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“OVIDIUS” UNIVERSITY OF CONSTANTA

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SECTION I

MECHANICAL ENGINEERING STUDENTS SESION

1

Considerații privind instalațiile portuare pentru transport continuu
Considerations about harbor installation for continuously transport

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Abstract: The continuous transport machines with traction organs are using flexible load elements (cable, chains or tapes) for the loads movement.

According to the nature of the loads elements, these machines can be grouped in:

- cable conveyor
- chain conveyor
- tapes conveyor
- elevator

Keywords: continuous transport machines, cable conveyor, chain conveyor, tapes conveyor.

2

Optimizarea activității de transport rutier al pământului rezultat din lucrările de săpare
executate pe platformele portuare

Optimizing road transport activity of resulted ground from digging works
executed on port platforms

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Abstract The investments within construction sites on harbor platforms caused some complex issues regarding the engineering and the management of technological resources in terms of efficiency imposed by the market economy. Solving these problems requires economic analysis of costs development, technological equipment and transport vehicle.

The choice of the technological process and the determination of the machines optimal systems used at an harbor objective, are made upon the results of thorough analysis, following technical, technological and economical criteria, which represent the subject of this paper.

Keywords: harbor platform, port administrative space, transport, load capacity, physical unit cost, machines optimal systems.

3

Linie tehnologică mecanizată pentru sudarea secțiilor navale
Automatic technological line for welding ships blocks

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Abstract: This paper work is ment to describe the automatic tehnological line used in a shipyard in order to obtain compact blocks that will be used for ship construction in shipyard's dock. This line follows steel plate's way from the stockyard until the final product,the compact block,is finished. The paper work offers theoretically informations about the actions the plate is also subject to, like blasting,cutting or welding, and some of the equipments used during this processes: a crane used to move the steel plates in the stockyard, the automatic blasting machine used for primary surface preparation, a cutting machine used to give the plate the required dimensions, an automatic welding machine used to put the plates together in order to obtain the block.

Keywords: sablare, debitare, rosturi de sudare, sudare, control, remediere

4

Considerații privind utilajele pentru construirea porturilor. Bulldozere
Considerations on equipment for building ports. Bulldozers

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Abstract Choosing optimal working equipment such as bulldozers in view of completing works. They can serve in particular to build ports.

The machines are chosen based on certain characteristics and the types of bulldozers depends on the operations that must be made. These machines can be angledozzer, varidozer, simple bulldozer or other. The characteristics on which choose machines have a major effect on the economy of work and working time.

Without this machine would not be possible any construction or works preparation for construction.

Keywords: transport, equipment, varidozer, ports, bulldozer.

5

**Propuneri de retehnologizare a infrastructurii tehnice dintr-un terminal de containere în
contextul eficientizării energetice și reducerii emisiilor poluante**
**Retrofitting solutions for the technical infrastructure of a container terminal with the
purpose of reducing energy consumption and pollutant emissions**

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Abstract The present paper tackles the impact generated by port container operations upon the energy demand and the quality of the environment. Traditionally, the energy efficiency has not represented a priority for the port industry due to the low share of energy costs in the total operating expenses. However, recent years have brought a wave of change and the overall perception evolved as a consequence of innumerable factors: a steady increase of energy costs, the adoption of worldwide strict regulations concerning environmental protection and GHG emissions, the massive awareness of the civil society on sustainable development of industrial activities. This study evaluates the implementation of eco-efficient port equipment in some European ports and confirms that the technological development is more than able to facilitate the transition from an economic model based on fossil fuels to one that manages to minimize the consumption and to rely on "clean" fuels, such as LNG.

Keywords: environmental issues, eco-efficient port equipment, retrofitting

6

**Considerații privind proiectarea mecanismului de rotire al unei instalații de ridicat
montată pe o platformă marină fixă**
**Considerations about the projection of a crane slewing mechanism installed on a fixed
offshore platform**

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Abstract The continuous development of the oil and gas industry, implicate more studies on this subject. The oil and gas needs of the world are going up because there are a lot of need of fuel for the modern society. As the oil or gas deposits are getting harder and harder to find and explore, the offshore platforms for exploration and production are an important necessity and their development need to cover deeper waters and bad weather. As the needs for offshore platforms are getting higher, the installations and equipments for them needs to match the demands for the hard working conditions and weather challenges.

In this regard, this study has the purpose to present the offshore industry development, offshore platforms types and the lifting equipment installed on them with a focus on the slewing mechanisms that can be found on an offshore platform.

