

РЕФЕРАТ

**ЗА ИЗБОР НА НАСТАВНИК ВО СИТЕ ЗВАЊА ЗА НАСТАВНО-НАУЧНАТА
ОБЛАСТ ОРГАНИЗАЦИЈА НА ТЕХНОЛОШКИ ПРОЦЕСИ (21105)
И ИНДУСТРИСКА ДИНАМИКА (21108) НА МАШИНСКИ ФАКУЛТЕТ
ПРИ УНИВЕРЗИТЕТ „ГОЦЕ ДЕЛЧЕВ“ ВО ШТИП**

Со Одлука 2202-54/3 од 27.4.2023 година донесена на 145. седница на Наставно-научниот совет на Машински факултет, одржана на 27.4.2023 година, определени сме за членови на Рецензентска комисија за избор на наставник во сите звања за наставно-научната област *организација на технолошки процеси* (21105) и *индустриска динамика* (21108) на Машински факултет при Универзитет „Гоце Делчев“ во Штип, во состав:

- **д-р Радмил Поленаковиќ**, редовен професор на Машински факултет, Универзитет „Св. Кирил и Методиј“ - Скопје, области метод на анализа на структура и функционирање на претпријатието (21100) и индустриска динамика (21108) – претседател;

- **д-р Атанас Кочов**, редовен професор на Машински факултет, Универзитет „Св. Кирил и Методиј“ - Скопје, области производно инженерство, технологии и системи (21403) и организација на технолошки процеси (21105) – член;

- **д-р Мишко Цидров**, редовен професор на Машински факултет, Универзитет „Гоце Делчев“ - Штип, области методи на анализа и функционирање на претпријатието (21100) и организација на административните процеси (21106) – член.

Конкурсот за овој избор беше објавен во весниците „Слободен печат“ и „Коха“ на 13.4.2023 година и во предвидениот рок се пријави д-р Дејан Крстев, лаборант на Машински факултет при Универзитет „Гоце Делчев“ во Штип.

Врз основа на приложената документација од кандидатот, чест ни е на Наставно-научниот совет на Машински факултет да му го поднесеме следниов

ИЗВЕШТАЈ

Биографски податоци

Кандидатот **д-р Дејан Крстев** е роден на 20.10.1988 година во Штип, Р. Македонија, каде што завршува основно, средно и високо образование. Високото образование го започнува на Факултет за природни и технички науки на Катедра за индустриска логистика при Универзитет „Гоце Делчев“ во Штип, каде што стекнува звање дипломиран инженер по индустриска логистика во 2010 год. со просечна оценка 9,85. Истовремено студира на Факултет за информатика при Универзитет „Гоце Делчев“ во Штип и стекнува звање дипломиран инженер по информатика во 2011 год., со просечна оценка 9,00.

Магистрира на Факултет за природни и технички науки на Катедрата за индустриска логистика при Универзитет „Гоце Делчев“ во Штип и се стекнува со звање магистер по технички науки – индустриска логистика во 2013 год., со просечна оценка 9,33.

Докторира на Машински факултет при Универзитет „Св. Кирил и Методиј“ - Скопје, Р. Македонија, на Катедрата за индустриско инженерство и менаџмент во 2020 год. со просечна оценка 9,50 и се стекнува со академски статус доктор на технички науки по индустриско инженерство и менаџмент.

Моментално е вработен на Универзитет „Гоце Делчев“ во Штип на Машински факултет како лаборант. Д-р Дејан Крстев во текот на неговото работење и студирање во високото образование има публикувано во меѓународни списанија како автор и коавтор на 40 трудови.

Општи и посебни услови кои треба да ги исполнува кандидатот за избор во звање доцент согласно со Законот за високо образование и Правилникот за посебните услови и постапката за избор во наставно-научни, наставно-стручни, научни, наставни и соработнички звања на Универзитет „Гоце Делчев“ – Штип.

Општи услови за избор:

- Просечен успех

Кандидатот д-р Дејан Крстев има просечен успех од додипломски студии **9,85**; просечен успех од постдипломски студии **9,33** и на докторски студии **9,50**.

- Научен степен

Кандидатот д-р Дејан Крстев е доктор на технички науки по индустриско инженерство и менаџмент од областа на организација на технолошки процеси (21105) и индустриска динамика (21108). Докторската дисертација е одбранета во 2020 година на Машински факултет при Универзитет „Св. Кирил и Методиј“ - Скопје, Р. Македонија.

- Објавени научни трудови во референтна научна публикација (најмалку 4 (четири))

Кандидатот д-р Дејан Крстев има објавено 14 научни труда во референтна научна публикација (од кои 7 во меѓународни списанија и 7 научни труда на меѓународни конференции во земјата и во странство) согласно со ЗВО во последните пет години пред објавувањето на огласот за избор:

Бр.	Автор	Насловна трудот	Меѓународно научно списание/ меѓународна публикација	Година
1.	Dimitrov Sashko, Krstev Dejan, Nedeva Biljana	Modelling and Simulation of the Transient Performance of a Direct Operated Pressure Relief Valve	Magazine of Hydraulics, Pneumatics, Tribology, Ecology, Sensorics, Mechatronics "HIDRAULICA", pp 75-81 ISSN 1453 – 7303	2022
2.	Krstev Dejan, Krstev Aleksandar	Reverse logistics – possibility, expectation and sustainability perspectives	Vol. 16 No.1: Natural Resources and Technology, pp.89-96 ISSN 1857-6966	2022
3.	Dimitrov Sashko, Krstev Dejan, Krstev Aleksandar	Matrix method for large scale systems analysis.	Balkan Journal of Applied Mathematics and Informatics, 5 (2). pp. 99-106. ISSN 2545-4803	2022

4.	Sijce Miovska, Krstev Aleksandar, Krstev Dejan , Dimitrov Sashko	Business process modeling, system engineering and their approach to its application in industrial capacity	Balkan Journal of Applied Mathematics and Informatics, 5 (2). pp. 99-106. ISSN 2545-4803	2022
5.	Krstev Dejan , Krstev Aleksandar, Dimitrov Sashko	Data processing using hierarchical process in real circumstances	XII International conferences of INFORMATION TECHNOLOGY AND DEVELOPMENT OF EDUCATION ITRO 2021, Zrenjanin, November 2021, pp.104-108 ISBN: 978-86-7672-351-5	2021
6.	Dimitrov Sashko, Krstev Dejan , Krstev Aleksandar	Improvement of the static characteristics of pilot operated pressure relief valves	XII International conferences of INFORMATION TECHNOLOGY AND DEVELOPMENT OF EDUCATION ITRO 2021, Zrenjanin, pp.147-155 ISBN: 978-86-7672-351-5	2021
7.	Todorov Krste, Krstev Dejan	Data processing using mathematical models in leather industry. Natural resources and technologies.	Vol. 15 No.2: Natural Resources and Technology pp.75-81. ISSN 1857-6966	2021
8.	Krstev Dejan , Dimitrov Sashko, Krstev Aleksandar	Vehicle routing problem with distance constraints and clustering using matlab	XII International conferences of INFORMATION TECHNOLOGY AND DEVELOPMENT OF EDUCATION ITRO 2021, Zrenjanin, pp.200-205 ISBN: 978-86-7672-351-5	2021
9.	Krstev Aleksandar, Krstev Dejan , Radmil Polenakovikj	Modelling with Structural Equation Modelling – Application and Issues.	XI International Conference of Information Technology and Development of Education ITRO 2020, Republic of Serbia.	2020
10.	Krstev Aleksandar, Serafimov Dalibor, Cekerovski Todor, Cekerovska Marija, Krstev Dejan	Application of Sensors in Real Time Systems for Optimizing Industrial Processes in Chemical Facilities.	XI International Conference of Information Technology and Development of Education ITRO 2020, 30 Oct 2020, Republic of Serbia	2020
11.	Alili Agron, Krstev Dejan	Using SPSS for research and data analysis.	Knowledge – International Journal, 32 (3) pp. 363-368. ISSN 2545-4439.	2019
12.	Krstev Aleksandar, Krstev Dejan , Krstev Boris, Alili Agron, Nedeva Biljana	Effective Teams for Sustainable Projects–Principles, Practice and Presentation.	ITRO 2019, Zrenjanin, Republic of Serbia. Pp. 156-160 ISBN: 978-86-7672-322-5	2019
13.	Krstev Aleksandar, Krstev Dejan , Krstev Boris, Miloshevski Goran	Human Resources Evidence and Management Software's.	ITRO 2019, Zrenjanin, Republic of Serbia. pp.116-120 ISBN: 978-86-7672-322-5	2019
14.	Nedeva Biljana, Krstev Dejan	Advanced warehouse technologies-perspectives and possibilities	Vol.3 No.3 International Journal, Institute of Knowledge Management pp.683-386 ISSN 25-4439	2019

- Потврда за познавање на најмалку еден странски јазик

Кандидатот д-р Дејан Крстев има потврда за познавање на англиски јазик – BULATS (Business Language Testing Service) меѓународен сертификат.

