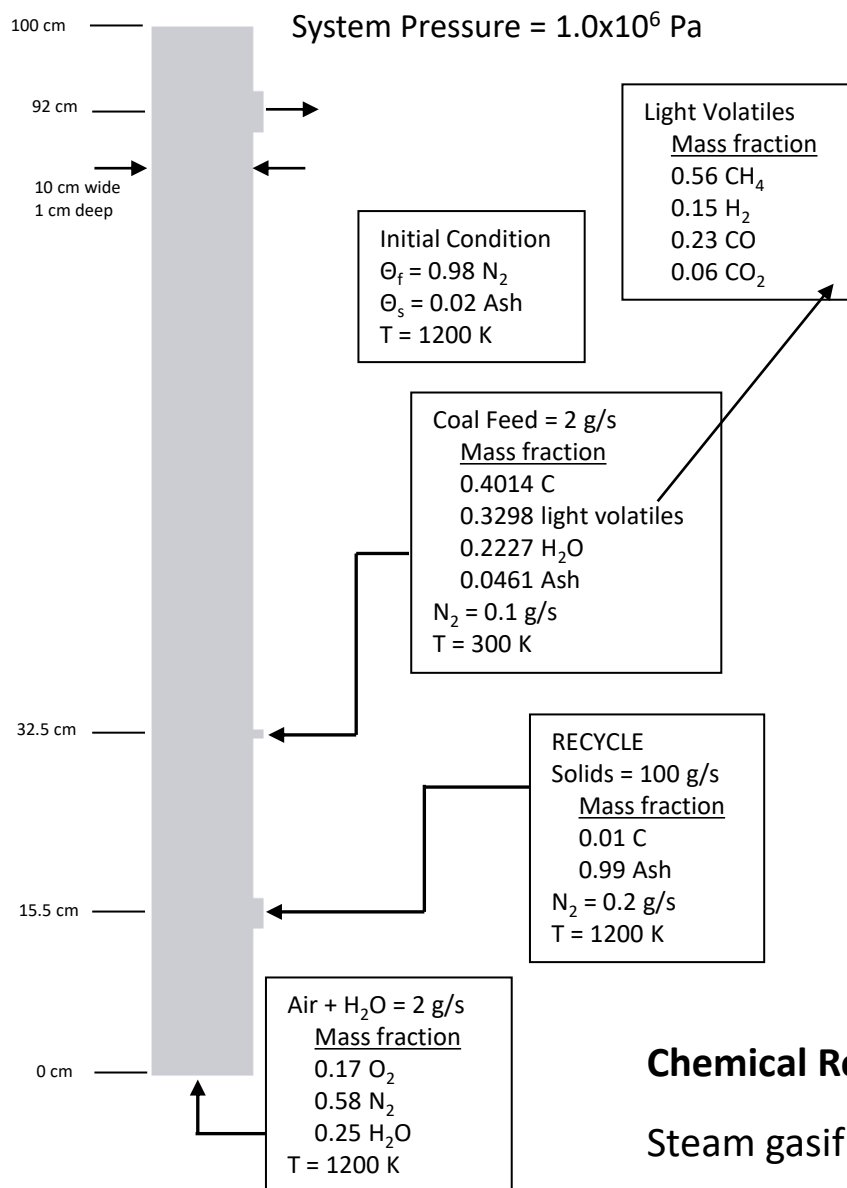


## 2D Gasifier Process Sheet



### Chemical Reactions for Gasifier

Steam gasification:  $C + H_2O \leftrightarrow CO + H_2$

CO<sub>2</sub> gasification:  $C + CO_2 \leftrightarrow 2 CO$

Methanation:  $0.5 C + H_2 \leftrightarrow 0.5 CH_4$

Carbon combustion:  $2 C + O_2 \rightarrow 2 CO$

Water gas-shift:  $CO + H_2O \leftrightarrow CO_2 + H_2$