

DOI: 10.34854/ICPAF.51.2024.1.1.255

OVERVIEW OF ASIPP STATUS AND RECENT FUSION RESEARCH

Yuntao Song

Institute of Plasma Physics, Chinese Academy of Sciences, Hefei, Anhui, China

Institute of Plasma Physics, Chinese Academy of Sciences (abbreviated as ASIPP) was founded in September 1978 for the peaceful utilization of fusion energy based on the tokamak approach. The main area of research covers high-temperature plasma physics, magnetically confined fusion engineering and relevant important research projects.

At ASIPP, our fusion research strategy is a roadmap from now days machine to fusion power plant. Currently, we are operating EAST tokamak, to validate the steady state operation scenario. Experimental Advanced Superconducting Tokamak —— EAST is the first fully superconducting Tokamak device in the world, dedicating on steady state plasma operation and advanced technology validation. Some recent EAST highlights:

- 1) Long pulse plasma discharge/experiment with high confinement mode (403s),
- 2) 1056 seconds long pulse high parameter plasma operation with super I-mode scenario,
- 3) Joint experiments to support ITER baseline operation scenario.

Beyond EAST, ASIPP is constructing a next-step infrastructure: Comprehensive Research Facility for Fusion Technology (CRAFT), aiming to develop a series of testing facilities on key technologies in fusion engineering. It would be an engineering testbed for global fusion community. The experience on EAST and CRAFT will help us design our next tokamak device BEST, which means Burning plasma experiment superconducting tokamak. The construction of BEST was started in June 2023. In the meantime, ASIPP is contributing to ITER construction, by procurement packages through Chinese ITER domestic agency and cash contract. All the efforts on EAST, CRAFT, BEST, ITER will help us in the planning of CFETR, which means Chinese Fusion Engineering Testing Reactor.