Keywords: exploration, production, installations and equipments, industry, offshore platform, oil & gas

**Proiectarea unei linii tehnologice mecanizate pentru execuția
prin sudare a rezervoarelor**
Designing a mechanized production lines for execution by welding tanks

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Abstract: The reservoirs serve temporary storage of solids, liquids and gas and operates at atmospheric pressure. They have relatively small wall thickness. They can be cylindrical in form vertical, horizontal cylindrical, spherical or conical and can have pressure, temperature and varying storage capacities. A tank is designed in order to be sure, in terms of operational performance and economic efficiency. The quality of welded joints depend on the functionality and safety of reservoirs and through mechanization to remove a large proportion of human errors caused by fatigue, inattention or ignorance, which significantly increases product quality and at the same time increase productivity. This paper presents a variation of the line technology and mechanization of technological process of welding in 2D and video representation of a cylindrical tank.

Keywords: mechanization, automation systems, production line, devices.

**Considerații privind proiectarea mecanismului de ridicare al unei instalații de ridicat
montată pe o platformă marină fixă**
**Considerations on the design of a lifting mechanism lifting equipment mounted on a fixed
offshore platform**

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Abstract: Although the main factors influencing the characteristics of an marine platforme are the functions of structure, depth and drilling environment, there are other factors that are equally important such as: location infrastructure, management philosophy and the financial strength of the operator, and regulations and laws that are in the country in that make the drilling operations.

Also an important factor influencing a platform features are represented by the equipment and installation that equip platform. Thus, this paper presents the study on design of the lifting mechanism of a crane mounted on an offshore platform drilling.

Keywords: marine platform, drilling, lifting equipment and installation, load capacity.

SECTION II

MANAGEMENT AND INDUSTRIAL ENGINEERING STUDENTS SESSION

9

Cercetări privind îmbunătățirea sistemului de legătură cu solul pentru scaunele cu roțile
Research for improvement system connection with ground for wheelchair

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Abstract: This study presents many concepts about providing a safe connection with the ground, by using some special wheels, for individual transport means like wheelchair for persons with locomotive disabilities. To identify the best type of wheel for such a wheelchair, many concepts were developed, many virtual 3D models of independent wheels were made, even a configuration with 3 wheels in a single assembly.

Those were tested with software application like FEA, after which, for 3 of them, prototypes have been made. It was pursued an optimized design of existing wheels, so that new variants proposed to provide better endurance and flexibility.

Keywords: scaun cu roțile, roată, analiză cu element finit, spițe.

10

Elaborarea programului de achiziție a datelor experimentale în vederea efectuării
calculului de verificare a unui boiler pentru prepararea apei calde menajere
The elaboration of data acquisition program to experimental verification of a storage heat
exchanger for hot water preparation

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Abstract: In this paper various aspects regarding the acquisition of the experimental data from the boiler - heat exchanger circuit for performing a calculation for verifying the boiler are covered. Using the LabVIEW software a data acquisition program that monitors and records the physical parameters of the boiler-circuit heat exchanger was developed. Monitoring and recording of the thermal agent temperature is achieved using DS18B20 thermocouples and a data acquisition boards type Arduino Mega 2560. Reports are generated in a Microsoft Excel file.

Keywords: boiler, heat exchanger, temperature, data acquisition, termofluidic

11

Studiu privind posibilitățile de utilizare a navelor fluviale românești în operațiuni umanitare pe Dunăre
Study on the possibilities of using the river vessels from Romanian Naval Forces in humanitarian operations on the Danube

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Abstract The present paper aims to study the possibilities of using the river vessels from Romanian Naval Forces in humanitarian operations on the Danube, highlighting the necessity and importance of military humanitarian operations and Romanian river fleet capacity to intervene in case of floods in areas that are found along the Danube. It was developed a study on high - risk flood areas in the Romanian Danube, which was used to highlight the opportunities for intervention of Romanian Navy in case of flooding the areas located along this river.

Romanian Naval Forces develop humanitarian operations, contributing successfully to helping people and institutions to face the consequences of calamities and disasters and also to prevent this natural phenomena.

Keywords: Romanian Naval Forces, Danube, river vessel, humanitarian operation, flood.

12

Metodă de evaluare a riscurilor din industria maritimă
Risks Evaluation Method in Maritime Industry

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Abstract: Maritime industry is a key element and it is constantly evolving. About 80% of world trade is carried by sea. Nowadays, the accidents and incidents are a serious concern for the maritime industry. The purpose of this paper is to evaluate how the human element influences the occurrence of an accident. Using a risk analysis method – Swiss Cheese Model – and its tool – Human Factors Analysis and Classification System - the main causes of the maritime accidents and incidents will be established.

