

**NUCLEAR POWER PLANT – FRIEND OR FOE?
A SURVEY ON DIFFICULTIES IN SLOVAK NPP CONSTRUCTION**

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Rok vypracovania: 2016/2017

Abstrakt:

Jadrová energia je jedna z najefektívnejších spôsobov výroby elektrickej energie na svete a tiež môže byť aj najnebezpečnejších, ako sme mohli vidieť v minulosti. Ľudstvo si zobralo dôležité lekcie s jadrových havárií a vytvorilo súbor pravidiel, ktoré zabezpečujú aby sa chyby z minulosti neopakovali. Na Slovensku fungujú štyri reaktory z ôsmich, ktoré produkujú 80% elektrickej spotreby Slovenska. Situácia by sa mohla zlepšiť ak by bola dokončená výstavba tretieho a štvrtého bloku Mochoviec, pričom každý z blokov by poskytoval 13% elektrickej spotreby Slovenska. Veda a technológie robia prelomy v jadrovej bezpečnosti a efektívnosti jadrových reaktorov aby sa ľudia v budúcnosti nemuseli obávať a aby mohli využívať jednu z najčistejších produkcií elektrickej energie na svete.

Kľúčové slová:

Bezpečnosť, jadrová energia, jadrové elektrárne, zákony a nariadenia

A NEW CONCEPT OF COMPUTER PERFORMANCE SHARING

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Rok vypracovania: 2016/2017

Abstrakt:

Goal of this project is describe and design new client software that would allow it's user to enhance overall computer performance. This program would be able to boost encryption and decryption processes as well.

Software would be based on "peer to peer" connection that is commonly known for sharing and downloading wide sorts of media. In its final shape, this client could be presented in many forms, but we would prefer software extension or "add-on" form because of its accessibility and lightweight character which fits this concept best.

Cieľom tohto projektu je, opísať a navrhnuť softvér ktorý by užívateľovi pomohol navýšiť výpočtový výkon počítača. Tento program by urýchlil najmä šifrovanie a dešifrovanie informácií. Samotný softvér by bol založený na „peer to peer“ klientoch ktorý je dnes známy hlavne vďaka nelegálne zdieľanému a sťahovanému obsahu. Vo svojej finálnej podobe by bol program reprezentovaný vo forme doplnku pre softvér tretích strán najmä pre získanie hardvérovo nenáročnej charakteristiky, ktorá tomuto projektu prináleží najlepšie.

Klíčové slová:

performance, share, enhance, power, peer2peer

BUILDING CNC MILLING MACHINES

Vypracovali: Roman Šturcel

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Rok vypracovania: 2016/2017

Abstrakt:

This thesis is dealing with the designing and building of multifinctional CNC machines, which are created in connection with the Industry 4.0. The CNC machines are designed for customers to cover all their needs. There are various needs as measures, precision or speed. Another plus is, that there is a possibility of quick changeover, e.g. from CNC machine to 3D printer, laser cutter or to welding machine. The machines are unique, with no competition within the market. They are saving manufacturing costs and also the space used on the shop floor.

Revolutionary item of our CNC machines is a built-in camera, that allows customers to watch how workpieces are being machined online.

Kľúčové slová: industry 4.0; multifunctional; tailored; CNC milling machines

EXCELLENT SLOVAK PRODUCT: TOFU LUNTER

Vypracoval: Bc. Katarína Tkáčiková

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Rok vypracovania: 2016/2017

Abstrakt: For over 25 years, the Lunter family has been producing high quality tofu that is currently exported to Czech republic, Poland and Hungary, reaching monthly production of 160 tons. The production was triggered by unfortunate personal events of Ján Lunter who hoped to cure his mother from cancer with a healthy plant-based diet. The company produces a cotton type of tofu that is firm in texture as it contains little water. The other less common type of tofu is the so-called silken tofu which is currently available only in specialized stores. It is much softer and can contain up to 90% of water. The Lunter company does not plan to start the production of silken tofu as they believe the consumers in Slovakia are not used to this kind of tofu due to its specific jelly-like texture. As a part of my project, I asked 61 respondents to eat a sample of both types of tofu and state which they liked better. 57% of respondents preferring the cotton Lunter tofu to the silken type confirm the assumption and prove the excellent quality of Slovak tofu. However, 36% of respondents preferring silken tofu also show its dormant potential to become a popular health food among Slovak consumers.

