



Department of Nuclear Science and Engineering

1. Description

The Nuclear Engineering Department at Shanghai Jiao Tong University was founded in 1958 and is one of the most well-known nuclear engineering disciplines in China. In 2006, the Department of Nuclear Science and Engineering (DNSE) extended the range of subjects and four educational and research platforms i.e. Reactor Engineering, Nuclear Material & Fuel, Radiation Protection and Nuclear Technology Application, were built. Students in DNSE have numerous opportunities to gain specialized education and training in nuclear power plant systems, nuclear thermal-hydraulics, reactor physics, nuclear safety, radiation protection, nuclear power system control and operation and nuclear material. Through these educational activities, we prepare our students make contributions to the development of nuclear power systems for the benefit of society and the environment. There are currently 6 professors, 9 associate professors and 8 assistant professors working in the institute.

2. Key Research Fields

- Nuclear Thermal Hydraulics
- Nuclear Systems Design and Security
- Radiation Detection
- Nuclear Fuel Design and Cycle
- Nuclear Material



3. Labs, Centers and Groups

- Advanced nuclear system thermal hydraulics laboratory
- High pressure & temperature fluid H-T laboratory
- Nuclear chemical engineering laboratory
- Nuclear power plant simulation laboratory
- Pump and valve in nuclear system laboratory
- Two phase flow laboratory
- Joint lab for nuclear thermal-hydraulics
- Joint lab for corrosion of nuclear power materials
- Joint lab for security verification technology

4. Instrumentation & Facilities

- Reactor vessel passive external cooling (REPEC) facilities
- Supercritical water (SWAMUP) and supercritical Freon (SMOTH) test loops
- Rod bundle flow and heat transfer test facility
- Mechanism test apparatus for melt coolant interaction (METRIC)
- Water film test facility (WAFT)
- Hydrogen mitigation test facility (HYMIT)
- Corrosion of nuclear power materials facility
- Active wind tunnel for atmospheric dispersion in nuclear accident
- Two-phase flow erosion-corrosion facility (TPEC)
- Air-water hydraulic loop
- Inductively coupled plasma-atomic emission spectrometer (ICP-AES)
- Total organic carbon analyzer (TOC)
- Laser doppler vibrometry (LDV)
- Particle image velocimetry (PIV)

5. Website

<http://nsse.sjtu.edu.cn/>

6. Director

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