Keywords: naval accidents and incidents, risk analysis method, maritime industry.

13

Măsurile de prevenire și corecție a defectelor în îmbinările sudate ale construcțiilor navale
Measures for prevention and correction of defects in welded joints of the shipbuilding

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Abstract: Nowadays, when designing ensure the safety of operation by taking into account studies of reliability, it is necessary to know thoroughly the causes of defects in welded joints and their influence on strength in mining products to be possible to avoid material losses and be able to interpret objectively whether a defect may or may not be upheld.

Keywords: prevenire, corecție, defecte, construcții navale, instruire, pondere defecte.

14

Omologarea Procedurii de sudare Monel 400+ P355NL1 Secție tubulară 100 A1/1
Welding Procedure Qualification Record MONEL 400+ P355NL1 Tubular Section 100 A1/1

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Abstract: Tublar section 100 A1/1 achived under this project expected to be manufactured and it cosists of the following components: two removable lids, four rows of tubes, connectors output/input. Tubular plates, distribution room, back room, room walls and sealing surfaces are plated with ENICU-7. Optimum welding process is MAG with flux cored wire due to high productivity and stability of arc. Develop welding procedure will be performed according to EN ISO 15614-1 wich consists in achieving a pWPS followed by a WPQR.

Keywords: Tubular section 100A1/1, MONEL 400, pWPS, WPS, WPQR.

**Metode de îmbunătățire a sudabilității oțelurilor utilizate la confecționarea
prin sudare a schimbătoarelor de căldură**
**Methods to improve the weldability of steels used in the manufacture
of welded heat exchangers**

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Abstract Weldability is a complex idea that characterizes the ability of a material to be weldable without special precautions. Steels weldability assessment is made based on the following factors: behavior in welding metallurgy; behavior in welding technology; behavior in welded construction.

Preheating is an operation in which the temperature of the components is raised to a TPR value called the preheat temperature that is maintained throughout the welding.

Keywords: heat exchanger, gasoline hydrogenation, preheating, weldability.

SECTION III

MARINE AND NAVAL ENGINEERING STUDENTS SESSION

16

Studiu privind alimentarea motorului naval cu două sorturi de combustibil
Study case on naval engine refueling with two types of fuel

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Abstract In this study I will present the new fuels that can be used for marine engines. Until now heavy fuel oil was used as base fuel for ships because it was a cheap and enough but the amount of greenhouse gases that is produced is quite substantial and the power provided by the engine was not enough for a good efficacy. With this thing in mind the engineers have tried to come up with ideas that will make naval engines run with another fuel. The solutions were found in Ultra-low-sulphur Diesel (ULSD) Fuel, Biofuels, Methanol and Biomethanol, Dimethyl Ether – DME, Biodiesel or FAME and other experimental fuels.

Alternative fuels for marine transport can play a crucial role in decarbonising the shipping sector and ultimately contribute towards climate change goals. Market penetration by alternative fuels have already begun with ship builders, engine manufacturers and classification bodies by introducing greener ships running on cleaner fuels. This can be attributed in large part to the MARPOL (International Convention for the Prevention of Pollution from Ships) regulations in place since the 1970s and progressively more stringent emission standards subsequently introduced by national legislators.

Keywords: greenhouse gases, marine transportation, alternative fuels, heavy fuel oil, engine, MARPOL

17

Proprietățile apei
Properties of water

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Abstract: Nowadays, shipbuilding industry is preoccupied of increasing the profit so that it might oversight an important stanchion in it's evolution or it might neglecting: research. For this being the case, to execute or built into the study department which is naval systems and equipment direct connected to water motion, the present project is including a micro-tank where to observe water dynamics. The project takes the shape of excellent teaching material for better understanding of water motion: turbulent, laminar and regulated wave. By dint of those we might observe multiple coatings that this special liquid can be capable using it's own special properties-discovered via scientific research, self study and case study.

Also can be mentioned the fact that the project is made with nonconventional fabrics, recycled and less bought, required scanty building days and a mini group of freshman researchers eager of knowledge.

Keywords: research, water dynamic, turbulent motion, laminar motion, regulated wave

18

Analiza stabilității statice a macaralei plutitoare sub sarcina
Analysis of static stability of under load floating crane

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Abstract This paper presents a study on static analysis of floating crane under load. The cranes are lifting, usually composed of a metal frame shape, construction and size variables and one or more mechanisms serving to lifting and shifting of the burden.

