# SUMMARY

- The functional dependence and values of LHCD efficiency $\eta_{CD} = I_{RF}^{N} \langle n_e \rangle \approx 0.4\ 10^{19} \mathrm{Am}^{-2}\mathrm{W}^{-1}$ for density interval $\langle n_e \rangle = (1.5 \div 2.5)\ 10^{19}\ \mathrm{m}^{-3}$ and normalized LHCD $I_{RF}^{N} = I_{RF}R/P_{RF}$ - turned out to be close to those which are obtained in larger tokamaks

- Periphery cooling at the density rise during RF pulse can promote PDI [Lashkul et al., NF, 2015], which results in ion heating observed at periphery and middle radii as well as decreasing of LHCD efficiency $\eta_{CD}$.

- During RF pulse density rise and decrease of the electron temperature are observed. But at threshold power $P_{RF} = P_{RF}^{th} \geq 63$ kW the central electron temperature $T_e(y = 0\ \mathrm{cm})$ increases from 550eV to 700eV with the increase in density.

- Comprehensive GRILL3D, FRTC and ASTRA codes modeling showed that ICC transition happens due to a strong reduction of the electron transport inside the region $r < 3$cm resulting from broadening of the plasma current density profile by suprathermal and runaway electrons generated by LHW. When the magnetic shear $s = (r/q)(dq/dr)$ decreases down to zero or small negative value inside r < 3cm the value of thermal diffusivity $\chi_{eff}$ and diffusion factor $D_e$ decreases, according to the Bohm and and gyro-Bohm models..