

Electron beam injection (EBI) to spherical tokamak (ST) plasmas which are non-inductively produced by electron Bernstein wave (EBW) has been carried out for the first time in LATE. When an electron beam with energy of 100 ~ 600 eV and current up to 800 A is injected, the electron density increases to more than 30 times the plasma cutoff density and is maintained by EBW and EBI. When the density increase is mild (~20 times the plasma cutoff density) at the early stage in EBI, the electron density profile, plasma images taken by a fast CCD camera and soft X-ray signals show the significant core heating around the electron cyclotron resonance layer. On the other hand, significant increment of plasma current is not observed. It may be partly because the feedback control of vertical magnetic field is not performed to maintain the tokamak equilibrium.

