



MILENA ĐUKANOVIĆ
3D ŠTAMPANI SNOVI

MILENA DJUKANOVIC
3D PRINTED DREAMS

Kuslevova kuća
House of Kuslev

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10/03 - 14/03 '23
Podgorica, mart 2023. godine

Izdavač / Publisher
Muzeji i galerije Podgorice

Kustos / Curator
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Tekst / Text
Milena Đukanović

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Luka Jovović, Mihailo Jovanović

Dizajn i priprema za štampu / Design and prepress
Studio ribizla.

Fotografija / Photography
Veronika Jovanović

Modeli / Models
Milena Đukanović, Neda Jovanović,
Anđela Nikolić, Jovana Jovanović

Štampa / Print
Štamparija „Golbi print“

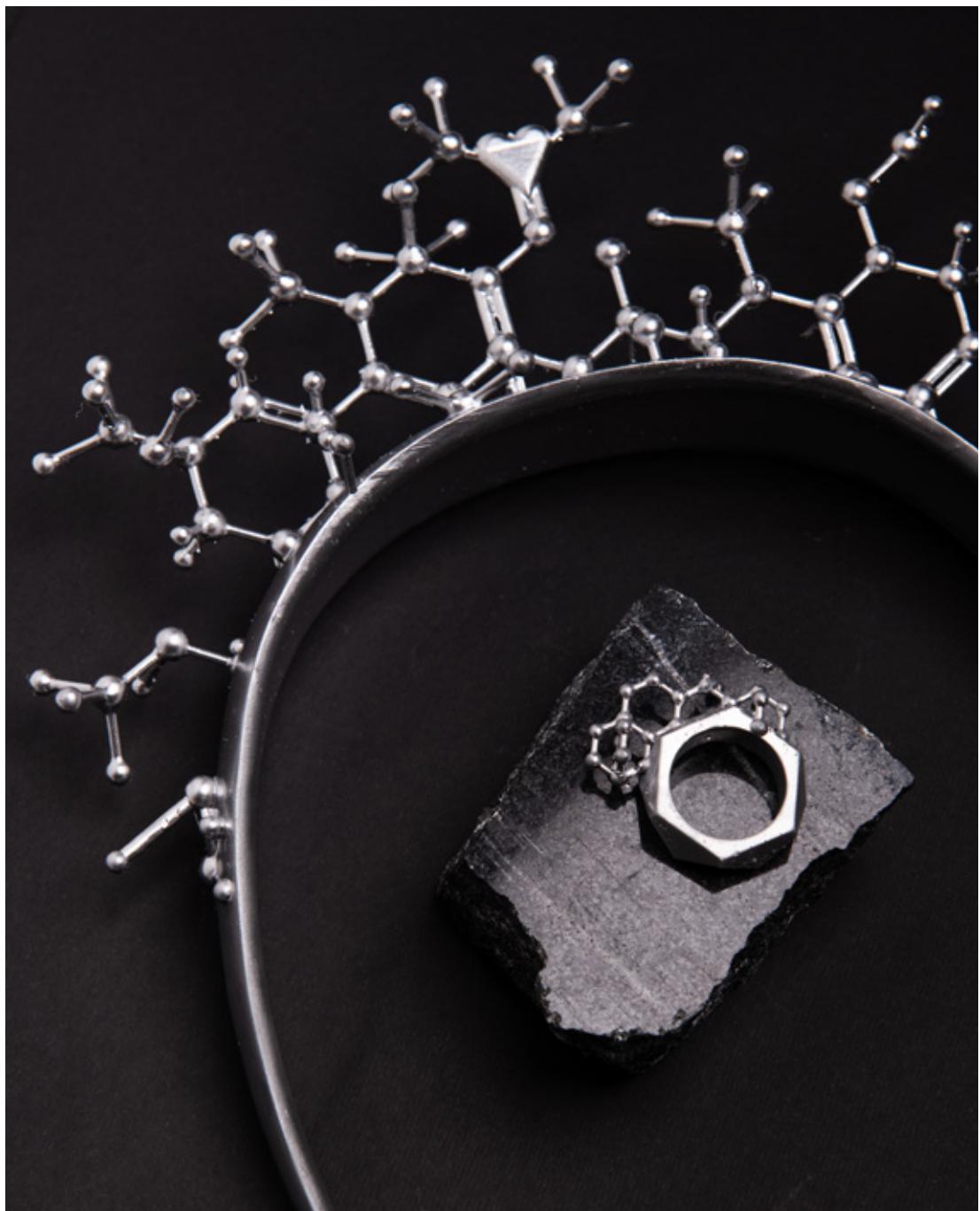
Tiraž / Circulation
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Godina / Year
2023.