Also floating crane lifting force varies widely, from 10 tons to several hundred tons or more

The purpose of this paper is to analyze the weaknesses of floating crane under load in certain postures.

Keywords: floating crane, stability, load, static analysis, crane arm, The tilt angle.

19

Studiul echilibrului navei ancorate pe mare liniștită
The study of stability anchored ship on the slow sea

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Abstract This study presents an analysis of the stability anchored ship during the slow sea is done. This analysis follows the conditions that need to be met regarding the ship's maneuver at anchor, the conditions of intact stability that have to be met (by analyzing this conditions, the chain equation comes like a result) distribution of exterior forces horizontally and vertically, specific characteristics of the anchor chain before and after the maneuver.

It is defined and described (the 3 steps of paying out the anchor chain) an important process which is in strong connection with the intact stability of the ship and the maneuver to heave-up the anchor.

Final conclusions are presented concerning the forces involved in maintaining the ship's intact stability, differences between mooring lines, anchor chains that are subject to different dynamic tensions and it is analyzed the importance of the anchoring process.

Keywords: stability, ship, chain equation, forces, anchor chain, anchor, dynamic tensions

20

Studiul comparativ al cuplajelor instalatiilor hidraulice navale
Comparative study of hydraulic couplings naval

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Abstract The couplings are bodies that have entrainment connection and for transmitting rotational movement from one tree to another or from one organ to another car. Transmission is transmitted without changing the parameter value or meaning movement.

In some cases, the couplings are designed so as to provide protection against overload or request to stay in contact beyond certain speed limits.

The couplings must meet the following conditions: to work with as little wear; be silent; to have easy maintenance; installing, removing and changing parts easy to make; compensate for angular, radial and axial during operation; not to introduce additional requirements axial, radial and friction forces; to ensure safety.

Keywords: stiffness, vibration and noise attenuation, system maintenance and structural change, flexibility, encouraging compliance

21

Analiza soluțiilor constructive de ambarcare a vehiculelor rulante la bordul navei
Analysis of constructive solutions for vehicle loading onboard

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Abstract: In the present paper it is synthesized the main types of RO/RO ships, constructive types of the ramps for loading and unloading vehicles. It describes an innovative solution for the reduction of stresses that are applied on the RO/RO ramp. RO/RO vessels use shipside and shore ramps as roll-on/roll-off loading facilities. In same time water level fluctuations in ports areas make difficulties to establish proper access to shore for RO/RO vessels during loading and unloading operations. Flexibility of RO/RO vessel-to-shore links pan is one of the key elements for optimization of RO/RO operations in ports. Feasibility outline of pontoon ramp potential, calculation methods and practical usage is studded and presented further in the article.

Keywords: RO/RO ships, vehicles, ramps, loading-unloading, pontoon, links pan, draught, rotation angle

22

Studiul manevrabilității navei aflate în exploatare
The study of ship maneuverability in operation

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Abstract Present paper aims to present the study of ship maneuverability in operation. This study explains both environmental and navigation restrictions influence (the influence of currents, wind and waves) on ship and port maneuvers (maneuvers of incoming and outgoing). Special attention is given to the analysis of ship maneuverability with damage to body or steering system as well as in case of a fire on board.

At the end of the paper are presented the conclusions on the importance of execution of ship maneuvers aforementioned for its operation within normal parameters regardless of type and its destination.

Keywords: maneuverability, operation, currents, waves, wind, damage, steering system, fire

23

Studiu comparativ al sistemelor de propulsie navală neconvenționale
Comparison study of unconventional marine propulsion systems

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Abstract: This paper is a comparison of the most common unconventional marine propulsion systems. I will take into consideration the Flettner Rotor with the Magnus effect, the kite propulsion and the rigid wingsail assisted propulsion. I will analyze these three types of propulsion that use wind as source of energy. Wind is the most economic and environmentally sound source of energy. The focus of this paper is to assess the potential for wind-powered shipping.

Keywords: Flettner rotor, kite, Magnus Effect, rigid wing sails, propulsion

24

Proiectarea sistemului de stins incendiul cu sprinklere conform normelor de registru
The design of sprinkler systems in accordance with registry

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Abstract When designing a ship must take into account the facilities and amenities that are necessary for proper functioning in good time. Because the vessel can be handled safely between its installations are distinguished the fire fighting. Based on functional scheme will study general aspects of the installation of firefighting sprinkler, describing it in terms of places where it is to be placed on the ship, the calculation facility in order to determine the necessary flow and pregnancy in order to choose the pump, piping this installation, control and signaling devices. An important element of the installation is the pump that will be checked in terms of constructive and functional tests that run through the end of the installation design.