- Способност за изведување на високообразовна дејност

Кандидатот д-р Дејан Крстев има учествувано во изведување на наставата со одржување на вежби по повеќе предмети на Машински факултет при Универзитет „Гоце Делчев“ во Штип.

Посебни услови:

- Учество во научноистражувачки проекти, односно значајни достигнувања во примената на научноистражувачките резултати

Кандидатот д-р Дејан Крстев е учесник на проектот VizzArc, кој претставува детално разработен и конципиран процес на развој на нов производ – софтверско решение за примената на модерни технологии со цел визуелизација на идните градежни зафати во природни димензии. Целта на проектот е примена на очила за виртуелна реалност во областа на градежништвото и архитектонското проектирање, како и примена на VR во инженеринг и градежни апликации. Овој проект нуди уникатно искористување на интегриран производ од услуга и технологија со искористување на достапна постоечка хардверска технологија. На овој начин би се забрзале и подобриле процесите на обработка и аналитика на податоци во реално време и нивна интеграција во градежните планови што ќе придонесе кон поефективно, олеснето и поефикасно работење. Со овој проект компанијата нуди метод за поедноставување и делумно автоматизирање на процесот на повторна употреба на дигитални градежни модели кои веќе се користат во градежништвото за да се создадат виртуелни сцени наместо да се прави паралелно создавање на содржини за визуелизација.

- Придонес во оспособувањето на помлади наставници и соработници

Досега д-р Дејан Крстев има соработувано со неколку помлади соработници на Машинскиот факултет во научноистражувачката работа.

Наставно-образовна и научноистражувачка дејност

Кандидатот се истакнува со неговиот коректен однос кон колегите со кои соработува. Секогаш и навремено ги исполнува зададените задолженија од наставниот процес. Кандидатот д-р Дејан Крстев е избран како лаборант во 2021 година, учествува во наставно-образовна дејност со помагање и асистирање во наставата на повеќе предмети од прв циклус на Машински факултет.

Исто така, кандидатот има учествувано во изведувањето на настава со реализација на лабораториски вежби под менторство по повеќе предмети на прв циклус студии на Машински факултет и тоа:

- Оперативен менаџмент,
- Модели на оптимизација,
- Човечки ресурси,
- Стратегиски менаџмент,
- Менаџмент на технолошки развој,
- Симулација на обработни процеси,
- Моделирање и симулација 1,
- Моделирање и симулација 2.

Кандидатот д-р Дејан Крстев има забележителни научноистражувачки активности и е автор и коавтор на 52 труда објавени во списанија или презентирани на конференции и работилници. (<https://eprints.ugd.edu.mk/view/creators/Krstev=3ADejan=3A=3A.html>)

Листа на научни трудови објавени во референтни научни публикации (научни списанија и зборници на рецензирани научни трудови презентирани на меѓународни научни академски собири):

НАУЧНИ СПИСАНИЈА

1. Sijce, Miovska and Aleksandar, Krstev and **KRSTEV, Dejan** and Sasko Dimitrov, (2022) BUSINESS PROCESS MODELING, SYSTEM ENGINEERING AND THEIR APPROACH TO ITS APPLICATION IN INDUSTRIAL CAPACITY . Balkan Journal of Applied Mathematics and Informatics, 5 (2). pp. 99-106. ISSN 2545-4803 (https://js.ugd.edu.mk/index.php/bjami/article/view/5274?fbclid=IwAR1wgBIZs71K6HSB2hQ8xpSAWzhKXhH-ntVrw7KEKEpkFLc69ze_XpGYgec)

Во трудот се разгледуваат повеќето претпријатија кој имаат прилично добра идеја за различните деловни процеси кои ги контролираат нивните секојдневни операции. Меѓутоа, кога треба да се погрижат тие процеси постојано да носат оптимални резултати, „прилично добра идеја“ не е доволна. Примарната цел на алатките за моделирање на деловни процеси е да се анализира како стојат работите во моментот и да се симулира како тие треба да се спроведат за да се постигнат подобри резултати.

2. DIMITROV, Sasko and **KRSTEV, Dejan** and KRSTEV, Aleksandar (2022) Matrix method for large scale systems analysis. Balkan Journal of Applied Mathematics and Informatics, 5 (2). pp. 99-106. ISSN 2545-4803 (<https://eprints.ugd.edu.mk/31240/>)

Во рамките на трудот се опишува математичкиот модел на вентил за ослободување на притисокот кој е опишан со голем систем на нелинеарни диференцијални и алгебарски равенки. За да се анализира состојбата на стабилноста на вентилот, неопходна е линеаризација на математичкиот модел и добивање на функцијата за пренос. Добивањето на функцијата за пренос со елиминација на средните параметри е многу сложено, а понекогаш и невозможно. Во овој труд, методот на

матрица на простор на состојба се користи за да се намали големиот систем на равенки и да се добие преносната функција на системот.

3. Sasko DIMITROV, **Dejan KRSTEV**, (2022) “Modelling and Simulation of the Transient Performance of a Direct Operated Pressure Relief Valve”, Magazine of Hydraulics, Pneumatics, Tribology, Ecology, Sensorics, Mechatronics “HIDRAULICA”, pp 75-81 ISSN 1453 – 7303 (<https://eprints.ugd.edu.mk/31241/>)

Во трудот се објаснува хидрауличен систем, вентилот е поврзан барем со цевка на излезот, а на неговиот влез има одреден волумен на компресибилно масло што влијае на квалитетот на минливиот процес. При префрлување на контролниот вентил за насочување во хидрауличниот систем со вентили за ослободување на притисокот со директна работа се јавува минлив процес во кој е можно притисокот да достигне вредности многукратно повисоки од зададената вредност. Ова предизвикува системот да биде преоптоварен со непожелни последици. Овој труд експериментално и теоретски ги испитува транзиентите во хидрауличните системи со овие вентили. Од експерименталните статички карактеристики се определува коефициентот на хидродинамичка сила што делува на капакот на вентилот.

4. **Krstev Dejan**, Krstev Aleksandar (2022) “REVERSE LOGISTICS – POSSIBILITY, EXPECTATION AND SUSTAINABILITY PERSPECTIVES” Vol. 16 No.1: Natural Resources and Technology, December 2021, pp.89-96 ISSN 1857-6966 (<https://eprints.ugd.edu.mk/30416/>)

Во трудот се објаснува сложена за управување поради несигурноста вклучена во опсегот на квалитетни производи, времето за враќање на производот и обемот на враќање на реверзибилната логистика. Целта на реверзибилната логистика (РЛ) е да се намали суровината, материјалот за повторна употреба и да се почитува животната средина, што се вклопува во некои активности и цели на циркуларната економија (ЦЕ), иако во поширок концепт. Реверзибилната логистика е покажана со домашни примери во студија на случај 1 (за пелети) а во студија на случај 2 (за палети), исто така, води до подобра видливост на синџирот на снабдување, што доведува до придобивки. Студиите го истражуваат влијанието што го имаат одлуките донесени во фазите на синџирот на снабдување врз целокупното ниво на „циркуларност“.

5. Todorov, Krste and **Krstev, Dejan** (2021) “Data processing using mathematical models in leather industry. Natural resources and technologies.” 5(15) pp.75-81. ISSN 1857-6966 (<https://eprints.ugd.edu.mk/29549/>)

Во развојот на индустријата на мали и средни претпријатија кои се занимаваат со една од најспецифичните дејности, како што е работата со кожни производи, дава и бара можности за оптимизирање на основните менаџерски активности во работата на една компанија. Денес постојано се генерираат многу податоци кои бараат соодветна обработка и пристап до нив, особено кога станува збор за управување со синџирот на снабдување. Стандардните техники за обработка можеби не ги исполнуваат овие барања. Развојот на информатичката технологија и теоријата на одлуки придонесе за појава на примена на современи-применливи

методи и пристапи за обработка и анализа на податоците. Идентификацијата и анализата на проблемот што треба да се реши, утврдувањето на можните решенија на проблемот, критериумите според кои се оценуваат можните решенија, односно алтернативите и изборот на најдоброто можно решение е процес на одлучување. т.е. процес на одлучување и поради процесот на одлучување произлегува одлуката. Тоа е изборот на најдоброто, од највозможните алтернативни решенија за проблемот како што е проблемот со испорака на специфичен материјал како што е кожата со оглед на квалитетот и цената.