Posvećeno mojim roditeljima... / Dedicated to my parents...

Milena Đukanović



Kolekcija Ekscentričan um, 2023. / Collection Eccentric mind, 2023.

Izložba „3D štampani snovi“ čini privlačnu koheziju koja nam prezentuje moguće presjeke skupina iz domena estetskih i tehnoloških dostignuća, a nastala je kao rezultat saradnje četiri autorke iz različitih oblasti: Milene Đukanović kao nositeljke projekta, sa autorkama Veronikom Jovanović, Nedom Jovanović i Andejom Nikolić. Na izložbi su prikazani upotrebnii predmeti, predmeti koje možemo uvrstiti u oblast primijenjene umjetnosti, selektovani u šest cjelina (kolekcija): kolekcija *Ekscentrični um* (2023), *Kragne* (2023), *Crnogorski perperi* (2022), *3D štampane igračke* (2022), *Blagosloveni prirodom* (2021) i *3D štampane leptir mašne* (2020).

Kao što nas i sami naslovi upućuju, inovativnim tehničkim standardom nastala su djela koja, vrlo zanimljivo, koreliraju sa kulturnom tradicijom Crne Gore i njenim vrijednostima (što ih izvjesno udaljava od artefakata pukog konzumerističkog zadovoljstva), sa modom (koja ovdje predstavlja aparat socijalnog stava), kao i sa funkcionalnim predmetima koji su u službi kognitivnog razvoja.

Posebno zanimljive cjeline predstavljaju kolekcije *Kragne* i *Ekscentrični um*. Kragne kao iskaznica „retro“ stila i „epohe“ na svojevrstan način predstavljaju eklektično polazište za otjelovljenje nostalgične mode i uvođenje istorije u sve više aistoričnu stvarnost. Sentimentalno uljepšavanje u isto vrijeme preispituje nedavnu prošlost i funkcioniše kao svojevrsni dramski kostim ili pak pastiš – na izvjestan način stavljajući u opticaj ključnu poruku — odbacivanje konvencionalne odjeće za odrasle (utoliko više što svojim dimenzijama i oblikom ukazuju na sofisticirani hedonizam i žanrovska hiperbolu). Sa uvođenjem posve novog tehnološkog procesa one ne postaju tek stilski repriza. 3D medaljoni od ovog „rimejka“ čine rekreirani „evolutivni“ iskorak, koji nove materijale stavlja u funkciju *masovnog bijega u nostalgiju* (F. Jameson, *Postmodernism, The Cultural Logic of Capital*).

Sličnim inovativnim tehnikama (SLA štampa) osmišljena je osebujna kruna bremenita skulptorskim svojstvima (kolekcija *Ekscentrični um*), koja na izvjestan način predstavlja supremativnu moć sinteze dva načela — načela nauke i načela umjetnosti, čime njihova omeđena područja postaju „propustljiva“ i fluidna.

Selma Đečević
Teoretičarka savremene umjetnosti

The exhibition “3D printed dreams” forms an attractive cohesion that presents possible cross-sections of groups from the domain of aesthetic and technological achievements, and was created as a result of the collaboration of four authors from different fields: Milena Djukanovic as the project holder, with authors Veronika Jovanovic, Neda Jovanovic and Andjela Nikolic. The exhibition presents useful objects, objects that can be included in the field of applied art, selected in six units (collections): *Eccentric Mind* (2023), *Collars* (2023), *Montenegrin Perper* (2022), *3D printed toys* (2022), *Blessed by nature* (2021) and *3D printed bow ties* (2020).