Keywords: flow, piping, triggering automatic pump, control and signaling devices.

25

Metodologie integrată de evaluare a factorilor de poluare atmosferică portuară
Integrated Approach to Assessment of Port Air Pollution Factors

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Abstract The aim of this article is to present a solution for environmental management in the port activity, creating a software for determining the amount of emissions resulting from this branch. Within this paper it is proposed an alternative approach to issues of pollution, so the comprehension of the notion: inventory of facilities and port activity, is a necessity. Inventory will be divided in harbor craft, cargo handling equipment and heavy-duty trucks. Besides determining the amount of emissions it will be also calculated the best method of maintenance of port equipment and the dispersion of the pollutants. Determining the optimal maintenance will have effects on decreasing of both the ecological footprint and maintenance costs. After calculating the amount of emissions it will be also determined the concentrations felt in the housing area near the port using Gaussian equation and stability Pasquill classes.

Keywords: port pollution, cargo handling equipment, harbor craft, maintenance, dispersion

Metode avansate de purificare a apelor uzate de la bordul navei
Advanced methods for purifying wastewater from board

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Abstract The quality on particular categories of water used in industry covers a very broad, ranging from natural water used in transport hydraulic in some industries (mining processing, coal, extractions, etc.), and high-purity water sought. The existence of rules, standards or guidelines, setting out the conditions water on different lines or technological flows. Plumbing technical water installation technique is to produce technical water on board is necessary for the cooling of the engine or boiler feed, whether for health, for the power showers, laundries. The water is undrinkable, It is obtained by distillation in special salt water. Ships with high autonomy on board distillers or distilled water generators (GAD). The water technique can be kept in tanks structural or non-structural.

Keywords: water, saltwater, engine, ships, board

Studiul metodelor moderne de obținere a apei potabile la bordul navei
The study modern methods of obtaining fresh water on board

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Abstract In the present study will be an analysis of modern methods of obtaining drinking water on board. Drinking water reserves are designed to preserve and supply of drinking water to consumers in kitchens, squares, control stations and medical rooms. Drinking water must be fresh, clean and transparent. It must not contain microorganisms or harmful substances the body. Shipboard potable water may come from an urban network or an installation on board on its own that process sea water so be respected STAS 1342-84. Modern methods for the preparation of water are reverse osmosis, softening, ultrafiltration, electrocoagulation, UV disinfection distillation. These methods will be presented in the paper

Keywords: fresh water, water systems, ship, modern methods, osmosis, UV disinfection, distillation

28

Tehnici moderne de proiectare parametrizată a reductorului-inversor naval
Modern techniques of parametric design for ship inverting - reducing

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Abstract: This paperwork presents three-dimensional concepts parameterization, parameter setting and introducing them into the soft and three-dimensional parametric design stages using as working tool Autodesk™ Inventor 2015.

This paper aims to create 3D reversing a ship it are imposed several conditions of functionality, with the possibility of changing the initial parameters and also change the 3D model of the assembly created.

Keywords: parameterization, design, inverter, shafts, gear, Autodesk™ Inventor

29

Studiu de optimizare a distilatoarelor navale de apă
Optimization study of marine water distillers

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Abstract Water quality varies from surface sources of drinking water quality which, the number of microorganisms harmful to health reasons since raw water to be treated to match in terms of organoleptic, physic-chemical and bacteriological. An innovation that can significantly improve people's lives is the membrane of carbon, called grafen membranes. The membranes thickness is reduced compared to the existing market. This new technology can avoid the process of reverse osmosis. Approximately one nanometer membrane holes are the main factors that determine the amount of low energy required.

Keywords: water distillers, microorganism, carbon membranes, reverse osmosis, low energy

Influența efectului de squat asupra calităților evolutive ale navei tip Dragor Maritim la litoralul Mării Negre
The influence of squat effect on evolutive qualities of Dragor Maritime ship at Black Sea coast

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Abstract: Squat, defined as the sinkage and trim of vessels due to their own forward speed, is of particular importance in shallow water areas. Small under keel clearances cause large return currents which lead to important sinkages and higher risks of bottom touching as already mentioned by Constantine (1960). In shallow navigation areas the presence of a soft fluid mud layer on the bottom is not exceptional, but its effect is mostly neglected in the formulation of squat. As a consequence pilots and scientists may disagree on the safety of navigation. Mostly pilots have to rely on the high frequency echo to determine the water depth. As the latter detects the top of the mud layer and not the solid (or nautical) bottom level, they may still be able to navigate safely through a muddy navigation area, even in case the ship is navigating at a zero (or even negative) under keel clearance according to the echo sounder.

