



**UNIVERSITY OF ORADEA**  
**FACULTY OF ENERGY ENGINEERING AND**  
**INDUSTRIAL MANAGEMENT**  
**ENERGY ENGINEERING DEPARTMENT**

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# **FACULTY OF ENERGY ENGINEERING AND INDUSTRIAL MANAGEMENT**

## **ENERGY ENGINEERING DEPARTMENT**

# **RESEARCH CENTRE FOR ENERGY PROCESSES MANAGEMENT**

The Research Centre for Energy Processes Management – RCEPM – coordinates, manages and harnesses the fundamental and applied research activities in the following directions:

- The quality and reliability of the energy systems;
- Efficiency of the energy processes;
- The energy processes impact on the environment.

The EPM forms and improves the human resources for an adequate management of the energy processes, within the MSc and doctoral program.

The harness of the scientific researches results are made through: publication of scientific articles and treaties, equipping the laboratories, students self-training, obtaining research contracts.

### **Targets:**

- Elaborating and ongoing the research programs in domain of energy;
- Promoting and ongoing the postgraduate specialization programs;
- Improving the collaborations with the members of the research organizations, education, production at home and abroad;
- Publication of scientific articles in professional journals at home and abroad.

## FACULTY OF ENERGY ENGINEERING AND INDUSTRIAL MANAGEMENT

### Research Centre

**Denomination: Energy Processes Management**

**Areas of expertise:**

- the quality and reliability of the energy systems;
- the efficiency of the energy processes;
- the impact of the energy processes on the environment.

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### A. Equipment

A1. Denomination: **Instruments to detect the technical stage of the insulator support within the components of separators of 110 kV, through ultrasonic investigation.** Kit for identification of electric insulation fissure by using liquid penetrants.

A2. Characteristics, performances: the electric insulation study at different voltage level.

A3. Applications that can be performed: identification of the technical stage of the insulations

A4. Source of financing: research contract 3103

A5. Estimated value: 77000

A6. Year of acquisition: 2008



A1. Denomination: **Equipment for monitoring and diagnosing by vibration analyse**

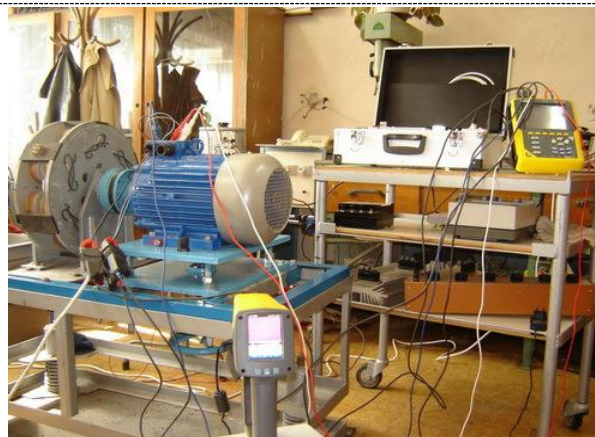
A2. Characteristics, performances: on-line monitoring the vibration level on minimum two channels, motors with maximum 5 kW power at low voltage

A3. Applications that can be performed: diagnosing and analysing the vibrations. Determining the characteristics of the electrical rotating machineries and diagnose by analysing the electrical quantities of the electric machines. Monitoring the temperature of the electrical machines.

A4. Source of financing: contract CNCSIS 812

A5. Estimated value: 44000 lei

A6. Year of acquisition: 2007



A1. Label: **Power Quality Analyzer-Chauvin Arnoux C.A. 8334B**

A2. Characteristics, performances: oscilloscope function, vectorscope function, THD for three input currents, sampling frequency 12,8 kHz per channel, measurement interval choice 1/5/20s, 1/2/5/10/15 min. 1h, 2h; Recording period of 165 days with 10 minutes measurement interval (with 4 MB); 40...69 Hz frequency; Voltage inputs 830V [phase – phase]; 480V [phase - null]; Input impedance of 340 kΩ between phase and null.

A3. Possible applications: harmonic influence analyses, flicker, transient events.