As the titles themselves indicate, the innovative technical standard created works that, very interestingly, correlate with the cultural tradition of Montenegro and its values (which certainly distances them from artifacts of mere consumerist pleasure), with fashion (which here represents the apparatus of social attitude), as well as with functional subjects that are in the service of cognitive development.

Particularly interesting units are the *Collars* and *Eccentric Mind* collections. *Collars* as proof of “retro” style and “epoch” in a peculiar way represent an eclectic starting point for the embodiment of nostalgic fashion and the introduction of history into an increasingly ahistorical reality. Sentimental beautification at the same time reexamines the recent past and functions as a kind of dramatic costume or pastiche - in a certain way putting into circulation a key message - the rejection of conventional clothes for adults (all the more so because their dimensions and shape indicate sophisticated hedonism and genre hyperbole). With the introduction of a completely new technological process, they do not become just a stylistic repetition. The 3D medallions of this “remake” constitute a recreated “evolutionary” step forward, which puts the new materials into the function of a mass escape into nostalgia (F. Jameson, *Postmodernism, The Cultural Logic of Capital*).

Similar innovative techniques (SLA printing) were used to create a distinctive crown laden with sculptural properties (*Eccentric Mind collection*), which in a certain way represents the supremacy of the synthesis of two principles - the principles of science and the principles of art, making their bounded areas “permeable” and fluid.

Selma Djecevic
Theoretician of contemporary art

KOLEKCIJA
EKSCENTRIČAN UM,
2023.

COLLECTION
ECCENTRIC MIND,
2023.



Kolekcija *Ekscentričan um*, 2023. / Collection *Eccentric mind*, 2023.

„Svake godine predavanja započinjem objašnjavajući studentima vezivanje molekula. Ove veze su usmjerene, što znači da atomi zauzimaju specifične položaje jedan u odnosu na drugi kako bi maksimizovali snagu veze.

Jake veze dovode i do ekscentričnog uma.

Karakteristike molekula korelišu sa njihovim strukturama; same strukture često su kompleksne, nekonvencionalne i pomalo čudne.

A to je i definicija ekcentričnog uma.

Vezivanje molekula zahtijeva vrijeme. A da bi se odštampala ova kruna od molekula, potrebno je oko 30 časova. Na vrhu mreže molekula je malo srce. A da bi se kreiralo bilo šta vrijedno, potrebno je veliko srce.

Veliko srce vodi do ekscentričnog uma.

Ova kolekcija posvećena BIG SEE 2021 nagradi za modni dizajn, ali i ekscentričnom slovenačkom umu Jože Plečniku. Takođe, ova kolekcija je nosilac i BIG SEE 2023 nagradi za modni dizajn, pa će Ljubljana i ove godine biti, nakratko, moj dragi dom.” – Milena Đukanović.

##Ova kolekcija je podržana od strane Ministarstva nauke i tehnološkog razvoja kroz program Inovativnih projekata 2022 i biće predstavljena na Munich Jewellery Week u martu 2023. godine.

"Each year I start my lectures by explaining molecular bonding to my students. These bonds are directional, meaning that the atoms adopt specific positions relative to one another so as to maximize the bond strengths.

Strong bonds can also lead to eccentric mind.

The properties of molecules correlate with their structures; and structures often can be complex, unconventional and slightly strange.

And that is a definition of an eccentric mind.

Molecular bonding sometimes takes time. And for the molecules to be printed on this crown - it took around 30 hours. On the top of the molecule network is a little heart. And for anything of value to be created, you need a big heart.

Big heart leads to eccentric mind.

This collection is dedicated to BIG SEE 2021 award for fashion design, but also to eccentric Slovenian mind Joze Plecnik. And this collection is given a BIG SEE 2023 award for fashion design, so Ljubljana will be my dear home for a short period of time." - Milena Djukanovic.