Keywords: Romanian Naval Forces, Squat, under keel clearance, Squat Effect, Black Sea.

SECTION IV

DEBUTANT-ENGINEERS RESEARCHERS STUDENTS SESSION

31

**Modernizarea platformei marine de producție prin montarea unei structuri sudate pentru
amplasarea echipamentelor**

Upgrading a marine platform of production by fitting a welded structure for equipment

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Abstract This marine platform of production is the mother platform for six platforms of extraction of gas or oil. Upgrading the production of marine platform it is necessary because it is needed a production capacity exceeding.

Keywords: platformă, structură, sudură, producție, modernizare.

32

**Creșterea productivității liniei de fabricație
pentru produse de tipul „sistem de incinerare cu recuperare de caldură” prin utilizarea
utilajelor și dispozitivelor de poziționare, rotire și sudare**

**Increased productivity manufacturing line
product type „ incineration system with heat recovery " by using the machinery and
devices for positioning , rotation and welding**

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Abstract. The purpose of this study is to examine whether implementation of automating a production line for a product type,, incineration system with heat recovery " is efficiency. I analised issues related of raising fabrication line productivity for this product.

I presented questions economic principles of mechanization and automation, technical problems positioning devices, turning, welding, advantages and disadvantages of these products in applications of industrial robots. Using installations that can be used for other operations in manufacturing process or for other products with same features, that can be readjusted without spending more money, I concluded that automation of this production line is profitable because is raising productivity and economy.

Keywords: automatizare, linii de fabricație, procedee de sudare, dispozitive auxiliare, dispozitive ajutătoare, roboți pentru sudare.

33

Analiza particularităților specifice procedeului de sudare prin frecare
Specific features analysis of friction welding process

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Abstract: The welding technology it's well known since the end of the last century. The following paperwork describes the friction welding, the plastic deformation, relative motion and advantages, as productivity, and disadvantages as difficulties in examining non-destructive structures.

Keywords: friction welding, pressure welding, inert gas, plastic deformation, relative motion, rotational symmetry, productivity.

34

Studiu privind creșterea capacității de ridicare a unui sincrolift naval
Study on increasing the lifting capacity of a ship synchrolift

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Abstract The main idea of this project is represented by the exposure of the constructive solution found by Vard Fincantieri shipyard engineers, in Tulcea, to launch a ship that exceeds the synchrolift ability to launch the ship on water. The method consists in the transshipment of a vessel by means of trolleys from the shipyard quay on a floating dock through synchrolift and a link bridge. Since the draft from the basin in Tulcea is insufficient, the loaded dock will be towed to the port of Constanta laugh, where the ship will be launched on water.

Keywords: floating dock, loading capacity, transport trolley, synchrolift, vessel transshipment, launching

35

**Examinarea prin metode nedistructive a imperfecțiunilor și defectelor de adâncime din
îmbinările sudate ale structurilor navale**
**Non-destructive methods for examining depth imperfections and defects for naval
structures welds**

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Abstract: In this paper we will talk about non-destructive testing of welds used to detect depth defects or imperfections.

We shall begin with an introduction into non-destructive examination's purpose, small presentation of some depth weld imperfections and methods used for observing them continuing with the study of two testing methods.

Keywords: non-destructive testing, welds, imperfections, defects, ultrasounds, X rays, gamma rays.

36

**Studiu privind comportarea sub acțiunea presiunii a rezervorului de înaltă presiune
de sigilare cu apă a fclei utilizând programul ANSYS pentru studenți**
**Study on reservoir behavior under the pressure of high-pressure water sealing
a flare using ANSYS software for students**

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Abstract: The calculations of strength of materials for future steel structures are very important as this we can learn whether the structure will withstand the action of the stresses to which it will be subjected during the operation. Moreover this study is required.

ANSYS software is one that helps us see the behavior of a steel structure on which applications it applies to those underlying metal structure.

Keywords: cusături; caracteristici; diagrame; sudură; îmbinări; tensiuni;deformații; ANSYS.