6. Alili Agron and **Krstev, Dejan** (2019) "Using SPSS for research and data analysis." Knowledge – International Journal, 32 (3) pp. 363-368. ISSN 2545-4439. (<https://eprints.ugd.edu.mk/29545/>)

Во трудот се објаснува примената на SPSS анализата. Несомнено е дека бизнисот се потпира многу на компјутерот и техники кои се изучуваат преку науката. Оваа зависност стана толку голема што веќе не е можно да се разберат општествените и здравствените научни истражувања без суштинско познавање на статистиката и без барем некој статистичкиот софтвер. Бројот и видовите на достапни статистички софтверски пакети продолжуваат да растат секоја година. Во овој труд се разгледува софтверскиот пакет SPSS. Софтверскиот пакет SPSS постојано се ажурира и подобрува и така со секоја поголема ревизија доаѓа нова верзија на тој пакет. Податоците можете да ги исцртате во хистограми, распрскувачи и други начини. Можете да комбинирате датотеки, да ги делите датотеките и да ги сортирате датотеките. Можете да ги менувате постоечките променливи и да креирате нови.

7. Nedeva, Biljana and **Krstev, Dejan** (2019) Advanced warehouse technologies – perspectives and possibilities. Knowledge – International Journal, 30 (3).pp. 107-112. ISSN ISBN 2545-4439 (<https://eprints.ugd.edu.mk/29547/>)

Трудот објаснува како се избира и како се создаваат залихите во една фирма. Тука се и нивните перспективи и предности кои може да се добијат од контролата на залихата. Со помош на познати програми за контрола т.е. попознати, како што е ERP. Програмата за симулација започнува со привремена претпоставка дека материјалите потребни за репродукција се достапни во влезните податоци на магацинот. Сите работни налози се обработуваат и се испраќаат до внесот на податоци во магацинот. Програмата ги стартува податоците во моментот на настанување на кој било работен налог во системот во времето потребно за негова реализација и автоматски ги зема предвид приоритетите на секој работен налог. Корисникот има посредно складиште за материјали што овозможува нормално функционирање на производниот процес и оптимално време на снабдување.

8. **Krstev, Aleksandar and Krstev, Dejan and Krstev, Boris and Velinovska, Sladzana** (2018) Data analysis and structural equation modelling for direct foreign investment from local population. Balkan Journal of Applied Mathematics and Informatics (BJAMI), 1 (1). pp. 49-54. ISSN 2545-4803 (<https://eprints.ugd.edu.mk/20358/>)

There is great interest around the world, and lately in our country and facilities associated with industrial heritage to promote direct foreign investment as an attraction for possibly

development. It's very attractive possibility for full affirmation of its valuable heritage. The direct foreign investment (DFI) as a specific development segment mainly standardized diversify the economic offer of offering domestic possibilities a different experience aesthetics of the economy. The direct foreign investment has the potential to improve the social, economic and environmental elements of the local community, as well as to expand the development of state economy growth. Work study examines community support for that development in the context of sustainable development. This topic is interesting for processing because it deals with specific and so far in Macedonia untreated problems and aspects arising from the relationship between the local community and the state efforts for better conditions for development and higher standard.

9. Popandonov, Marjan and **Krstev, Dejan** and Pop-Andonov, Goran and Krstev, Aleksandar and Krstev, Boris (2014) *Можни ресурси за рециклирање од индустриски и електронски отпади со современи технологии*. *Natural Resources and Technologies*, 7 (7). pp. 51-67. ISSN 185-6966 (<https://eprints.ugd.edu.mk/10561/>)

Рециклирањето на индустрискиот отпад и електронскиот отпад се круцијален проблем во идните современи технологии ширум светот. Потребата од метали, развојот на индустриите и огромните потреби од метали за индустријата се предизвик при изнаоѓањето на технологии за употребливи отпади за преработка и производство на метали и други материјали. Индустрискиот отпад (сите примероци на индустриски отпади), особено електронскиот отпад, се можни и соодветни „сурови материјали“ за иднината. Во овој труд ќе бидат прикажани новите трендови и перспективи за повторна употреба на отпадните материјали како можни ресурси за добивање и производство на корисни метали и материјали.

10. **Krstev, Dejan** and Polenakovik, Radmil and Golomeova, Mirjana (2014) *Vehicle routing and scheduling – The traveling salesman problem*. *Mechanical Engineering – Scientific Journal, Proceedings*, 32 (1). pp. 109-117. ISSN 1857 – 5293 (<https://eprints.ugd.edu.mk/29543/>)

The classification of routing and scheduling problems depends on certain characteristics of the service delivery system, such as size of the delivery fleet, where the fleet is housed, capacities of the vehicles, and routing and scheduling objectives. In the simplest case, we begin with a set of nodes to be visited by a single vehicle. The nodes may be visited in any order, there are no precedence relationships, the travel costs between two nodes are the same regardless of the direction traveled, and there are no delivery-time restrictions. In addition, vehicle capacity is not considered. The output for the single-vehicle problem is a route or a tour where each node is visited only once and the route begins and ends at the depot node. The tour is formed with the goal of minimizing the total tour cost. This simplest case is referred to as a traveling salesman problem (TSP). An extension of the traveling salesman problem, referred to as the multiple traveling salesman problems (MTSP), occurs when a fleet of vehicles must be routed from a single depot. The goal is to generate a set of routes, one for each vehicle in the fleet. The characteristics of this problem are that a node may be assigned to only one vehicle, but a vehicle will have more than one node assigned to it. There are no restrictions on the size of the load or number of passengers a vehicle may carry. The solution to this problem will give the order in which each vehicle is to visit its assigned nodes. As in the single-vehicle case, the objective is

to develop the set of minimum-cost routes, where “cost” may be represented by a dollar amount, distance, or travel time. If we now restrict the capacity of the multiple vehicles and couple with it the possibility of having varying demands at each node, the problem is classified as a vehicle routing problem (VRP). In this paper will be presented the TSP procedure for delivery and routing of new product L-carnitine from Koding – Skopje which life development is in the introduction or development phase.

11. Krstev, Aleksandar and Krstev, Boris and Dimitrovski, Darko and **Krstev, Dejan** (2011) Focus and challenge of national applied information systems in production processes or academy and accounting firms. Natural resources and technologies, 5 (5). ISSN 185-6966 (<https://eprints.ugd.edu.mk/3740/>)

In this paper, focus and challenge of information systems and technologies in production processes or academic and accounting firms will be shown. In modern conditions the successful implementation of goals and objectives of the enterprise or society depends on its effective use of information resources. Information resources are the basis for activities of enterprises and other subjects in EU, the availability of information resources and opportunities and implementation of information innovation, streamline information flows of the company, different firms and effective information interaction with market players as Bulgaria, Ukraine, Macedonia, Serbia, Croatia, etc.

12. Krstev, Aleksandar and Donev, Aleksandar and **Krstev, Dejan** (2011) Information technology in logistics: advantages, challenges and opportunity for efficiency from problem decision in diferent activities. Natural resources and technologies, 5 (5). ISSN 185-6966 (<https://eprints.ugd.edu.mk/3739/>)

Informatisation, internationalisation and globalisation have dramatically changed retail sector; speeding up the retail processes, creating new sale formats, fastening the increase of income etc. During the last decade, logistics influenced the development of retailing by cutting down costs and increasing the service quality level. The main purpose of this paper is to give a comprehensive review of affected logistics and directly caused changes in Western Balkan retailing and global market as well. Among the given trends there is a shorter product life cycle that induces some changes among supply chain members in order to keep profitability, innovation in technology field, RFID technology, automated commercial processes, and EDI system communications.

Based on the analysis of relevant foreign literature in the area of logistics, distribution and supply chain management, this paper gives a review of new market trends that have an important impact on logistics. Special attention is given to more significant usage of concept of managing, developing high quality products and services, minimising stock within supply chain and making sustainable, competitive and strategic advantage of a company by it.

