

- ❑ 0D and 1D models are developed for the simulation of ECR assisted plasma start-up in Steady-state Superconducting Tokamak, SST-1 and its evolution is presented.
- ❑ The simulation results are validated quantitatively with the experimental measurements from SST-1 discharges (Shot# 7496).
- ❑ Reasonably good agreement of plasma current is seen between the simulation and experimental waveforms. Simulated electron temperature and density shows fast build-up as compared to the experimental data.
- ❑ However, the simulation result and the measured densities approach the similar absolute values with time.
- ❑ The results of this study indicate that the plasma evolution is a sensitive to the applied loop voltage, ECW power, impurity concentration, error field and initial pre-fill gas pressure.
- ❑ Controlling the initial hydrogen atom density, suppressing the error field, and reducing the impurity density are all useful for reliable plasma start-up.