A4. Grant source: MEC

A5. Estimated value: 10500 lei

A6. Acquisition year: 2010



- A1. Denomination: **Thermal imaging camera - Fluke Ti20**  
 A2. Characteristics, performances: images visualisation in real time  
 A3. Applications that can be performed: temperature measuring  
 A4. Source of financing: research contract RC  
 A5. Estimated values: 12845 lei  
 A6. Year of acquisition : 2007



- A1. **Ultrasonic Flowmeter for Gas G601**  
 A2. Characteristics, performances: use multiple probes, flow direction detection, multiple measurement functions, acquisition opportunities of measurements, many setting possibilities.  
 A3. Applications that can be performed: measurement of gas flow  
 A4. Source of funding: Contract research 3049  
 A5. Estimated value: 39000 lei  
 A6. Year of acquisition: 2008



- A1. **Ultrasonic Flowmeter for Liquids F601**  
 A2. Characteristics, performances: use multiple probes, flow direction detection, multiple measurement functions, acquisition opportunities of measurements, many setting possibilities.  
 A3. Applications that can be performed: measurement of fluid flow  
 A4. Source of funding: Contract research  
 A5. Estimated value: 39000 lei  
 A6. Year of acquisition: 2008



- A1. **Power Quality Analyzer**  
 A2. Characteristics, performances: single phase-three phase +4 wire system (P-N)- max. nominal voltage 115V, 230V, 480V; Three phase+3wire system (P-P), max. nominal voltage 200V, 400V, 830V.  
 A3. Possible applications: power quality measurement  
 A4. Grant source: contract no.3049  
 A5. Estimated value: 16000,  
 A6. Acquisition year: 2010



- A1. **Electromagnetic field measurement device, Chauvin Arnoux - C.A 42**  
 A2. Characteristics, performances: oscilloscope function, FFT frequency analyzer, automatic measurement recording, electric and magnetic field probing, - Standardized analogical output (3 channels): scale 1V- 0 to 30 kH.  
 A3. Possible applications: low frequency electric and magnetic field measurement, long term field evolution surveillance.  
 A4. Grant source: research contract  
 A5. Estimated value: 2990 lei  
 A6. Acquisition year: 2010





## C. Soft

C1. Name: EWS (ErdWaerme Simulator)

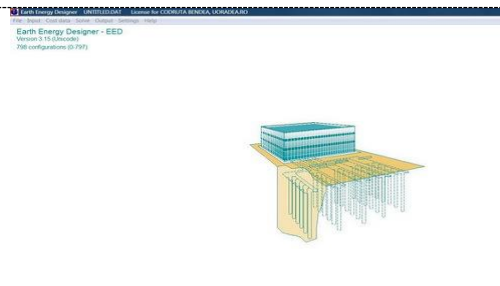
C2. Performed applications: Simulation of heat transfer in a vertical ground-coupled heat exchanger

C3. Maximum number of users: 3

C4. Financing source: research contract

C5. Estimated value: -

C6. Purchased: 2008



C1. Name: EED3 (Earth Energy Designer)

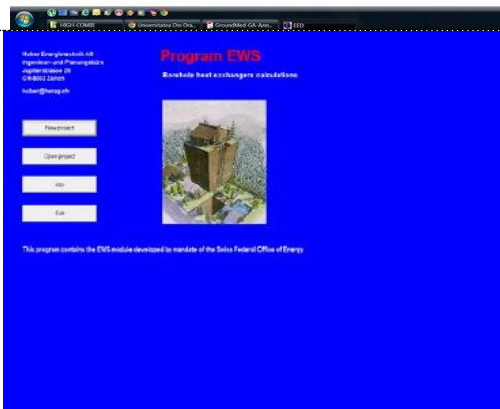
C2. Performed applications: Simulation of heat transfer in a vertical ground-coupled heat exchanger

C3. Maximum number of users: 3

C4. Financing source: research contract

C5. Estimated value: 800\$

C6. Purchased: 2009



C1. Name: HEAT

C2. Performed applications: simulations of bi-dimensional and tri-dimensional conduction through different surfaces: walls, windows, heated stairs, heated floor, etc.)

C3. Maximum number of users: 3

C4. Financing source: research contract

C5. Estimated value: 1200\$

C6. Purchased: 2009