##This collection is supported by Ministry of science and technology through programme of Innovative projects 2022 and will be presented at Munich Jewellery Week in March 2023.



Kolekcija *Ekscentričan um*, 2023. / Collection *Eccentric mind*, 2023.



Kolekcija *Ekscentričan um*, 2023. / Collection *Eccentric mind*, 2023.

**KOLEKCIJA
KRAGNE,
2023.**



**COLLECTION
COLLARS,
2023.**



Kolekcija Kragne, 2023. / Collection Collars, 2023.

“Kolekcija Kragne rađena je u saradnji sa umjetnicom Nedom Jovanović koja je odabrala čiste, bijele materijale koji oblikom i mirisom podsjećaju na djetinjstvo. Romantična nota data je kroz 3D štampane medaljone inspirisane crnogorskim princezama. Barokni okviri nas vuku na dvor.

Ali riječi pred slikom se uvijek zamrznu...” – Milena Đukanović.

##Ova kolekcija je podržana od strane Ministarstva kulture i medija kroz program Kreativnih industrija 2022 i biće predstavljena na Munich Jewellery Week u martu 2023. godine.



“The collection Collars was made in cooperation with artist Neda Jovanovic, who chose clean, white materials that remind of childhood in their shape and smell. A romantic note is given through 3D printed medallions inspired by Montenegrin princesses. Baroque frames take us to the ballrooms.

But the words in front of the picture always freeze...” – Milena Djukanovic.

##This collection is supported by Ministry of culture and media through programme of Creative industries 2022 and will be presented at Munich Jewellery Week in March 2023.





Kolekcija Kragne, 2023. / Collection Collars, 2023.



Kolekcija Kragne, 2023. / Collection Collars, 2023.

KOLEKCIJA
**CRNOGORSKI
PERPERI,
2022.**

COLLECTION
**MONTENEGRIN
PERPER,
2022.**



Kolekcija Crnogorski perperi, 2022. / Collection Montenegrin perper, 2022.



U okviru saradnje između Elektrotehničkog fakulteta, Centralne banke Crne Gore i Muzeja novca izabrano je sedam različitih perpera koji su prvo 3D skenirani, a zatim i 3D odštampani SLA tehnikom. Ovaj projekat na kome je rukovodilac Prof. dr Milena Đukanović je primjer kako nove tehnologije pomažu u očuvanje crnogorske kulturne baštine.

Potreba za stvaranjem državne monete postojala je i ranije, a pokazala se neophodnom nakon međunarodnog priznanja Knjaževine Crne Gore na Berlinском kongresu 1878. godine. Cirkulacija stranog novca, u prvom redu austro-ugarskog na crnogorskom tržištu, državi i narodu donosila je izvjestan gubitak. Nakon prvih pokušaja da se omogući stvaranje crnogorske monete, za tim se ukazala prilika početkom 20. vijeka

As part of the cooperation between the Faculty of Electrical Engineering, the Central Bank of Montenegro and the Money Museum, seven different coins were selected, which were first 3D scanned and then 3D printed using the SLA technique. This project, with its leader Prof Milena Djukanovic, is an example of how new technologies help preserve Montenegrin cultural heritage.

