



Research projects - opportunities for new jobs, modern equipment, and scientific achievements

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Projects at Faculty of Food Technology Osijek

Project structure overview



Scientific projects in the last few years – selected ones

Projects at Faculty

• POPI-WinCEco (2018-2022)

- The influence of dietary fiber on bioaccessibility of polyphenols by studying adsorption and simulated digestion processes, in vitro (2017-2021)
- Separation of active compounds from food by-product – Cocoa Shell and formulation of powderous product" (2018-2020)
- Environmentally friendly utilization of winery waste for production of biologically active grape pomace extracts (2016-2017)
- Synthesis and characterization of some chalcone based heterocyclic compounds and their biological screening as potential in-vitro antioxidant agents (2016-2017)

- Development of high valued products based on medicinal plant extracts (2016-2017)
- Application of gas plasma and ultrasound in starch modification processes (2016-2017)
- CroMycoScreen (2015-2017)
- Development of innovative process of agricultural waste biological treatment in biogas production - ProBioTech
- Application of food industry by-products in development of functional and environmentally friendly extruded food products and additives (2014-2018)
- Trehalose: fruit product quality improvement (2014-2018)

- Development of innovative process of biological treatment of agriculture waste in production of biogas (2014-2016).
- Improving the quality and safety of Croatian and Slovenian traditional meat products (TMP) (2014-2016)

Bioconversion of lignocellulosic material in high-value animal feed (Bio4Feed)

Budget: 8.604.744,28 HRK

Croatian Science Foundation Projects

Installation and Research Projects

"Application of innovative techniques of the extraction of bioactive components from byproducts of plant origin"



"Application of cocoa husk in development of valueadded products"



NSTALLATION PROJECTS

"Green Technologies in Synthesis of Heterocyclic Compounds"



"Razvoj održivog integriranog procesa proizvodnje biološki aktivnih izolata iz proizvodnih ostataka prehrambene industrije" (2018 – 2022)



"The influence of dietary fiber on bioaccessibility of polyphenols by studying adsorption and simulated digestion processes, in vitro" (2017-2021)



(Budget: ~ 7.000.000,00 HRK)

European Union funding

Projects at Faculty



- Investing in innovative solution and development of low-energy dryers (European Regional Development Fund)
 - The development of new products based on grape seed (European Regional Development Fund)

Major projects in cooperation with industry

Projects at Faculty

- Investing in innovative solution and development of low-energy dryers (European Regional Development Fund)
- The development of new products based on grape seed (European Regional Development Fund)
- Development of innovative process of agricultural waste biological treatment in biogas production – ProBioTech (Bovis d.o.o., Osatina Grupa d.o.o)

- Application of tomato processing byproducts as a functional ingredient in the development of new products (Podravka)
- Proposal for the use of a Supisol patented ingredient (Podravka) in the development of dairy spreads and reduced salt / sodium intake (Podravka)
- Development of bronchial api syrups (Apimel)







Razvoj i uspostava interdisciplinarnog diplomskog studija "Biotehnologija" na engleskom jeziku Project budget: 1.776.323,15 kn 12.10.2018. – 12.10.2020.



OPPORTUNITIES for new jobs











Ministarstvo znanosti i

obrazovania



Europska unija

Zaiedno do fondova EU



Republika Hrvatska

Ministarstvo regionalnoga razvoja

i fondova Europske unije



BIOPROSPECTING OF ADRIATIC SEA

Centre of Research Excellence for Marine Bioprospecting BIOPROCRO

ERDF-EU fond: 36,941.965,46 kn



http://bioprocro.zci.hr/























PROJEKT LJUDI PUBLIKACIJE MEDIA V KONTAKT Q



Platforma: Znanstveni centar izvrsnosti za bioprospecting mora BIOPROCRO (studeni, 2015)

Bioprospecting

5 Activities



Croatian Science Foundation Project

Installation Research Project



NEW Installation Research Projects: *"Application of innovative techniques of the extraction of bioactive components from by-products of plant origin"* (2018-2023)

Principal Investigator: Stela Jokić (Budget: **1.607.708,72 HRK**)







ByProExtract

Naslovna Oprojektu Istraživači Radovi Skupovi Novosti Kontakt 🎫 🗮

Projekt ByProExtract

O NAŠEM TIMU

Primjena inovativnih tehnika ekstrakcije bioaktivnih komponenti iz nusproizvoda biljnoga podrijetla

VIŠE O PROJEKTU

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- Writing to:
- Inform
- Support an Argument With Claims
- · Engage and Entertain

- Communicate Using Digital Media
- Engaging in Conversations & Discussions
- Communicating in Diverse Environments



Leadership & Initiative

- Idea Generation
- Idea Design & Refinement
- Openness & Courage to Explore
- Work Creatively with Others
- Creative Production & Innovation







"Installation Research Projects"



Ana-Marija Cikoš

PTF

OSCIFAMATET OSUER





Marija Banožić



Young Scientists







"Young Researchers' Career Development Project - Training of Doctoral Students"



Silvija Šafranko





New Equipment

Project funding are good source of acquiring new equipment







LABORATORIJ ZA BIOPROSPECTING JADRANSKOG MORA

Laboratorijska oprema je sufinancirana sredstvima Europske unije iz Europskog fonda za regionalni razvoj