13. Krstev, Boris and Krstev, Aleksandar and **Krstev, Dejan** (2011) The producing of lead and elemental sulfur by new technologies from galenite ores. PEIB '11, 7 (1). (<https://eprints.ugd.edu.mk/3754/>)

These investigations have developed an effective hydrometallurgical method to recover high-purity lead metal and elemental sulfur from simulated galena synthetic mixures

eliminating sulfur gases and lead emissions, in contrast to the current high-temperature smelting technology. The method consists of different operations: oxidative leaching with production of solution with residue containing elemental sulfur., electrowinning by the solution with metal production. The obtained results determined the optimal parameters for possible processing of natural domestic galena ores.

КОНФЕРЕНЦИИ

14. **Krstev Dejan**, Krstev Aleksandar, Dimitrov Sashko (2021) "DATA PROCESSING USING HIERARCHICAL PROCESS IN REAL CIRCUMSTANCES", XII International conferences of INFORMATION TECHNOLOGY AND DEVELOPMENT OF EDUCATION ITRO 2021, Zrenjanin, November 2021, pp.104-108 ISBN: 978-86-7672-351-5 (<https://eprints.ugd.edu.mk/30457/>)

In the development of the industry of small and medium enterprises that are involved in one of the most specific activities such as working with products, materials it gives and seeks opportunities for optimizing the basic management activities in the work of a company. Today, many data are constantly generated that require proper processing and access to them, especially when it comes to supply chain management and business logistics. Standard processing techniques may not meet these requirements. The development of information technology and decision theory has contributed to the emergence of the application of modern-applicable methods and approaches to data processing and analysis. The way of processing data from traditional data processing tools are adapted for data processing and with the help of tools and mathematical methods that enable processing and analysis of big data that depend on several criteria such as time, resources, quality, and distance when it is about delivering work material. The identification and analysis of the problem to be solved, the determination of the possible solutions to the problem, the criteria according to which the possible solutions are evaluated, i.e., the alternatives and the choice of the best possible solution is a decision-making process. It is the choice of the best, from the most possible alternative solutions to the problem such as the problem of delivery of specific material such as leather considering the quality and price.

15. Dimitrov Sashko, **Krstev Dejan**, Krstev Aleksandar (2021) "IMPROVEMENT OF THE STATIC CHARACTERISTICS OF PILOT OPERATED PRESSURE RELIEF VALVES", XII International conferences of INFORMATION TECHNOLOGY AND DEVELOPMENT OF EDUCATION ITRO 2021, Zrenjanin, November 2021, pp.147-155 ISBN: 978-86-7672-351-5 (<https://eprints.ugd.edu.mk/30456/>)

Theoretical and experimental investigations of the static characteristics of pilot operated pressure relief valves is presented in this article. A mathematical model of pressure drop vs. flow depending of pilot operated pressure relief valves is developed. An experimental test stand was created for experimental investigation of the static characteristics and compared with each other which confirm the mathematical model. The results of solving the mathematical model and experimental investigation are presented in few diagrams. A few directions for improvement of the static characteristics are given, especially at the moment of opening of the main valve. Advantages and disadvantages of the static characteristics are discussed.

16. **Krstev Dejan**, Dimitrov Sashko, Krstev Aleksandar (2021) "VEHICLE ROUTING PROBLEM WITH DISTANCE CONSTRAINTS AND CLUSTERING USING MATLAB", XII International conferences of INFORMATION TECHNOLOGY AND DEVELOPMENT OF EDUCATION ITRO 2021, Zrenjanin, November 2021, pp.200-205 ISBN: 978-86-7672-351-5 (<https://eprints.ugd.edu.mk/30454/>)

The problem of designing routes for vehicles that should supply different customers with defined locations and specific demand from a single or various depots is known as the vehicle routing problem. The main objective in this case is minimizing the total cost of delivery or maximizing the profit while taking into consideration some constraints that vary from a case to another. In this paper I am going to define this problem, present a mathematical model to describe it, talk about the existing solutions to solve it, and use different tools to solve a real VRP of a company in tangier.

17. Krstev, Aleksandar and **Krstev, Dejan** and Polenakovik, Radmil (2020) Modelling with Structural Equation Modelling – Application and Issues. In: XI International Conference of Information Technology and Development of Education ITRO 2020, 30 Oct 2020, Republic of Serbia. (<https://eprints.ugd.edu.mk/30418/>)

Structural equation modeling (SEM) is a comprehensive statistical modeling tool for analyzing multivariate data involving complex relationships between and among variables. SEM surpasses traditional regression models by including multiple independent and dependent variables to test associated hypothesizes about relationships among observed and latent variables. SEM explain why results occur while reducing misleading results by submitting all variables in the model to measurement error or uncontrolled variation of the measured variables. SEM provides a way to test the specified set of relationships among observed and latent variables as a whole, and allow theory testing even when experiments are not possible. Structural Equation Modeling (SEM) is a powerful collection of multivariate analysis techniques, which specifies the relationships between variables through the use of two main sets of equations: Measurement equations and structural equations. Measurement equations test the accuracy of proposed measurements by assessing relationships between latent variables and their respective indicators. The structural equations drive the assessment of the hypothesized relationships between the latent variables, which allow testing the statistical hypotheses for the study. Additionally, SEM considers the modeling of interactions, nonlinearities, correlated independents, measurement error, correlated error terms, and multiple latent independents each measured by multiple indicators. In this paper will be presented application of relationship between reverse logistics and circular economy using some SEM fit indexes. The process of validating the measurement model requires testing each cluster of observed variables separately to fit the hypothesized CFA model. The statistical test uses the most popular procedures of evaluating the measurement model: Chi-square CMIN (χ^2), Goodness-of-Fit Index (GFI), and Percent Variance Explained.

18. Krstev, Aleksandar and Serafimovski, Dalibor and Cekerovski, Todor and Cekerovska, Marija and **Krstev, Dejan** (2020) Application of Sensors in Real Time Systems for Optimizing Industrial Processes in Chemical Facilities. In: XI International Conference of Information Technology and Development of Education ITRO 2020, 30 Oct 2020, Republic of Serbia. (<https://eprints.ugd.edu.mk/30417/>)

An overview of automated industrial plant and its architecture has been discussed briefly in this paper. The content herein is very educative at introductory stage to concept of Industrial Automation and Informative about latest trends in Industrial Automation. Mineral processing and Chemical producers are building new plants need technologies that help them get the most from their assets, while also helping them minimize safety and quality risks. The ability to accurately measure valuable elements and minerals is critical for optimizing processes. Our emerging sensor technologies provide real-time results, opening up opportunities to make significant cost savings and increase mineral recovery rates.

19. Krstev, Aleksandar and **Krstev, Dejan** and Krstev, Boris and Alili, Agron and Nedeva, Biljana and Todorov, Krste (2019) Effective Teams for Sustainable Projects– Principles, Practice and Presentation. In: ITRO 2019, Zrenjanin, Republic of Serbia. Pp. 156-160 ISBN: 978-86-7672-322-5 (<https://eprints.ugd.edu.mk/22294/>)

The supply chain consists of all involved parties, directly or indirectly, in fulfilling the customer's request. The supply chain not only includes the manufacturer and suppliers, but also the logistical activities, carriers, warehouses, stores and customers themselves. Within each organization, the supply chain includes all the functions associated with receiving and filling customer requirements. These functions constitute, but are not limited to, the development of a new product, but also marketing, distribution, finance, and customer service. Global supply chains are evolving into dynamic process networks, in which companies are linked in new combinations based on the context and requirements of individual projects. This dynamic environment requires effective communication, team management and continuous cyclical innovation. The human factor and effective teams in these areas are critical to the effective development of global process networks. The importance of human resources has increased significantly as a result of new places and role in all sectors of society. They are rational, human beings, working with all activities and whose results depend on knowledge, abilities, skills, and motivation. The goal of the paper is to draw attention to the importance of human factors and effective teams in the operation of each enterprise and the necessity of creating a structure of enterprises that will take care of the organizational culture in accordance with the available human resources. This paper also provides an overview of the structure of global supply chain networks and human factors and dimensions that affect their success.