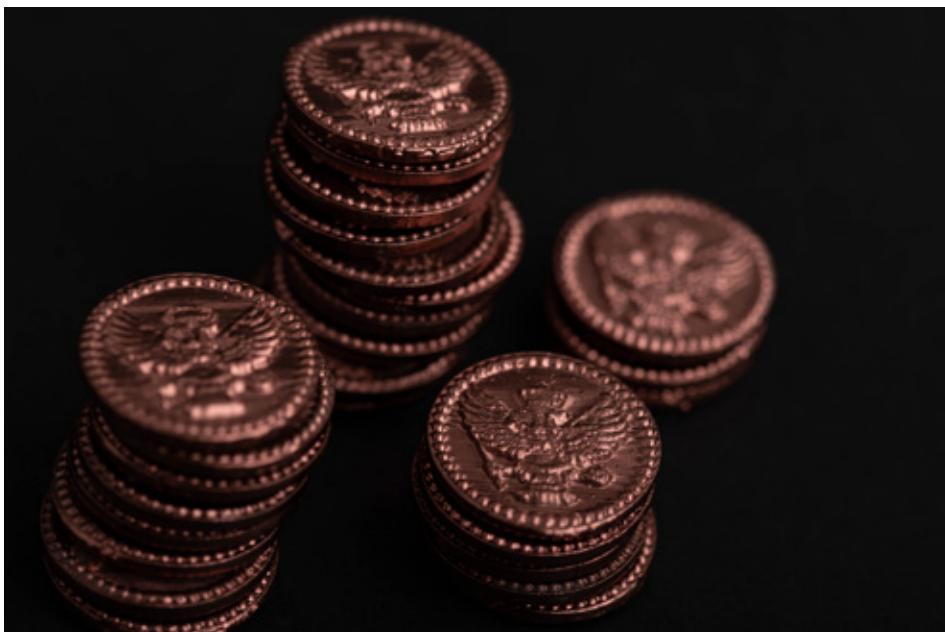
The need to create a state coin existed before, and it proved necessary after the international recognition of the Principality of Montenegro at the Berlin Congress in 1878. The circulation of foreign money, primarily Austro-Hungarian money in the Montenegrin market, brought a certain loss to the state and the people. After the first attempts to enable the creation of a Montenegrin perper, an opportunity arose at the beginning of the 20th century.



Kolekcija Crnogorski perperi, 2022. / Collection Montenegrin perper, 2022.



Kolekcija Crnogorski perperi, 2022. / Collection Montenegrin perper, 2022.



Kolekcija Crnogorski perperi, 2022. / Collection Montenegrin perper, 2022.

KOLEKCIJA
3D ŠTAMPANE
IGRAČKE,
2022.

COLLECTION
3D PRINTED TOYS,
2022.



Kolekcija 3D štampane igračke, 2022. / Collection 3d printed toys, 2022.

U saradnji između Elektrotehničkog fakulteta i Zavoda za školstvo Crne Gore, Milena Đukanović je kao rukovodilac projekta dizajnirala pomoćna nastavna daktička sredstva za rad sa učenicima sa smetnjama u razvoju, u cilju njihovog akademskog i razvojnog napredovanja, dakle za primjenu u nastavnom procesu, interakciji i socijalizaciji.

Ove 3D štampane igračke sa fokusom na kulturnu baštinu Crne Gore izrađene su FDM tehnologijom koristeći reciklirajuće, biorazgradive PLA filamente.

Ova kolekcija 3D štampanih igračaka je nosilac BIG SEE 2023 nagrade za dizajn proizvoda i svečano će biti dodijeljena u Ljubljani u oktobru 2023. godine.

Takođe, ova kolekcija je izabrana za Milan Design Week i biće izložena 17-23. aprila 2023. godine u dvorcu Bandonello, ulica Matteo Bandello 22, Milano, Italija.

Kolekcija je ušla i među finaliste u petoj ediciji za RoPLastic nagradu koja će biti objavljena 19. Aprila 2023. Godine u Triennale Milano, ulica Emilio Alemagna 6, Milano, Italija.

In cooperation between the Faculty of Electrical Engineering and the Bureau for Education services in Montenegro, Milena Djukanovic, as the project manager, designed auxiliary teaching aids for engaging students with developmental disabilities, with the aim of their academic and developmental progress, i.e. for application in the teaching process, interaction and socialization.

These 3D printed toys with a focus on the cultural heritage of Montenegro are made with FDM technology using recyclable, biodegradable PLA filaments.

This collection of 3D printed toys is the winner of the BIG SEE 2023 product design award and will be awarded in a ceremony in Ljubljana in October 2023.

Also, this collection was selected for Milan Design Week and will be exhibited on 17-23. April 2023 at Bandonello Castle, Via Matteo Bandello 22, Milan, Italy.

