UNIVERSITÀ DEGLI STUDI DI CAGLIARI

HR EXCELLENCE IN RESEARCH

Dipartimento di Ingegneria elettrica ed elettronica
Direttore: Prof. Luigi Atzori

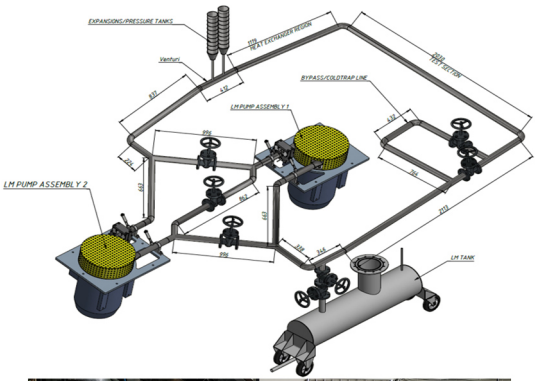
June 15-19 h: 9-13 – Room B "Biennio"

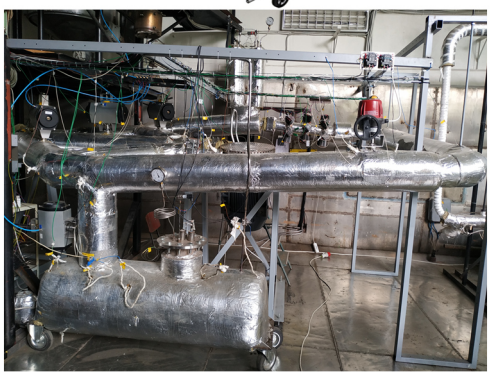
Lecture + Live Hands-On Remote Lab Experiment

Magnetohydrodynamics (MHD) in Liquid-Metal Systems experiments and measurements

What you will see & do

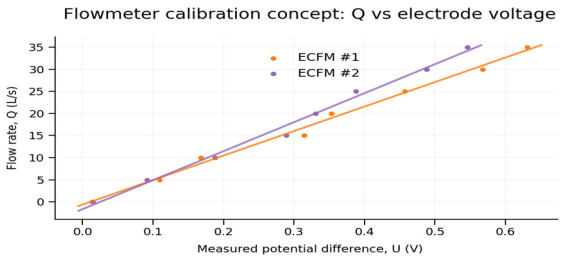
- MHD technology in practice: electromagnetic pumps, flowmeters, liquid metal loop operation
- Applications: nuclear & fusion technology loops, high-temperature process engineering, R&D
- LIVE remote experiment: connect to the DN60 two-pump loop in Salaspils (Latvia)
- Build your own experiment program, acquire data, fit pump Δp–Q curves and calibrate flowmeters
- Provide analysis of the curves





Format (approx. 2 hours)

- 5 days, 20 hour course: main operation principles, instrumentation, experiment planning, experiment, data analysis
- Theoretical and application background 4h
- Liquid metal loop and component design and operation 4h
- Experiment planning, data acquisition possibilities – 4h
- Remote lab: series vs parallel pump operation, variable flow rate runs



- Experiment result management, calibration coefficients, uncertainty & best practice, conclusions, discussion – 4 h

Recommended background

Basic fluid, electrotechnics, electronics, mechanics knowledge; ability to work with spreadsheets (Excel) for plots & linear fits

Speaker: Dr. Kalvis Kravalis (University of Latvia, Institute of Physics)

Topic: MHD pumps & flow measurements in liquid metals; remote access to a real test loop. Host at UniCa (DIEE): Prof. Augusto Montisci

Remote experiment is operated by the University of Latvia (Salaspils). No on-site liquid-metal handling by participants.

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DIPARTIMENTO DI INGEGNERIA ELETTRICA ED ELETTRONICA
DIPARTIMENTO DI ECCELLENZA MUR 2023-2027
DIEE

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