20. Krstev, Aleksandar and **Krstev, Dejan** and Krstev, Boris and Milosevski, Goran (2019) Human Resources Evidence and Management Software's. In: ITRO 2019, Zrenjanin, Republic of Serbia. pp.116-120 ISBN: 978-86-7672-322-5 (<https://eprints.ugd.edu.mk/22284/>)

Human resource records include all the activities that managers undertake to attract and retain employees and ensure that they perform high-level work and contribute to the achievement of organizational goals. These activities shape the organization's human resources management system, a system that has five main components: management and selection, training and development, upgrading of work and feedback, salary and benefits and employee relations. Human resource record is the process by which managers design the components of the human resource management system that are mutually consistent, with other elements in the organizational architecture and with

the organization's strategy and goals. The purpose of human resources records is to build a human resource management system that promotes the efficiency, quality and innovation of the organization and the needs of consumers - four carrier blocks of competitive advantage. The human resource record and management software is divided into several modules: systematization, management and selection, personal records freelance cooperation, records of employees' documents, career, absences, performance measurement and reviews.

21. **Krstev, Dejan** and Polenakovik, Radmil (2018) Dynamic systems in the supply of pellets and distribution of the pellet production process. In: 4th Olympus International Conference on Supply Chains (4th Olympus ICSC). (<https://eprints.ugd.edu.mk/29552/>)

System archetypes are models of behavior of a system, understood as generic structures or as an overview of typical systems. There are recognized structures that show repetition in many different situations. Archetypes are depicted as appearances of common combinations through amplifying and balancing feedback loops. They are constantly used to facilitate a quick understanding of the system and their knowledge and already learned features, their insight and insight. As analytical features, they help people change their thinking for a much larger systemic perspective to understand a phenomenon or dynamic, and in some situations when real corrective action is not taken.

22. Krstev, Aleksandar and Beqiri, Lavdim and Krstev, Boris and **Krstev, Dejan** and Zlatev, Darko and Donev, Aleksandar (2018) Application of Machine Learning in Software Engineering. In: IX International Conference of Information Technology and Development of Education 2018 (ITRO 2018), 29 June 2018, Zrenjanin, Republic of Serbia. (<https://eprints.ugd.edu.mk/20359/>)

The purpose of the software manufacturing industry is to produce high-quality applications that meet the requirements of customers and users who live long, that are easy to use and have as few errors as possible. Building such an ideal software is a relatively difficult process. To be successful in this industry, a specific discipline is needed when designing and developing software. There is therefore an engineering perspective on the whole process. Many companies and individuals still develop software chaotic, based on a poor analysis, which leads to unsuccessful outcomes such as software failures that fail to meet the expected requirements. Software Engineering applies to optimize these phenomena.

23. Krstev, Aleksandar and **Krstev, Dejan** and Polenakovik, Radmil and Krstev, Boris (2018) Decision Making Using Sequential Equation Modelling Applied for Pellet Production. In: IX International Conference of Information Technology and Development of Education 2018 (ITRO 2018), 29 June 2018, Zrenjanin, Republic of Serbia. (<https://eprints.ugd.edu.mk/20360/>)

By means of learning experiences, students are expected to know, understand, and be able to demonstrate certain skills, behaviors, and attitudes. These learning experiences have been defined and described by several different learning theories. The 21st century the most common learning theories have been behavioral and cognitive learning theories. Behavioral learning theorists explain learning as relatively permanent change in "hierarchical, observable, and measurable behaviors" whereas cognitive learning

theorists explain learning “as an internal change in mental associations”. The pellet production (PP) has the potential to improve the social, economic and environmental elements of the local community, as well as to expand the development of state economy growth. Work study examines community support for that development in the context of sustainable development. This topic is interesting for processing because it deals with specific and so far in Macedonia untreated problems and aspects arising from the relationship between the local community and the state efforts for better conditions for development and higher standard

24. **Krstev, Dejan** and Krstev, Aleksandar and Minovski, Robert and Krstev, Boris (2017) Exploring Educational Dilemmas Using the System Dynamics and Archetypes. In: ITRO 2017, 22 June 2017, Zrenjanin, Serbia. (<https://eprints.ugd.edu.mk/18341/>)

This article describes how the systems archetype ‘Drifting Goals’ can be used in the classroom to explore ethical dilemmas. Systems archetypes are systems thinking tool that provide a framework that shifts the focus from seeing ethical dilemmas as stemming from the acts of individuals to a focus on the systemic interrelationships and interactions within the organization. The use of the ‘Drifting Goals’ archetype provides a pedagogical approach that exposes students to innovative ways of thinking about ethical problems and the structures that create them.

A common approach to teaching business ethics is to give students case studies of “ethical themes” or ethical breaches in workplaces and organizations. As is appropriate in the study of ethics or education, these focuses on individual values and decision making. The rationale for this approach is that this will give students the tools for improved ethical behavior in the workplace. Essentially it is a focus on the role of the individual in business ethics and the assumption underlying this approach is that educating individuals to be ethical will lead to ethical behavior in the workplace. An additional strategy is to develop and explore the structural and systemic factors that lead to ethical breaches. This approach explores the tension between the role of the individual and the role of organizational structure in determining behavior.

25. Krstev, Aleksandar and Krstev, Boris and Kokotov, Mlle and Nushkova, Simona and **Krstev, Dejan** and Penova, Marija (2016) Cable Distribution systems - an essential element of the global information society. In: ITRO 2016, 10 June 2016, Zrenjanin, Serbia. (<https://eprints.ugd.edu.mk/16065/>)

Not long ago, before the advent of cable operators, here in Macedonia, especially in the smaller towns in this area in the developed countries was overwhelming. In Shtip were able to follow only two or three programs in the Macedonian Television. Later, in the nineties of the last century, there have been two more programs to private local television stations. Admission to these programs is done through external antennas. Nevertheless, due to the specific configuration of the terrain and tall buildings, it was not possible quality reception of TV programs in all parts of the city. On the other hand, this way of receiving television programs by external antennas (and several antennas for each family) and brings other problems. Among other things, in terms of aesthetic appearance of buildings resembling a “forest” of antennas. With the advent of cable operators, this picture changes significantly. At the beginning of its development, the cable operators

only offered a service to its customers - analog TV. Today, cable operators offer more services, ie services, and are called Multi Service Operators (Multi service operator - MSO). They invest in quality and expensive equipment that receive and distribute to end users a number of TV and radio channels channels with high quality. Users however, relatively inexpensive monthly fee can enjoy the quality of TV channels, radio channels, internet, telephony and other interactive services. Today through KDS can carry more than 70 (seventy!) Analog television and radio programs as well as a much larger number of digital TV and radio channels. Additionally through KDS enables fast digital communication, access to high-speed, broadband Internet and fixed telephony. Modern cable distribution systems represents a form of electronic communication networks. Electronic communications networks other than cable can be partially or completely wireless.

26. Krstev, Aleksandar and **Krstev, Dejan** and Kokotov, Mile and Krstev, Boris and Nuskova, Simona and Penova, Marija (2016) Design of Information Systems monitoring, record and control. In: ITRO 2016, 10 June 2016, Zrenjanin, Serbia. (<https://eprints.ugd.edu.mk/16066/>)

Abstract - Logistics management information system is essential to provide management with the knowledge to exploit new markets, make changes in the design of packaging, make a right choice in store to raise or reduce inventory, to determine the profitability of customers and establish profitable level of customer service, choose transporter and determine which system of processing orders will be automated. To bring these strategic decisions management must know how you are changing costs and revenues dependent on appropriate alternatives would be selected. An advanced system for order processing is able to provide much information to different departments in the organization. Terminals for access to data can be made available to logistics management, production and marketing department. The system can provide a variety of regular reports and reports on the current situation upon request. The design of logistics information systems begins by examining consumer needs and determination of standards features to meet those needs. Next you need to make is the need for consumers to compare with the current capabilities of the company, and to explore current operations in order to identify areas that require monitoring. It is important at this level to interview different levels of management. In this way the company can determine what strategic and operational decisions are made and what information and in what form is needed for decision making. The next step is an examination of current possibilities for data processing companies in order to determine what changes are needed. Finally, the database could be created and the reports should be designed taking into account management costs and Uses of each report. Good system design must be of benefit to management and to provide movement of information from where they are collected to the appropriate level of management. Phones, and teleprinter connections between computers are just a few of the materials which can transfer information. For additional information processing computerized information system must possess capabilities to store data.

Data of logistics information systems may come from multiple sources from which the most important are the following: System processing orders; Statements of the company; Data from the farm; Data from management.