The collection is also among the finalists in the fifth edition of the RoPLastic Award, which will be announced on April 19, 2023, at Triennale Milano, Via Emilio Alemagna 6, Milan, Italy.



Kolekcija 3D štampane igračke, 2022. / Collection 3d printed toys, 2022.



Kolekcija 3D štampane igračke, 2022. / Collection 3d printed toys, 2022.



Kolekcija 3D štampane igračke, 2022. / Collection 3d printed toys, 2022.

KOLEKCIJA
**BLAGOSLOVENI
PRIRODOM,
2021.**

COLLECTION
**BLESSED BY
NATURE,
2021.**



Kolekcija *Blagosloveni prirodom*, 2021. / Collection *Blessed by nature*, 2021.

Svjetska izložba Expo 2020 Dubai smatra se jednim od najvećih događaja u Ujedinjenim Arapskim Emiratima u 2021. i 2022. godini. Okupila je svjetski poznate kompanije koje su promovisale brojne projekte iz različitih oblasti. Na sajmu je učestvovalo preko 192 države svijeta.

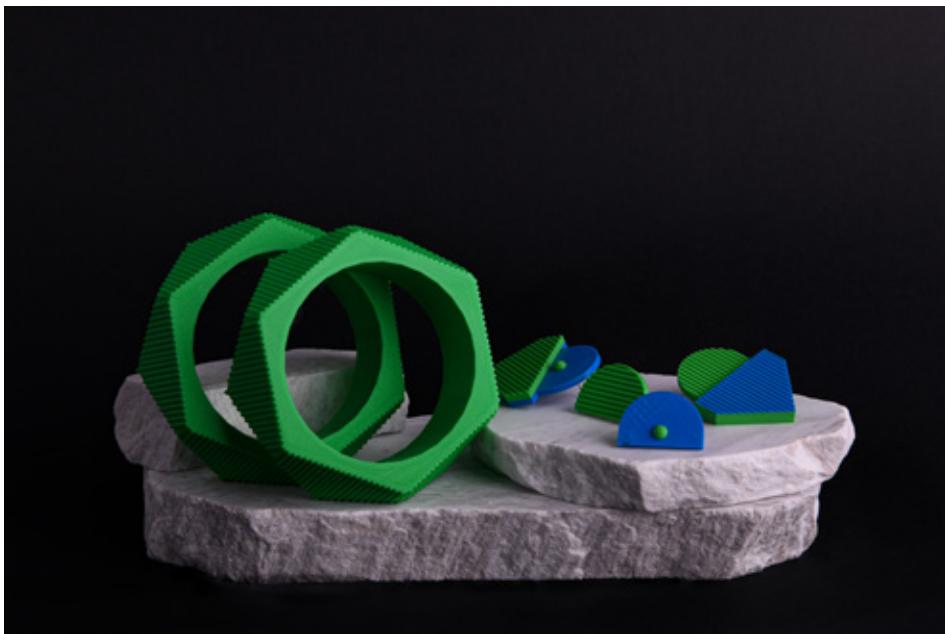
Tema izložbe "Spajanje umova, stvaranje budućnosti", podijeljena je na tri podteme: Mogućnost, Mobilnost i Održivost. Crna Gora je u distriktu Održivost, imala paviljon u skladu sa ključnom porukom izložbe: očuvanja balansa između prirode i čovjeka, uz nastojanje maksimalne valorizacije crnogorskog ekonomskog i investicionog potencijala, uz čuvanje nacionalnog prirodnog blaga, a pod nazivom Blessed by Nature.

Time je inspirisana i ova kolekcija Midju 3D štampanog nakita koji je izložen u crnogorskom paviljonu tokom trajanja sajma. Korištene su plava i zelena boja PLA filamenata za nakit, koji su biorazgradivi i reciklirajući.

