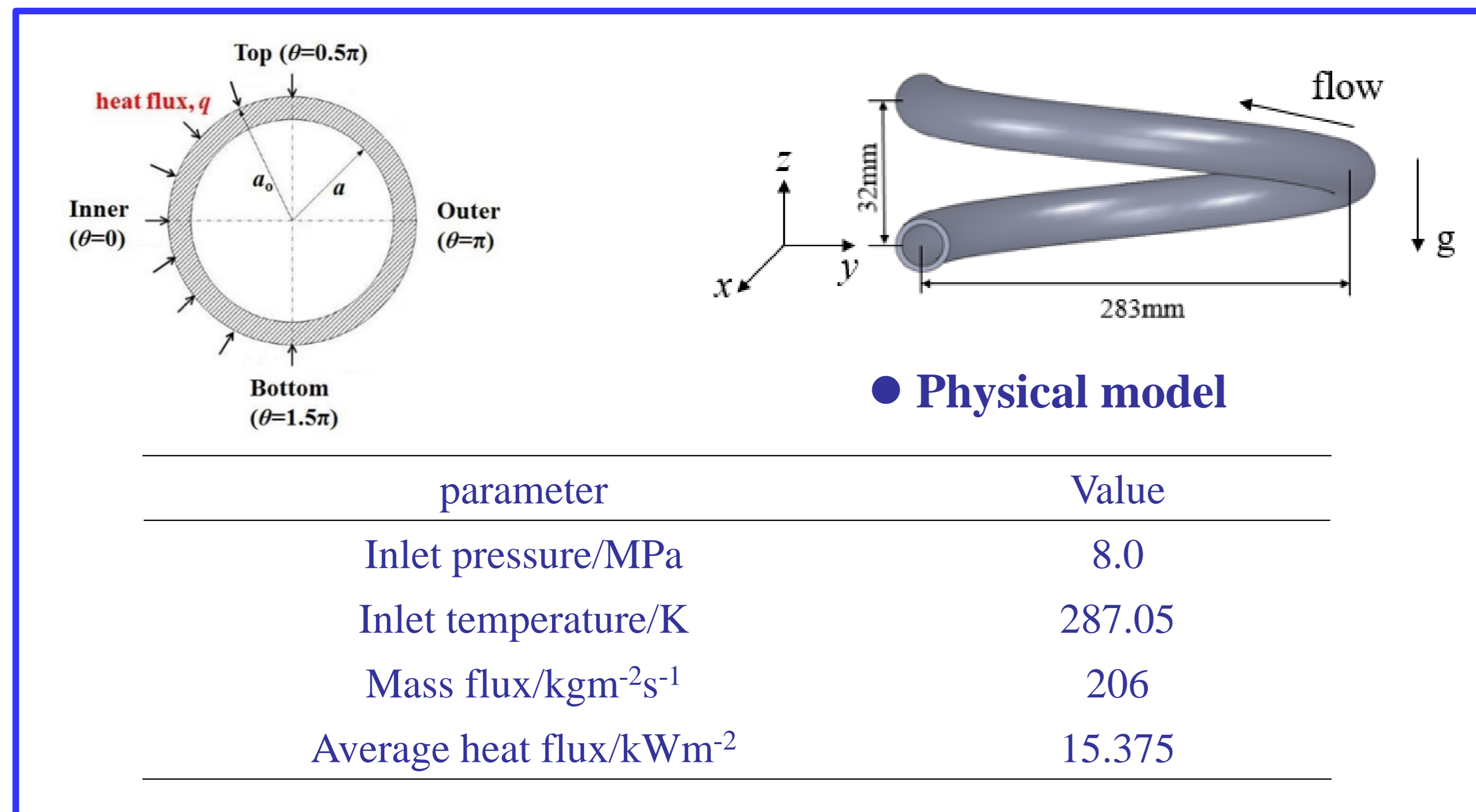


Introduction

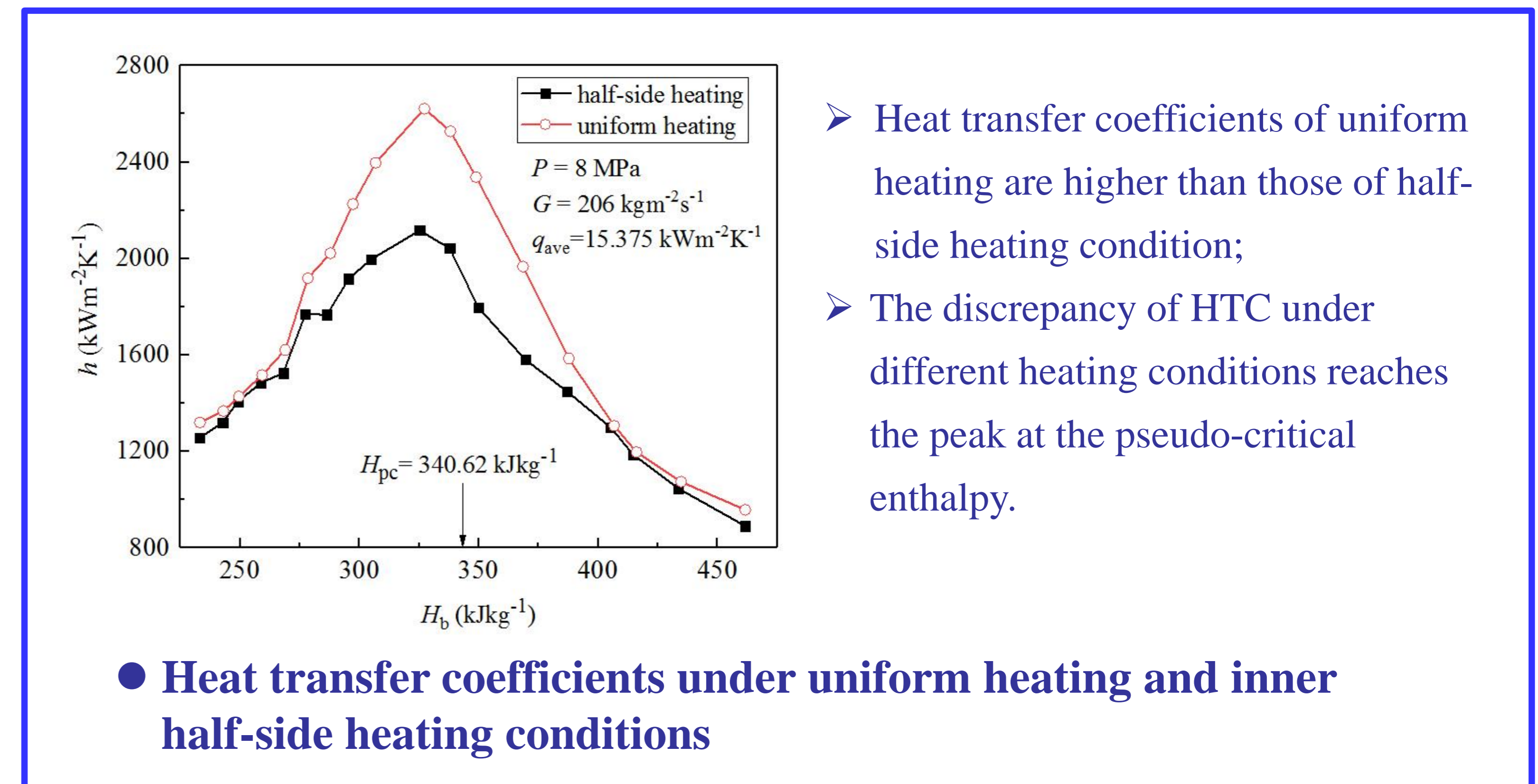
- Supercritical CO₂ is a promising working medium in the new type of power cycles and refrigeration systems;
- This paper presents our work on the flow and heat transfer of supercritical CO₂, and a new type of ultra-compact plate heat exchanger (UCPHE) which is used as the regenerator in the supercritical CO₂ Brayton Cycle.