27. **Krstev, Dejan** and Pop-Andonov, Goran and Krstev, Aleksandar and Dzidrov, Misko and Krstev, Boris (2014) The intelligent transport systems – Risks and Benefits. XXII INTERNATIONAL SCIENTIFIC-TECHNICAL CONFERENCE, 22 (9). pp. 42-45. ISSN 1310 – 3946 (<https://eprints.ugd.edu.mk/10563/>)

Effective deployment of ITS technologies depends in part on the knowledge of which technologies will most effectively address the issues of congestion and safety. Thus, it is important to understand the benefits or risks of both existing and emerging technologies. Based on documented experience locally and throughout the country, ITS deployments in urban areas have the potential to offer the following benefits: Arterial management systems can potentially reduce delays with the implementation of advanced control systems and traveler information dissemination. Freeway management systems can reduce the occurrence of crashes, increase capacity, and decrease overall travel times. Freight management systems reduce costs to motor carriers with the implementation of the commercial vehicle information systems and networks. Transit management systems may reduce travel times and increased reliability with automatic vehicle location and transit signal priority implementation. Incident management systems potentially reduce incident duration and offer numerous other benefits. There is a wide range of benefits that can be obtained from ITS deployments. For example, fuel consumption, travel time, and delay can be reduced. ITS deployments can also result in higher travel speeds, improved traffic flow, and more satisfied travelers for all modes.

28. **Krstev, Dejan** and Pop-Andonov, Goran and Krstev, Aleksandar and Dzidrov, Misko and Krstev, Boris and Pavlov, Sashe (2014) The multiple travelling salesman problem and vehicle routing problem for different domestic drinks. International Journal for Science, Technics and Innovations for the Industry MTM (Machines, Tecnologies, Materials), 22 (3). pp. 96-98. ISSN 1310 – 3946 (<https://eprints.ugd.edu.mk/10564/>)

The MTSP is a generalization of the traveling salesman problem where there are multiple vehicles and a single depot. In this problem, instead of determining a route for a single vehicle, we wish to construct tours for all M vehicles. The characteristics of the tours are that they begin and end at the depot node. Solution procedures begin by “copying” the depot node M times. The problem is thus reduced to M single-vehicle TSPs, and it can be solved using either the nearest neighbor or Clark and Wright heuristics. The classic VRP (Vehicle Routing Problem) expands the multiple traveling salesman problem to include different service requirements at each node and different capacities for vehicles in the fleet. The objective of these problems is to minimize total cost or distance across all routes. Examples of services that show the characteristics of vehicle routing problems include different Services deliveries, public transportation “pickups” for the handicapped, and the newspaper delivery problem etc. In this paper will be present using of the principles of MTSP and VRP for optimal solution of vehicle routing for domestic energetic drinks and sparkling water in PET bottles in the different parts of the Republic of Macedonia

29. **Krstev, Dejan** and Pop-Andonov, Goran and Krstev, Aleksandar and Dzidrov, Misko and Krstev, Boris and Pavlov, Sashe (2014) The using of solver software and vehicle routing for the traveling salesman problem. International Journal for Science, Technics and Innovations for the Industry MTM (Machines, Tecnologies, Materials), 22 (9). pp. 38-42. ISSN 1310 – 3946 (<https://eprints.ugd.edu.mk/10562/>)

30.

The traveling salesman problem (TSP) is one of the most studied problems in management science. Optimal approaches to solving traveling salesman problems are based on mathematical programming. But in reality, most TSP problems are not solved optimally. When the problem is so large that an optimal solution is impossible to obtain, or when approximate solutions are good enough, heuristics are applied. Two commonly used heuristics for the traveling salesman problem are the nearest neighbor procedure and the Clark and Wright savings heuristic. In this paper will be present using of the solver software and principles of TSP for optimal solution of vehicle routing for domestic bottled water and different juices in the different parts of the Republic of Macedonia.

31. Pop Andonov, Goran and Stoilova, Svetla and Mirakovski, Dejan and Sovreski, Zlatko and **Krstev, Dejan** and Panov, Zoran (2013) Study of rail transport along the Trans-European corridors of the Republic Macedonia. In: Scientific conference on Aeronautics, Automotive and Railway Engineering and Technologies, 16-18 Oct 2013, Sofia, Bulgaria. (<https://eprints.ugd.edu.mk/12544/>)

In the study has been done a research on the Trans – European corridors that are passing try the Republic of Macedonia – N8 (East – West) corridor connecting the Adriatic with the Balkan region and sides of the Black Sea and corridor N10 (North – South), connecting parties of Western Europe with Greece. These corridors are part of the program of the Macedonian government to build missing parts of railway infrastructure.

32. Krstev, Aleksandar and Krstev, Boris and Zdravev, Zoran and **Krstev, Dejan** and Gocev, Zivko and Zivanovic, Jordan (2013) Information technologies and using of the software tools for the copper kinetic flotation modelling. In: Material, Technology, Education, Security - MTM 2013, 27-28 June 2013, Veliko Tarnovo, Bulgaria (<https://eprints.ugd.edu.mk/6839/>)

To improve kinetic flotation models, many first-order flotation kinetics models with distributions of flotation rate constants were redefined so that they could all be represented by the same set of three model parameters. As a result, the width of the distribution become independent of its mean, and parameters of the model and the curve fitting errors, became virtually the same, independent of the chosen distribution function. In our case, investigations of the chalcopyrite ores are carried out using the Classical model, Klimpel Model and Fully mixed model. According to the experimental results obtained in laboratory, the Classical model is most appropriate for presentation of kinetic flotation, especially by means of MATLAB modeling.

33. Krstev, Boris and Krstev, Aleksandar and Gocev, Zivko and Zdravev, Zoran and **Krstev, Dejan** and Zivanovic, Jordan (2013) Using applicative software and software tools for the performance of leaching and bio-leaching. In: Material, Technology, Education, Security - MTM 2013, 27-28 June 2013, Veliko Tarnovo, Bulgaria. (<https://eprints.ugd.edu.mk/6840/>)

The refractory or low grade lead/zinc domestic ores in Republic of Macedonia are investigated by conventional separation technology or flotation separation. In the mean time, investigations are directed to the new possibilities of leaching by microorganisms – bioleaching. The paper is result of these technologies and investigations carried out for recovery of in the mentioned ores. Using Simplex EVOP and computer program Multisimplex performances are appropriate and most acceptable and excellent way for presentation of the leaching and bioleaching.

34. Krstev, Boris and Krstev, Aleksandar and **Krstev, Dejan** and Gocev, Zivko and Zivanovic, Jordan and Jovanovski, Vlatko (2013) The efficiencies and selectivity indexes – the possibility of lead presentation and application of useful programmes. In: Material, Technology, Education, Security - MTM 2013, 27-28 June 2013, Veliko Tarnovo, Bulgaria. (<https://eprints.ugd.edu.mk/6841/>)

The presentation and comparative analysis and the tabular and figurative shown of the techno indicators of the concentration, techno efficiency and economic efficiency for the treated ores in mineral processing technologies lead/zinc-galena/sphalerite ores in Sasa mine in the Republic of Macedonia, their correlation and other characteristics using descriptive statistics of experimental/industrial results with Microsoft Excel 2010. The presentation of the selectivity indexes for poly metallic lead and zinc bearing ores from domestic deposits as an appropriate way for technological indication.

35. Krstev, Aleksandar and Krstev, Boris and Zdravev, Zoran and **Krstev, Dejan** and Zivanovic, Jordan and Gocev, Zivko (2013) The optimization and mathematical models determination of copper recovery – the precondition for improvement of recovery in Bucim copper mine. In: BMPC 13, 12-16 June 2013, Sozopol, Bulgaria. (<https://eprints.ugd.edu.mk/6803/>)

The improvement in the chalcopyrite copper Bucim mine are gone forward to renewed reagent regime, including and involving new reagents for increase recovery of copper and gold. The optimization and mathematical linear models using gradient method Box and Wilson are good example for improvement of industrial recoveries in flotation circuit. In this paper is shown optimization techniques, formatting the mathematical model and adequate model for carried out investigations. Tables and figures will show the optimal quantity in reagent regime (collectors), particle size, flotation time I rougher flotation, conditioning time etc.

