

## Main aims of the department:

Education and research in the field of fluid mechanics, thermo mechanics and power systems.

## Areas of interest:

- ✓ Steam turbines and turbo compressors
- ✓ Gas turbines
- ✓ Combined gas and steam cycle
- ✓ Nuclear plants and their safety
- ✓ Steam and hydrothermal boilers
- ✓ Off-heat boilers
- ✓ Heat exchangers
- ✓ Industrial furnaces
- ✓ Alternative energy sources
- ✓ Power generation from waste
- ✓ Heat plants and piping systems

## The department's offers:

- ✓ Heat, flow and design proposals
- ✓ Studies and consultation in the field of power system engineering and equipment
- ✓ Numerical simulation of flows in FLUENT
- ✓ Experimental equipment
- ✓ Single-stage air turbine
- ✓ Wind tunnel for research into tube bundle vibration
- ✓ Wind tunnel for research into vibration of vaned mesh
- ✓ Aerodynamic diffuser tunnel
- ✓ Aerodynamic calibration tunnel
- ✓ Rig for research into the behaviour of vortex tubes

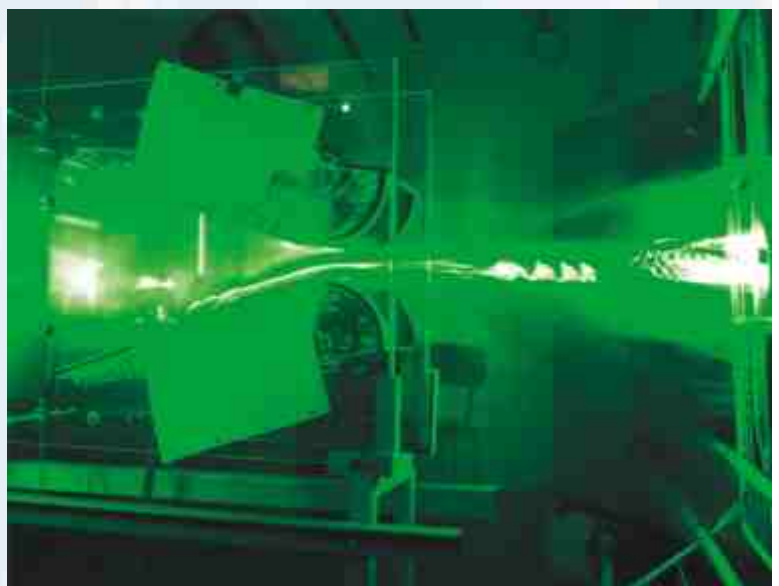
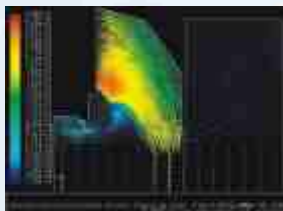
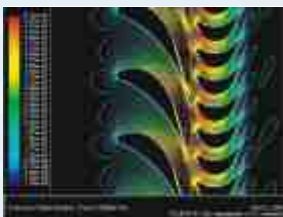
## Main directions of research

Numerical and experimental simulation of flows in the flow sections of turbines, directed towards stepped, control valves, entrance and exit parts of turbines and seals with a view to reducing losses. Research into the flow-induced vibrations of fluid coupled elastic body systems with applications to tube bundles, blade cascades in turbines, valves.

## Projects and grants

Work for the Czech Grants Agency, Fund for Development of Institutes of Higher Education, European Social Fund and the Ministry of Trade and Industry.

PTSE Centre (Progressive Technology and Systems for Power Engineering).



## References:

- ŠKODA POWER, a.s.
- ŠKODA AUTO, a.s.
- ŠKODA JS, a.s.
- AHT Energetika, s.r.o.
- ZVVZ, a.s.
- ČEZ, a.s.