

Contacts and overall information about institution

Name of Organisation:	Ivano-Frankivsk National Technical University of Oil and Gas
City	Ivano-Frankivsk
Street	Karpatska st., 15
Status of Organisation:	Higher education establishmen (University, etc.)
Name of Research Unit:	Power Supply and Equipment Department
S & T Activity Fields:	
FP7 Priorities	Energy
Frascati classification	2.2 Electrical engineering, electronic engineering, information engineering
Description of activities	<p>The main index of economic efficiency is power intensity of gross domestic product. Nowadays in Ukraine specific power intensity of gross domestic product is higher than in developed countries 9 – 10 times more. For example, Ukraine expends 4,7 kilograms equivalent fuel for 1\$ of gross domestic product (for comparison, in Japan this index is equivalent 370 grams, in USA – 600 grams). This situation limits competitiveness of national products. That's why it is necessary to work out up-to-day methods and means for monitoring of energy saving potential of enterprises. Total potential of energy saving thanks to technical and structural factors should account indices which have an influence upon energy consumption (down level of equipment, a huge sum of outdated and worn-out equipment ect.) and include total economic effect from energy saving.</p> <p>Solving this task is possible on the assumption of complex approach to the analysis and optimization of electric drive pump unit operation with combine of efforts of different scientists (electrical engineers, mechanical engineers, experts of hydraulics ect.) on the basis of common gnoseological principles of unbalanced processes thermodynamics. As the result it will be possible to create theoretical fundamentals of energy machines functioning and working out methods and software tools of energy saving technologies. Computer-oriented models of pump unit on the basis of analysis of energy flows give opportunities to simplify process of optimization of quasistable and transient processes using computer programme 20-sim 3.6 07 Professional. As final result it is to find condition of maximum efficiency of energy units.</p> <p>Weighty energy saving gives an opportunity to refuse to build new power plants and decrease carbon dioxide emission</p>
Website:	http://science.nung.edu.ua
Overall Description of Institute (Research Unit)	<p>Consumers are willing to put the cost of the consumed natural gas in relation to the obtained energy, not only the volume. Existing industrial systems for natural gas heating value determination are based either on direct (calorimetric) method or chromatographic measurements. These methods and their embodiments are quite expensive, off-line and suffer from many obstacles in their industry application. Main European gas companies during last 5 years focused their research on the problem of development of the efficient and low-cost systems which could be easier applied and will enable on-line measurements</p>

of the natural gas heating value.

Head of Research Unit:

Name:

Position Title:

Work Phone:

Other Phone:

Fax:

Email:

Contact Person of Research Unit :

Name:

Work Phone:

Other Phone:

Fax:

Email:

Resources and international Activities

Number of Researchers in Unit:

Research Facilities:

Analysis of present-day reliability and efficiency of electric equipment, energy quality indices and energy transformation efficiency.
Working out of methods and means for monitoring of energy saving potential of power and technological equipment.
Creation of uniform mathematical models of energy machines on the basis of unbalanced processes thermodynamics for analysis of their functioning and computer-oriented models of equipment.
To devise a methods of estimation of adjustable drive implantation economic efficiency (using thyristor voltage and current regulators), forming electronic database of high-efficient equipment of native and foreign producers (Ukrainian analogue of MotorMaster+, "EuroDEEM").
Developing a system of monitoring of energy saving potential for enterprises of Company "Ukrtransgas" and special software tools.

Number of International Projects:

Name and Number of major Publications:

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Participation in 7th Framework Programme:

Food, Agriculture, Fisheries and Biotechnology:

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Energy:

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Environment (Including Climate Change):

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Health:

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Information and Communication Technologies:

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Nano Sciences, Nano Technologies, Materials and New Production Technologies:

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Security

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Socio-economic Sciences and the Humanities

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Space

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Transport (Including Aeronautics)

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Capacities

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Other international project experience:

Project TEMPUS UNINET 159239-TEMPUS-1-2009-1-SE-TEMPUS-JPGR "Innovation cross-university network for development of partnership with enterprises" (2010-2013). Project 159327-TEMPUS-1-AT-TEMPUS-SMGR "E- internalistion for collaborative learning" (2010-2013)