36. Krstev, Boris and Krstev, Aleksandar and Golomeov, Blagoj and Golomeova, Mirjana and Sala, Ferat and Gocev, Zivko and Zivanovic, Jordan and **Krstev, Dejan** (2013) The performance of leaching and bio-leaching from sulphide ores using SEVOP. In: BMPC 2013, 12-16 June 2013, Sozopol, Bulgaria. (<https://eprints.ugd.edu.mk/6804/>)

The refractory or low grade copper chalcopyrite ores or galena/sphalerite domestic ores in Republic of Macedonia are investigated by conventional copper flotation and selective flotation for galena/sphalerite. In the meantime, investigations are directed to the new possibilities of leaching by microorganisms – bioleaching. The paper is result of these technologies and investigations carried out for recovery of in the mentioned ores. Using Simplex EVOP and computer programme. Multisimplex the tabular and especially graphic performances are most acceptable and excellent way for presentation of the leaching and microorganisms – bioleaching.

37. Danevski, Tome and Sala, Ferat and Krstev, Boris and Krstev, Aleksandar and Golomeova, Mirjana and **Krstev, Dejan** and Golomeov, Blagoj (2013) The recycling technology – trend and challenge for non-waste technologies. In: BMPC 2013, 12-16 June 2013, Sozopol, Bulgaria. (<https://eprints.ugd.edu.mk/6805/>)

In a world that's continuously moving forward, everyone is working to create the next up-and-coming product with long life. Beyond cars and gadgets, the race for the greatest new technology is a constant challenge in the recycling industry. Many enterprises, companies, scientists, and environmental groups are working to construct better recycling processes and machines, as well as create new systems for previously non-recyclable materials. In the Balkan countries, recycling technology is a new direction in decision of obtaining new possibility for better future using secondary materials and other raw materials. In this paper will be present current and recent activities for recycling technology.

38. Krstev, Boris and Krstev, Aleksandar and **Krstev, Dejan** (2012) The recent trends and perspectives of leaching or bioleaching from nickel oxidized ores. MTM '12. ISSN 1313-0226 (<https://eprints.ugd.edu.mk/3760/>)

The refractory or low grade nickel oxidized domestic ores (laterites) in Republic of Macedonia are investigated by conventional magnetic separation technology or segregation-flotation-magnetic separation, or production and smelting to ferronickel. In the mean time, investigations are directed to the new possibilities of leaching by microorganisms – bioleaching. The paper is result of these technologies and investigations carried out for recovery of in the mentioned ores. The average recoveries from leaching were cca 87-90% for nickel and the average recoveries from bioleaching were cca 93-95% for nickel.

39. Krstev, Boris and Krstev, Aleksandar and **Krstev, Dejan** and Vuckovski, Zoran and Vuckovski, Goce and Danevski, Tome (2012) The recovery of the biomass waste for industrial pellets by recycling. MTM '12. ISSN 1313-0226 (<https://eprints.ugd.edu.mk/3759/>)

The biomass as an organic product which may be used as a fuel - biofuel or the raw material in the industry. The bio-fuel may be occurred as a plant or animal origin. These may be used by their direct combustion. The most effectively usefull method for biomass utilization is finalization in the pellet product as combustion product. The pellets have had appropriate parameters with geometry, caloric power, ash and dust. These wood products are rescent fuels produced by wood waste.

40. **Krstev, Dejan** and Krstev, Aleksandar and Krstev, Boris (2012) Application of the multimedia for web page. Trans\$Motoauto '12. pp.189-191 ISSN 1310-3946 (<https://eprints.ugd.edu.mk/3761/>)

Multimedia has become an inevitable part of modern life where we meet some day presentations, web pages done with many different multimedia applications, etc.. So the evolution of the Internet technologies has increased demand for multimedia content. This trend is growing strong and it is quite reasonable if we compare how quickly and simply getting the information from the Internet than any other media. Twentyfour - 24 hours a day, Web pages are available for anyone who wants to get current information. Generally speaking, Web pages available to us all every time we use them to display, introduction of all cultural and national monumentsand heritage of our country. So we think that by making the web site has become a Bargala is one step more in discovering the treasures and the national heritage in the Republic of Macedonia.

41. **Krstev, Dejan** and Krstev, Aleksandar and Krstev, Boris and Trajko, Elton (2012) Logwin AG as an example for successful transport logistics. *Trans\$Motoauto* '12. pp.189-191 ISSN 1310-3946 (<https://eprints.ugd.edu.mk/3762/>)

The logistics is the science which is based on the investigations in the fields with support for system functionality with simple aim to realize their goals, functions and operations. It's multi-disciplinary area which provide the knowledge and realization of the approaching in: Information technologies, Operation investigations, System theory, Management theory and organization etc. In the trend of the modern operativity it's known that logistics is the suma of activities which have had an aim to deal faster, better, more quality Just in time. The logistics consist increasement of working efficiency with acceleration of the circulation of the the working means. This aim is realized by two ways: with decreasing of the average arranged time and by decreasing of the average suma of the arranged means. The logistics as a dealing function has accepted all needed deals with complex preparation and realization of the place and time transformation for the goods and knowledges. The logistics is directed for useful of the human resources and means with simple goal to put the goods and products for the market just in time, on the real place, with the needed quantity, quality and prize with exact information for these products. Most important is minimum costs and optimization for approaching of the much more profitability.

42. Krstev, Aleksandar and Krstev, Boris and **Krstev, Dejan** and Vuckovski, Zoran (2012) The technical and economic efficiency in the mineral processing for lead-zinc and copper ores by Microsoft excel. In: MTM '12, September 2012, Varna, Bulgaria (<https://eprints.ugd.edu.mk/3758/>)

The comparisons between economical and technical efficiency for lead flotation indicators, zinc flotation indicators in Sasa mine, Toranica and Zletovo mine. The comparisons for economic and technical efficiency for copper flotation indicators in Bucim mine. The possibility of equaled between both efficiencies for flotation indicators from mentioned mines using Microsoft Excel 2010.

43. Krstev, Aleksandar and Krstev, Boris and Golomeov, Blagoj and Golomeova, Mirjana and **Krstev, Dejan** (2011) The choice between preparation of elemental lead or lead powder from galena concentrates from FYROM mines. MTM '12. (<https://eprints.ugd.edu.mk/3757/>)

Processing of the galena concentrates is developed as an effective low-temperature leaching-electrowining method to produce Pb metal and elemental sulfur from galena concentrates. The method reduces Pb emissions and totally eliminates the formation of sulfur gases. The elemental S produced is more economical to store and ship than the sulfuric acid (H₂SO₄) generated by the high-temperature smelting process. This hydrometallurgical method consists of leaching galena concentrates in waste flu silicic acid or flu boric acid (H₂SiF₆ - HBO₄) with oxidants at 95o, electrowinning the (PbSiF₆) solution at different To to produce 99,99%Pb metal, and solvent extraction to recover S, leaving a residue containing eventually present Cu, Ag, and other metal values. Hence, a new approach of preparing PbSO₄ from galena concentrates in the sulfuric acid (H₂SO₄) and ferric chloride media coupled with selective purification and chemical sedimentation was proposed.

44. Krstev, Aleksandar and Krstev, Boris and **Krstev, Dejan** (2011) Computer presentation of equipments and devices by mathematical and software programmes methods. Trans\$Motoauto. (<https://eprints.ugd.edu.mk/3751/>)

In this paper mathematical methods and optimization tools that make possibilities for appropriate, fast and sure presentation of some complex circuits in the mineral processing technologies will be shown. Lagrange multipliers include the analytical methods of optimization, the constraints that appear in the form of equations. Such methods of optimization, in principle, determine or define the possible location of optimum, only stationary points, while discontinuous and border points must specifically to explore. The nature of stationary points are then examined using the conditions satisfied, whenever possible. In any particular case must be made mutually comparing the values of all local optimumi to obtain the final optimum. Lagrange multipliers represent a simple procedure, which found great use in solving problems in the field of optimization.

45. Krstev, Boris and Krstev, Aleksandar and **Krstev, Dejan** (2011) The application of appropriate information systems in different processes. Trans\$Motoauto. (<https://eprints.ugd.edu.mk/3750/>)

In this paper will be shown the role of information systems and technologies in production processes in the EU members countries and candidates members for EU. In modern conditions the successful implementation of goals and objectives of the enterprise depends on its effective use of information resources. Information resources are the basis for activities of enterprises in EU, they define their strategic success. Information support of the enterprise depends not only on the availability of information resources and opportunities and implementation of information innovation, streamline information flows of the company, the issues of its effective information interaction with market players. Information support of the enterprise depends not only on the availability of information resources and opportunities and implementation of information innovation, streamline information flows of the company, the issues of its effective information interaction with market players as Bulgaria, Ukraine, Macedonia, Serbia, Croatia etc.