Controlul calității în timpul fabricației structurilor sudate Quality control during welded structure fabrication

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Abstract The main scope of this project it is to show how a welded structure is verified during all stages of his production. So, quality control of each step of the production is made by demand of client in according with active standards and Inspection and Testing Plan(ITP). By respecting and achieving all this steps will results a structure with no defects which can be used in exploitation.

Keywords: control, structuri sudate, standarde, calitate, flux tehnologic.

Autorizarea sudorilor care efectuează lucrări de sudare în domeniul construcțiilor navale, conform societății de clasificare DNV GL Welders authorization who perform welding works in shipbuilding, according to the DNV GL classification society

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Abstract: In the shipbuilding sector is used a number of standards and regulations on the construction of new ships, old ship repair, certification and qualification of welders, instructions on use, storage and testing of basic materials and of those additives, etc.

In Romanian shipyards, except the RNR (Romanian Naval Register), DNV GL was adopted as a classification society.

In the present paper are detailed steps that must be fulfilled to obtain certification and authorization of one welder or welding operator performing welding works in shipbuilding, according to the DNV GL classification society.

Keywords: autorizare, sudori, construcții, societate,clasificare, DNV GL, certificare, calificare.

Verificarea calității îmbinărilor sudate din structura unui schimbător de căldură Checking the quality of the welded seams in the structure of a heat exchanger

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Abstract: The welded seams are the result of complex fizical, chemical and metallurgical processes, they are susceptible to varied number of imperfections that can appear in the welded joint, the base material or in the thermicaly influenced area.

The present paper will establish the optimal methods for accomplishing the necessary non destructive testing for the manufacturing and optimal functioning of a heat exchanger.

Keywords: NDT, liquid penetrant test, visual test, radiation test.

Studiul calităților propulsive ale navomodelului cu suprafețe rigide Study propulsive qualities of model ship with rigid surface

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Abstract The focus of this paper is the designing and optimizing of the naval propeller, based on the analysis of the factors contributing to the increase of its effectiveness.

The theory, analyzes the naval engine under study, i.e. naval propeller. The propeller is designed with systematic diagrams of test patterns, based on a set of initial data. Comparative studies are performed for four propellers naval and interpret the results.

The practice has a target the radio control boat which was mounted on an electric engine drive. There are examines the parameters resulting from different test configurations propeller propulsion, and finally the data recorded is interpreted.

Keywords: naval propeller, propeller design, systematic attempts charts, thruster optimization, model, radio control, telemetry, comparative results.

Studiul platformelor maritime auto-ridicătoare
The study of self elevating offshore platforms

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Abstract Offshore structures are used worldwide for a variety of functions and in a variety of water depths, and environments. This paper will present a general overview regarding the offshore platforms, classification, structural details, types and comparison between self elevating systems. Considering this aspects, the overall objective is to provide a general understanding of how the self elevating systems works, construction particularities, transportation and installation of offshore platforms.

Keywords: *rigs, platforms, offshore, structure*

SECTION V

THE PREAMBLE OF ENGINEERING STUDENTS SESSION

42

**Rolul laboratorului tehnologic în TVET
Technological Laboratory role in TVET**

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Abstract Increasing the quality of education in the Energetic High School Constanta can be achieved by enlarging school's inventory, the students to develop key competences and specific vocational training field. Thus, to consider setting up a technical laboratory in electrical / electronics- and equipping it with ten teaching modules, properly equipped, which allows various labworks. The goal was the increasing students' interest in technical subjects, successful completion of the certification exam and professional skills by graduates choosing technical faculties.

Keywords: IES, calitate, laborator, standuri , retehnologizare, competențe.

43

**Ferma ecologică modernă
Modern Ecological Farm**

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Abstract Ecological farming generally involves a diversity of crops, animals and methods. Management techniques include cover crops, green manures, composting, mulching, crop rotation, no till cropping and the use of animal waste to maintain fertility. Diversification provides integrated farm systems, complementary production cycles and infrastructure as well as a form of income insurance that helps with production and price fluctuations.

Energy use and off-farm inputs are minimized. In a time of rising oil costs and decreasing fossil fuel supplies, a great dependence on off-farm and non-renewable energy, fertility and chemical sources is both environmentally and economically unsustainable. At the end of the day, entrepreneurial ecological farmers aim to have more control over the costs of their farm inputs and operations and thus more control over their bottom lines..

Keywords: farm diversification, green energy, ecological farming.