Scientific achievments



Publications

A1 category articles published during last year

Jerković, Igor; Kranjac, Marina; Marijanović, Zvonimir; Šarkanj, Bojan; Cikoš, Ana-Marija; Aladić, Krunoslav; Pedisić, Sandra; Jokić, Stela. Chemical Diversity of *Codium bursa* (Olivi) C. Agardh Headspace Compounds, Volatiles, Fatty Acids and Insight into Its Antifungal Activity. *Molecules*. 2019, 24(5), 842;

Jerković, Igor; Kranjac, Marina; Marijanović, Zvonimir; Roje, Marin; Jokić, Stela. Chemical Diversity of Headspace and Volatile Oil Composition of Two Brown Algae (*Taonia atomaria* and *Padina pavonica*) from the Adriatic Sea. *Molecules*. 24 (2019) 495.

Cikoš, Ana-Marija; Jokić, Stela; Šubarić, Drago; Jerković, Igor. Overview on the Application of Modern Methods for the Extraction of Bioactive Compounds from Marine Macroalgae. *Marine drugs*, 16 (2018) 348.

Jerković, Igor; Marijanović, Zvonimir; Roje, Marin; Kus, Piotr; Jokić, Stela; Coz Rakovac, Rozelinda. Phytochemical Study of the Headspace Volatile Organic Compounds of Fresh Algae and Seagrass from the Adriatic Sea (Single Point Collection) **PLOS ONE**, 13(5): (2018) e0196462.

Cikoš, Ana-Marija; Jerković, Igor; Jokić, Stela. Macroalgal polyphenols: isolation, characterization and bioactivity. Advances in Marine Biology. (Eds: Adam Kovács, Patrik Nagy). Nova Science Publishers, Inc., NY, USA, 2019.



Jokić, Stela; Pavlović, Nika; Jozinović, Antun; Ačkar, Đurđica; Babić, Jurislav; Šubarić, Drago. High-voltage electric discharge extraction of bioactive compounds from cocoa bean shell. *CABEQ*, 2019

Banožić, Marija; Banjari, Ines; Jakovljević, Martina; Šubarić, Drago; Tomas, Srećko; Babić, Jurislav; Jokić, Stela. Optimization of ultrasound-assisted extraction of some bioactive compounds from tobacco waste. *Molecules* (2019), 24, 1611. doi:10.3390/molecules24081611

Pavlović, Nika; Vidović, Senka; Vladić, Jelena; Popović, Ljiljana; Moslavac, Tihomir; Jakobović, Snježana; Jokić, Stela. Recovery of Tocopherols, Amygdalin and Fatty Acids from Apricot Kernel Oil: Cold Pressing vs. Supercritical Carbon Dioxide. *European Journal of Lipid Science and Technology*, 120 (2018) 1800043.

Jokić, Stela; Gagić, Tanja; Knez, Željko; Šubarić, Drago; Škerget, Mojca. Separation of Active Compounds from Food by-Product (Cocoa Shell) Using Subcritical Water Extraction. *Molecules*, 23 (2018) 1408

Panak Balentić, Jelena; Ačkar, Đurđica; Jokić, Stela; Jozinović, Antun; Babić, Jurislav; Miličević, Borislav; Šubarić, Drago; Pavlović, Nika. Cocoa shell: by-product with great potential for wide application. *Molecules*, 23 (2018) 1404.

Cvjetko Bubalo, Marina; Vidović, Senka; Radojčić Redovniković, Ivana; Jokić, Stela. New perspective in extraction of plant biologically active compounds by green solvents. *Food and Bioproducts Processing*, 109 (2018) 52–73.



Pavić, Valentina; Flačer, Dora; Jakovljević, Martina; Molnar, Maja; Jokić, Stela. Assessment of Total Phenolic Content, In Vitro Antioxidant and Antibacterial Activity of Ruta graveolens L. Extracts Obtained by Choline Chloride Based Natural Deep Eutectic Solvents. *Plants.* 8 (2019), 3; 1-9.

Jakovljević, Martina; Jokić, Stela; Molnar, Maja; Jašić, Midhat; Jukić, Huska; Babić, Jurislav, Babić, Banjari, Ines. Bioactive profile of various *Salvia officinalis* L. preparations. *Plants.* 8 (2019), 55; 1-30.



Kuś, Piotr; Jerkovic, Igur, Jakovijevic, Infartina, Jukic, Stela. Extraction of proactive prieholics from black poplar (*Populus nigra* L.) buds by supercritical CO₂ and its optimization by response surface methodology. *Journal of Pharmaceutical and Biomedical Analysis*, 152 (2018) 128-136.

Jokić, Stela; Molnar, Maja; Jakovljević, Martina; Aladić, Krunoslav; Jerković, Igor. Optimization of supercritical CO_2 extraction of *Salvia officinalis* L. leaves targeted on oxygenated monoterpenes, α -humulene, viridiflorol and manool. *Journal of supercritical fluids*, 133 (2018) 253-262.





PROMOTION OF THE FACULTY



Sudionici i posjetitelji ponijeli lijepe uspomene na PTFOS



Bilding and the second seco









"Alone we can do so little; Together, we can do so much." Helen Keller

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CONTRACTOR OF STREET, STREET,