

1st European Seminar on Supercritical CO₂ (sCO₂) Power Systems



28.-30. September 2016 - Vienna - Austria



TECHNISCHE
UNIVERSITÄT
DRESDEN



University of Stuttgart
Germany



UNIVERSITÄT
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ESSEN

Open-Minded

Wednesday - 28.th September 2016

09:00 am - 05:00 pm

WORKSHOP

sCO₂ Turbines Fundamentals – Cycles, Turbine Design & Analysis, Blading

Description:

The goal of this 1-day workshop is to provide engineers with a better understanding of basic theory of axial and radial sCO₂ turbines design and their operation in Brayton thermodynamic cycles.

This course covers essential concepts from reminders on gas dynamics to prediction of machine performance at design and off-design conditions while diving into the overall cycle that it will be part of.

Different configurations of cycles (recuperated, recompression, etc.) will be presented. It will also discuss where we lose efficiency in our turbines which can then help us make wise design decisions. Moreover, turbine blade profiling will also be discussed from elementary boundary layer definition to interpreting loading diagrams as well as performing and understanding 2D and 3D aerodynamic calculations.

Additionally, stresses, creep, high-cycle and low-cycle fatigue on blade will be presented and start-up and shut-down concepts and restrictions will be highlighted.

Workshop Target Audience:

Mechanical engineers and engineering managers looking to learn or refresh their knowledge on what sCO₂ turbines are and how they work.

Course Highlights and Major Points:

Gas Dynamics, Brayton Cycles, Supercritical Fluids, Carbon Dioxide, Layouts & Factors Affecting Turbine Operation, Definition and Parameters of Turbine Stage, Multistage Turbines, Losses in Turbines, Fundamental Equations used in Preliminary Design and Performance Calculations of Turbines, Off-Design Performance, Blade Profiling.

Location

TU Wien
Getreidemarkt 9
Room: SEM BA 08A
A-1060 Vienna

The costs

for attendance are 300 € and the training will be held if at least 10 registrations are returned.

The Workshop

will be organized by SoftInWay Inc.

<http://www.softinway.com>

For your registration

please send an email with the subject "sCO₂ Workshop" to

maria.umundum@tuwien.ac.at