44

Arca lui Noe in clepsidra timpului Noah's Ark in the hourglass of time

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Abstract. Noah's Ark has been designed and engineered to save the humanity and animal species of God's flood. Today, this Biblical myth was taken over and revamped the Bible to find a solution to overpopulation. So was thought a new concept - cohabitation at sea. With advanced technology, the man was created the Ark Hotel. By combination of multiple domains like engineering, construction, naval architecture and design could be revolutionize the survival concepts for human race.

Keywords: ark, ship, construction, engineering conceive

45

Reprezentarea în proiecție axonometrică utilizând AutoCAD Representation in axonometric design using AutoCAD

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Abstract In the design and graphical representation of technical products (parts , equipment , buildings, etc.) for an overview of them , besides using orthogonal projections it is also used the design generated view. AutoCAD (Computer Aided Design) allows the use of orthogonal design, as well as axonometric design, which allows to view the details and design of complex products.

Keywords: orthogonal design, axonometric design, snap, isoplane, ellipse, grid, ucs, trim, break, limits, line.

Considerații privind navele cu destinație specială Considerations on special purpose ships

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Abstract The ships with special destination are defines themselves, in that they have a special scope. May fall into this category vessels for offshore activities, such as: installation of wind turbines, oil drilling, installation of underwater pipes, installation of underwater cable, military activities and so on.

In this paper, the authors show you some of these ships. An effort of this team of young future engineers is appreciated in collecting this information. The original contribution of this team is the realization of 3D graphic model of the pipe launcher from equipping SC Grup Servicii Petroliere SA Constanta Romania.

Keywords: ships, special vessels, 3D graphic model, 3D Max.

Utilaje, dispozitive și scule utilizate la asamblări generale Equipment, devices and tools used in general assemblies

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Abstract In the technique, the main purpose is to obtain a simple or complex finished product. Studying the processes for obtaining various components, occurs the assembly situation in a whole, ie the finished product good to sold and used by the consumer. The problem is general assembly of results of different production processes.

After I carried out the practice in the engineering industry, I observed interesting aspects to the general assemblies to which I will refer below.

Keywords: equipment, devices, tools, assembly.

48

Aplicație practică a platformei Arduino
Practical application of Arduino platform

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Abstract In all areas, including military, is looking for solutions to simplify people's work and at the same time to ensure their security. One of these solutions can be Arduino platform, an instrument which can perform systems capable to 'perceive' and 'control' the world around, being used to develop interactive objects. Information, taken from a variety of sensors and switches, are processed in the microcontroller and transmitted to a range of various lights, motors, actuators etc. Some applications may include construction of robots, drones, control of military equipment, weather stations, gyrostabilisers etc.

Keywords: Arduino, android, platforă, mediu integrat, interfață, senzori, driver, conector, aplicații.

49

Evoluția jocurilor virtuale pentru PC. Tendințe și perspective
Virtual games evolution for PC. Trends and prospects

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Abstract The PC games are electronic games in which interact with a graphics interface to generate a visual response on the computer monitor. The PC games have, in general, a reward system for the user. The face work propose a short retrospective of the game concept for PC, starting with the year 1950 and finishing with modern games that are oriented to virtual reality.

Keywords: Game, PC, Graphics Interface, 2D, 3D, Virtual Reality

50

Telecomandarea yalei electromagnetice cu ajutorul telefonului mobil
The control of a electromagnetic lock with the help of the mobile phone

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Abstract This paperwork presents the creation of the multifunctional device for:

- The control of the electromagnetic lock in a home or garage, electrical devices inside a house etc. via the mobile phone
- Moisture detection
- Automatic adjustment of temperature inside a house
- Detection of the infrared rays

Keywords: photorezistance, photodiode, relay, thermistor

51

Bariera optica
Optic Barrier

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Abstract The optic barrier presents the usage of light translators and of the photoelectric effect for the creation of movement triggered alarms, automatic doors and movement triggered machines or fittings alike.

Keywords: photodiode, LED diode, transistor, relay, translator, semi-conductor, darlington fitting, photoelectric effect

Considerații generale privind instalațiile și echipamentele pentru operarea navelor General Considerations Regarding Installation and Equipment for the Vessels Operation

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Abstract In this paper it are clasified, presented and described the most used installation for naval and port industry, in our country and other countries, like quay cranes, mobile cranes, floating cranes, naval cranes etc. In this work it shows also in detail the system of transporting cargo on deck (deck cranes), wich occupies the first place in naval operating industry. Finally it shows the conditions imposed in the exploitation of naval lifting systems.

Keywords: naval and port industry, deck cranes, conditions imposed in exploitation.