46. Krstev, Boris and Krstev, Aleksandar and **Krstev, Dejan** (2011) The appropriate logistics and business informatics in local educational environment. Trans&Motoauto (<https://eprints.ugd.edu.mk/3749/>)

In this paper will be shown the general concept of the techno-economical development in Western Balkan countries (esspecially in R.Macedonia), as a result of the closed privatization and including the direct investment in the field of education, economy and other parts of interest. An explanation of the state and public legislative in the high education (Bologna, EKTS, Curriculum of Business Informatics, Informatics and IS, Business Logistics), the economy standards and laws, forecasting of new technologies, environmental aspects, production of health foods.

47. Krstev, Aleksandar and Jovanovski, Vlatko and Krstev, Boris and **Krstev, Dejan** (2011) Information technology in logistics: advantages, challenges and opportunity for efficiency from problem decision in different activities. In: SGEM 2011, Albena, Bulgaria. (<https://eprints.ugd.edu.mk/3685/>)

Informatisation, internationalization and globalization have dramatically changed retail

sector; speeding up the retail processes, creating new sale formats, fastening the increase of income etc. During the last decade, logistics influenced the development of retailing by cutting down costs and increasing the service quality level. The main purpose of this paper is to give a comprehensive review of affected logistics and directly caused changes in Western Balkan retailing and global market as well. Among the given trends there is a shorter product life cycle that induces some changes among supply chain members in order to keep profitability, innovation in technology field, RFID technology, automated commercial processes, and EDI system communications.

48. Krstev, Aleksandar and Krstev, Boris and Vuckovski, Zoran and Vuckovski, Goce and **Krstev, Dejan** (2011) The application of the information systems with possibility and participation in some industry processes. In: The XIth national conference with international participation of the open and underwater mining of minerals, June 2011, Varna, Bulgaria. (<https://eprints.ugd.edu.mk/4188/>)

In this paper the application and the role of information systems and technologies in production processes in the EU members countries and candidates members for EU will be shown. In modern conditions the successful implementation of goals and objectives of the enterprise depends on its effective use of information resources. Information resources are the basis for activities of enterprises in EU, they define their strategic success. Information support of the enterprise depends not only on the availability of information resources and opportunities and implementation of information innovation, streamline information flows of the company, the issues of its effective information interaction with market players as Bulgaria, Ukraine, Macedonia, Serbia, Croatia etc.

49. Krstev, Boris and Golomeov, Blagoj and Krstev, Aleksandar and Vuckovski, Zoran and Vuckovski, Goce and **Krstev, Dejan** (2011) The descriptive statistics for the input parameters in the new selective galena and sphalerite flotation in Sasa mine, Macedonia. In: The XIth national conference with international participation of the open and underwater mining of minerals, June 2011, Varna, Bulgaria. (<https://eprints.ugd.edu.mk/4191/>)

In this paper the descriptive statistics of the obtained results in the selective galena and sphalerite flotation from the Sasa mine, Macedonia will be shown. The consumption of the flotation reagents, bails and rods grinding media in the flotation flowsheet, lead and zinc feed contents, lead and zinc concentrate contents, the appropriate recoveries of the mentioned minerals with estimation of the correlation for reagents regime, recoveries, contents in the lead and zinc feeds and concentrates, based on the descriptive statistics or Excel- solver computer presentation.

ПРОЕКТ

50. Krstev, Aleksandar and Trencovski, Goran and Kokalanov, Vasko and Velkova Krstev, Angela and Krstev, Dejan (2020) VizzArc. [Project] (<https://eprints.ugd.edu.mk/30461/>)

Проектот VizzArc претставува детално разработен и конципиран процес на развој на нов производ – софтверско решение за примена на модерни технологии со цел визуелизација на идните градежни зафати во природни димензии. Целта на проектот е примена на очила за виртуелна реалност во областа на градежништвото и архитектонското проектирање, како и примена на VR во инженеринг и градежни

апликации. Овој проект нуди уникатно искористување на интегриран производ од услуга и технологија со искористување на достапна постоечка хардверска технологија. На овој начин би се забрзале и подобриле процесите на обработка и аналитика на податоци во реално време и нивна интеграција во градежните планови што ќе придонесе кон поефективно, олеснето и поефикасно работење. Со овој проект компанијата нуди метод за поедноставување и делумно автоматизирање на процесот на повторна употреба на дигитални градежни модели кои веќе се користат во градежништвото за да се создадат виртуелни сцени наместо да се прави паралелно создавање на содржини за визуелизација.

УЧЕСТВО НА НАУЧЕН СОБИР СО РЕФЕРАТ (ПОСТЕР/УСНО) ВО ЗЕМЈАВА И ВО СТРАНСТВО

51. **KRSTEV, Dejan (2014)** Развој на човечки ресурси: ефективни тимови, In: Школа за докторски студии, УКИМ

52. **KRSTEV, Dejan (2016)** Користење на SPSS за анализа на податоци за релацијата помеѓу реверзибилната логистика и циркуларната економија, In: Школа за докторски студии, УКИМ

53. **KRSTEV, Dejan (2019)** Динамички системи во производен процес In: Школа за докторски студии, УКИМ.

ЗАКЛУЧОК И ПРЕДЛОГ

Согласно на Законот за високо образование и Правилникот за посебните услови и постапката за избор на наставно-научни, наставно-стручни, научни, наставни и соработнички звања на Универзитет „Гоце Делчев“ во Штип, Рецензентската комисија ја разгледа комплетната документација и констатира дека единствен пријавен кандидат е д-р Дејан Крстев.

Врз основа на анализата на приложените документи, како и врз основа на личното познавање, Рецензентската комисија е едногласна во оцената дека со целокупната своја досегашна работа д-р Дејан Крстев има врвен придонес во наставно-образовната, научноистражувачката и стручно-апликативната и организациско-развојна дејност и ги има освоено потребните бодови, согласно со критериумите за бодување.

Врз основа на приложената документација, работната биографија и научноистражувачката работа, како и целокупната активност која е поврзана со научната област организација на технолошки процеси и индустриска динамика, кандидатот д-р Дејан Крстев ги исполнува сите законски услови за избор во звање доцент.

Рецензентската комисијата има чест и задоволство да му предложи на Наставно-научниот совет на Машински факултет при Универзитет „Гоце Делчев“ во Штип, кандидатот **д-р Дејан Крстев** да биде избран во звањето **доцент** во научното поле индустриско инженерство и менаџмент (211) во наставно-научната област организација на технолошки процеси (21105) и индустриска динамика (21108).

РЕЦЕНЗЕНТСКА КОМИСИЈА

Д-р Радмил Поленаковиќ, редовен професор, претседател, с.р.

Д-р Атанас Кочов, редовен професор, член, с.р.

Д-р Мишко Џидров, редовен професор, член, с.р.

ТАБЕЛА НА АКТИВНОСТИ КОИ СЕ БОДУВААТ ПРИ ИЗБОР ВО ЗВАЊЕ

Ред. бр.	НАУЧНОИСТРАЖУВАЧКА ДЕЈНОСТ И СТРУЧНО-УМЕТНИЧКИ АКТИВНОСТИ	Поени				Вкупно
		Во земјава		Во странство		
		број	поени	број	поени	
1.	Научен труд објавен во меѓународно научно списание, прв автор (реф. 4,10,14,16,21,24, 27,28,29,39,40), втор автор (реф. 2,3,5,6,7,8,9,15,17,19, 20,23,26) останати автори (реф. 11,12,13)	11 x 9 = 99				249
2.	Одбранета докторска дисертација	1	8			8
3.	Одбранета магистерски труд	1	4			4
	ВКУПНО					261

Ред. бр.	СТРУЧНО-АПЛИКАТИВНА ДЕЈНОСТ И ОРГАНИЗАЦИСКО-РАЗВОЈНА ДЕЈНОСТ	Поени				Вкупно
		Во земјава		Во странство		
		број	поени	број	поени	
1.	Учество на научен собир со реферат (постер/усно), воземјава (реф. 50,51,52 (усно))	3	0,5			1,5
2.	Учесник во научен проект (максимум во три проекти)	1	5			5
	ВКУПНО					6,5

Поени кои се однесуваат на целокупната актива на кандидатот	НО	НИ	САОП	Вкупно
ВКУПНО БОДОВИ ОД СИТЕ ОБЛАСТИ	0	261	6,5	267,5