Kľúčové slová: tofu, soy, food sample, business opportunity

ESTABLISHING A NEW SUBSIDIARY –

VISION-MISSION-ACTION

Vypracovali: Simona Rašková, Dávid Javor

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Abstract: The name of our project is Establishment of a new subsidiary: vision-mission-action. We inform about AT-Agrotyp, my family business on the one hand, and .Agrograss enterprise – a subsidiary based on the family business, their line of business, main products and services. AT-AGROTYP is a company that focuses on sales, distribution and service of agricultural equipment. A new subsidiary will be the focused on providing services in lawn care and landscaping. Vision and mission of the new subsidiary, as well as the action to consider are drafted in the business plan. We mention benefits for me, our family company, society and environment, while focusing on building new green industry parks and also application of corporate social responsibility. And finally we mention two types of intended advertisement and sales promotion.

Kľúčové slová: establishment, subsidiary, company, vision, mission, action, agriculture equipment, sale, distribution, service, customer, business, enterprise, lawn care, landscaping, satisfaction, employees, location, logo, advertisement, sales promotion, website, local press, benefits, green industry parks, corporate social responsibility,

UPDATE ON QUANTITATIVE ANALYSIS OF CARBIDES IN SUB-ZERO TREATED VANADIS 6 STEEL

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Abstract:

The main focus of this study was to observe the effects of sub-zero treatment on microstructural changes in Vanadis 6 ledeburitic cold work tool steel. We dealt with a partial task of the STU MTF VEGA project named "Study into the metallurgy nature of the structure and property changes of Cr-V ledeburitic steel by sub-zero treatment". The samples were sub-zero treated in liquid nitrogen at -196 °C for different amount of time and tempered at the temperatures ranging from 100°C to 600°C for 2 hours. The experiment included quantitative analysis of carbide phases in the microstructure. The number of secondary carbides (SCs) and eutectic carbides (ECs) did not change in general over the used heat treatment schedules. The amount of small globular carbides (SGCs) increased after sub-zero treatment was applied and decreased slightly with the increasing tempering temperature.

Keywords:

Cr-V ledeburitic steel, heat treatment, sub-zero treatment, carbide, retained austenite

Abstrakt:

Hlavným cieľom tejto práce bolo sledovanie zmien v mikroštruktúre ledeburitickej nástrojovej ocele Vanadis 6 určenej pre prácu za studena po kryogénnom spracovaní. Riešili sme čiastkovú úlohu v rámci projektu VEGA s názvom „Štúdium metalurgickej podstaty zmien štruktúry a vlastností Cr-V ledeburitickej ocele kryogénnym spracovaním“. Vzorky boli kryogénne spracované v tekutom dusíku pri teplote -196 °C s rôznou výdržou na tejto teplote a popúšťané pri teplotách od 100°C do 600°C po dobu 2 hodín. Súčasťou experimentu bola kvantitatívna analýza karbidických fáz v mikroštruktúre ocele. Počet sekundárnych karbidov (SCs) a eutektických karbidov (ECs) sa vplyvom tepelného spracovania výrazne nemenil. Počet malých globulárnych karbidov (SGCs) sa aplikáciou zmrazovania zväčšil a následne s rastúcou teplotou popúšťania ich počet klesal.

Klíúčové slová:

Cr-V ledeburitická oceľ, tepelné spracovanie, kryogénne spracovanie, karbidy, zvyškový austenit

ENHANCING BUSINESS MINDSET

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Abstract: Nowadays, there are many ways how to enhance business mindset. One significant example can be organizing the TEDx conferences – a unique conference form gathering speakers, who are special for their thoughts, deeds, talent and potential. Participation in conference organizing can be beneficial for all involved in. They can learn how to set up something new from very beginning - in this case TEDx conferences in academic sector. Our project aims at presenting the timeline of steps needed to prepare the first TEDx conference at MTF, attracting students to participate in either as volunteers or as listeners and demonstrating this “learning through doing “ approach how to enhance business mindset. If the first TEDx conference at MTF is a profitable concept, there will be an opportunity to establish a conference agency for organizing TEDx conferences in academic sector in Slovakia based on business.

Keywords: business mindset, conference, sharing ideas, entrepreneurship, learning through doing