

ABSTRACTS “INNOVATIVE TECHNOLOGY” 2 / 2007

EFFICIENCY DETERMINATION OF LOCAL HEATING PLANTS, USING DIRECT AND INDIRECT METHODS

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This paper present the calculation methods of the design and operating efficiency of local heating plants (LHP). This intervention by the author was necessary, because, in the environment, affirmation was made by “experts” such as, these local heating plants, operating with the condensation of the vapours from flue gases, would achieve efficiencies of 107- 109%, opinions which contradict the fundamental thermodynamic laws. Actually, some elements related to this issue were related briefly in [1]. Besides heating, these plants provides to the cohabitants domestic hot water. These category includes the mural plants (installed inside every appartment), staircase plants and building plants; the plants which provides heat and domestic hot water to a large number of buildings are not considered, in order to eliminate the inevitable energy and hot water losses with the transport system between the provider and the costumer. Actually this is the reason why these plants are built, because the transport networks, wrong mounted and with a large amount of heat and hot water losses made that the central heating system be ignored by the costumers. More, the local heat supply provides convenience and rapid conformation to the thermal environment conditions; because of its great inertia, the central system controls very hard the operation transient regimes – start-up shut down – with negative consequences on the costs supported by the costumers. The author is convinced that, central generation of heat and hot water, necessary to the costumers , is more cheaper then the local generation of the same utilities (not considering the transport systems and distribution). This is the start point of the urban and industrial central heating idea and the construction of central heating power plants. If the installed power of the system is greater, the specific consumption and costs are smaller.

PRODUCTION OF COLD PRESSED PPO AND ITS USE IN COMBUSTION ENGINES

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Paper presents some aspects concerning the production of cold pressed PPO and its use in combustion engines. It is important to know the

difference PPO vs. Bio Diesel and how to use the pure plant oil in combustion engines, some aspects concerning the emissions, about the PPO production. Conclusions present further actions within the project.

BASICS OF COMMERCIAL AVAILABLE CORRELATION MEASUREMENT SYSTEMS

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In European Industrial production, mechanical testing is becoming more and more important. In order to make production economically profitable, warranty complaints have to be avoided by using material in the most efficient way. In the quest for nonintrusive high accuracy measurements, Electronic Speckle Pattern Interferometry (ESPI) and Digital Image Correlation (DIC) have been commercially developed in practical equipment. Both systems provide considerable advantages towards conventional experiments. The Digital Image correlation is an optical–numerical measurement technique, based on the comparison between pictures taken during the deformation of the object.

CAST CLEANING ROBOT FEELS ITS WAY TO LOWER MANUFACTURING COSTS AND HIGHER SURFACE QUALITY

ABB Automation Technologies AB Robotics & Manufacturing, SWEDEN

*Improved automated grinding and deburring of castings is now possible with the launch of a new robot based system called Force Control Machining. The new dedicated robot based system **Force Control Machining** from ABB removes the bottleneck and greatly increases process efficiency, saving time, raising overall consistency and boosting product quality.*

NUMERICAL SIMULATION OF INTERACTION BETWEEN FLUID AND HYDRODYNAMIC PROFILE BLADES OF MINI – HYDRO - ELECTRIC POWER PLANT ROTOR, FOR KYNETIC ENERGY WATER CONVERSION

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Mini – hydro - electric power plants allow an efficient conversion of rivers kinetic energy into mechanical and electric energy, without barrages construction.

Efficiency is insured by the optimal position of blades which have a hydrodynamic profile. Now, the pilot station of mini – hydro - electric power plant is its execution stage and it will be installed on Prut river, near Stoienesti village, Cantemir department, Republic of Moldavia.

CONSTRUCTIVE SOLUTIONS FOR A VOLUMICAL PIVOTING PUMP

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The work is introducing two constructive solutions for a two-profiled / figured rotors pivoting machinery used for fluids handling; the main geometrical sizes and the working parameters of the machine are set forth in order to use it as pivoting displacement pump.

EXPERIMENTAL RESEARCH ON MEASURING CUTTING TEMPERATURE AT DEEP HOLES MACHINING

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For Romanian drills there are few studies and researches regarding the cutting temperature at deep holes machining. In this paperwork the measuring stand, obtained results and their interpretation will be presented. All these aspects are interesting because the cutting temperature influences directly the drill's wear, its durability and the shape of the detached chips.

STRUCTURED SURFACES. A NEW PERSPECTIVE FOR TRIBOLOGICAL BEHAVIOR OF LUBRICATION CONTACTS

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Structured surfaces means the achievement of a rate, or controlled micro-geometry for one or both friction surfaces. These surface profiles are used to guarantee lubrication functions of transport, hoarding and spread of the oil and to collect the wear products for maintaining the uprightness of the friction couple surfaces. The first textured surfaces where obtained by plateau-honing. Effectively structured or textured surfaces are done by processing dimples and channels forms on the active surfaces of the friction couples. In these micro-geometry forms the lubrication oil is guarded in starvation times, during the transition periods.

INDUSTRY OR SERVICES ? INDUSTRY AND SERVICES' INTEGRATION IN GLOBAL KNOWLEDGE ECONOMY

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The assertion of Global Knowledge Economy (G.K.E.) has determined the changes in the structure of the developed countries' economy, in the nature of the inside industries' activities, as well as in the relationship between these industries. The most notable of them are the increase of the importance of services together with the growth of complexity and especially of production and distribution systems' integration.

ECOLOGICAL MANAGEMENT IMPLICATIONS CONCERNING THE PRODUCT LIFE CYCLE

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The paper presents an interdisciplinary study concerning ecologic management for product life cycle, in order to integrate durable concepts and actual demands about projection - development - implementation. Worldwide, it is established the long life development problem, the achievement actions for quality products and services are in correlation with promotion of reliable and clean environment preservation to next generations, using technological continuous innovations, research and development actions. Ecologic products activities is based on the development of economic factors and also, of environmental and social factors, which must be company standards in decisions process.

MADICO LAUNCHES INDUSTRY'S MOST HEAT RESISTANT LABEL

*Madico Graphic Films Limited, Maidenhead Berkshire,
UNITED KINGDOM*

Madico Graphic Films is a leading solutions supplier for durable label applications. It has expanded its wide range of heat resistant labels with the launch of a revolutionary heatproof tag that offers the highest level of heat-resistance and durability available on the marketplace. Enabling product identification in extreme temperatures up to 1080°C, the new HP-L80 thermal transfer printable barcode tag is set to offer unique benefits over current methods of applying barcoded labels and plates in hot metal applications.

**ELECTROCHEMICAL COMPOSITE
MATERIALS
PART I**

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The most known obtaining methods of composite materials are: fount, powder metallurgy, vacuum vaporization, internal oxidising, vacuum pulverization, plasma pulverization, chemical deposition through vaporization. Less used is obtaining of this materials through the electrodeposition process. The materials obtained through this technique have become known as "electrocomposites". Despite the advantages, electrochemical method is not that much used like the others methods. Although it has been realised an abundant research of the process of electrochemical composite deposition, the process mechanism is partially understood. Thanks to all advantages of the process of composite materials electrochemical obtainig, the study of this technique has lately won more attention.