EAST Achieved a New Stationary Small/no ELM H-Mode Regime and Demonstrated a New ELM Pace-Making Technique for Long-pulse

- A new stationary small/no ELM H-mode regime has been obtained in EAST at low collisionality ($\nu_e^* < 1$) with good energy confinement, $H_{98(y,2)} \gtrsim 1.1$, exhibiting a low-$n$ (mostly $n=1$ and sometimes $n=2$) electro-Magnetic Coherent Mode (MCM) at 30-60 kHz in the pedestal region.

- The MCM frequency appears to be located at the low frequency boundary of TAE gap near the local trapped-thermal-electron bounce frequency, and scales linearly with the local Alfvén frequency, thus pointing to the possibility of trapped-electron-driven TAE mode.

- A new ELM pace-making technique by LHCD power modulation up to 120 Hz has been demonstrated in EAST.

- LHCD-induced edge stochastic magnetic field and density-profile modification have been found responsible for the ELM triggering.