Study of flow and heat transfer of supercritical CO₂ in the helically-coiled tube under half-side heating

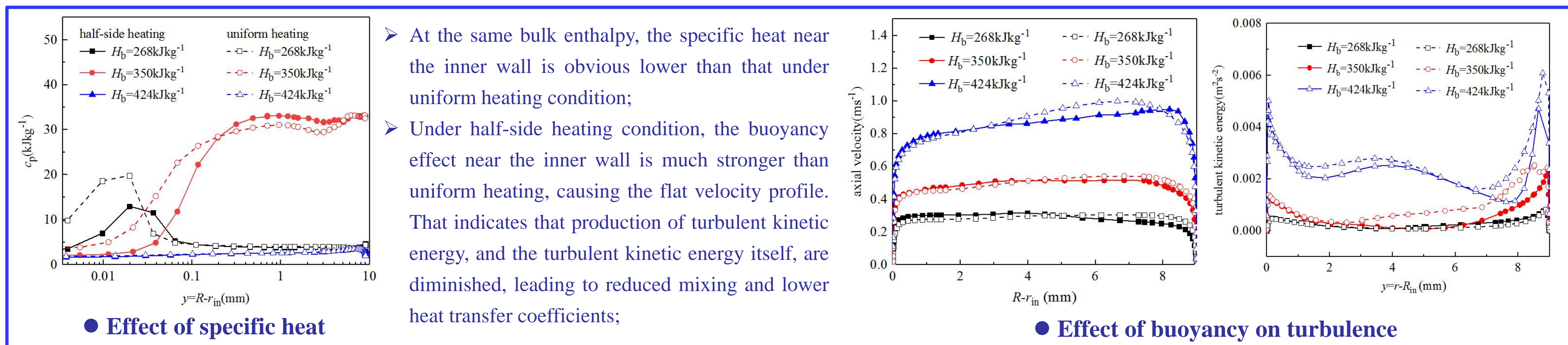
Numerical model and parameters



Heat transfer performances under half-side heating condition

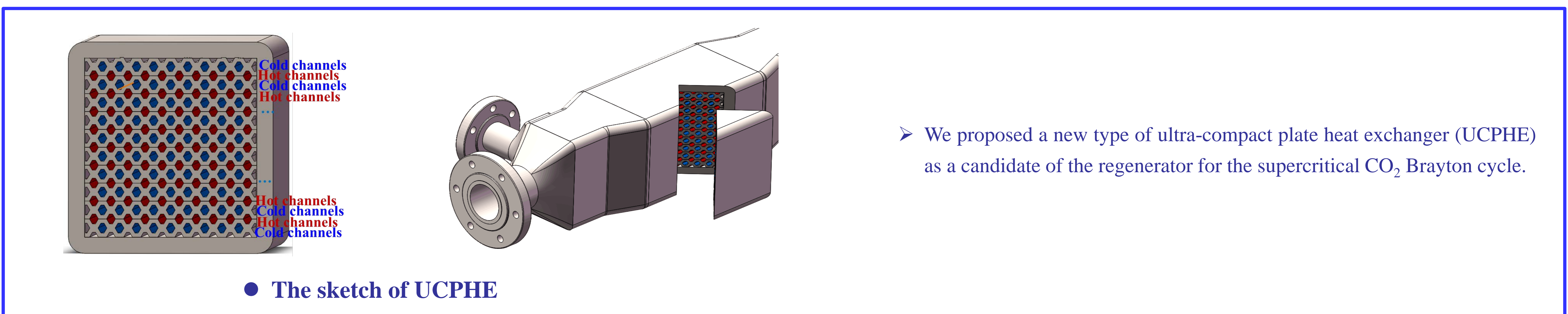


Mechanism on heat transfer of supercritical CO₂ in the helically-coiled tube under half-side heating



The evaluation of a new type of ultra-compact plate heat exchanger (UCPHE) for the S-CO₂ Brayton cycle

The structure of UCPHE



The numerical analysis on the thermal-hydraulic performances of UCPHE