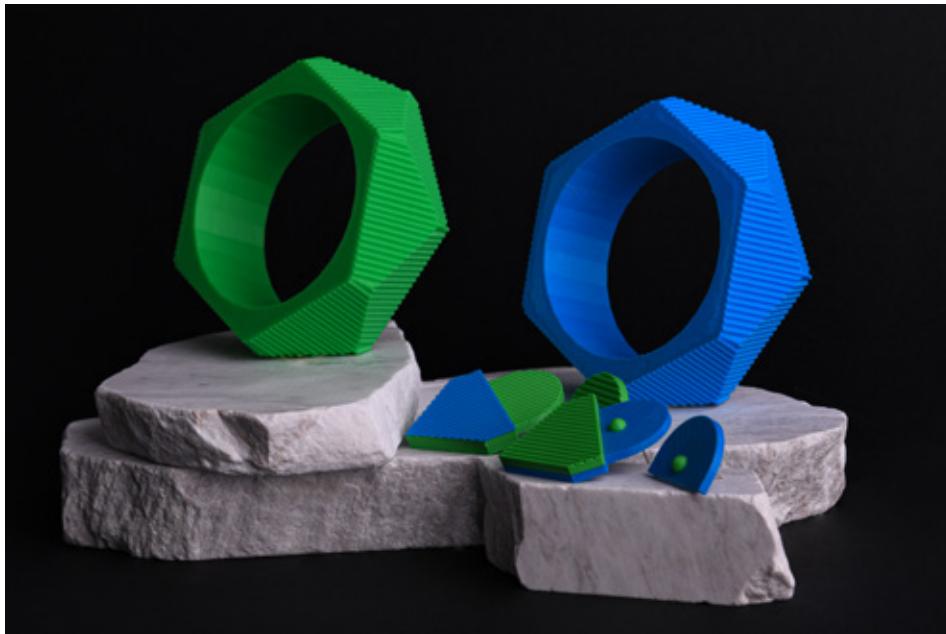
The World Expo 2020 Dubai is considered one of the biggest events in the United Arab Emirates in 2021 and 2022. It brought together world-renowned companies that promoted numerous projects from various fields. More than 192 countries of the world participated at the fair.

The theme of the exhibition "Connecting Minds, Creating Future" is divided into three sub-themes: Opportunity, Mobility and Sustainability. In the Sustainability district, Montenegro had a pavilion in accordance with the key message of the exhibition: preserving the balance between nature and humans, with an effort to maximize the value of Montenegrin economic and investment potential, while preserving the national natural treasure, under the name Blessed by Nature.

This inspired the collection of Midju 3D printed jewelry, which was exhibited in the Montenegrin pavilion during the fair. Blue and green color of PLA filaments were used for jewellery being also biodegradable and recyclable.



Kolekcija *Blagosloveni prirodom*, 2021. / Collection *Blessed by nature*, 2021.



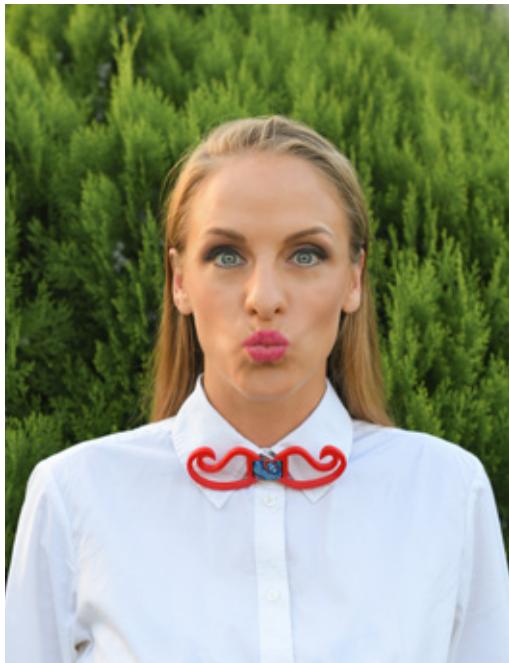
Kolekcija *Blagosloveni prirodom*, 2021. / Collection *Blessed by nature*, 2021.



Kolekcija *Blagosloveni prirodom*, 2021. / Collection *Blessed by nature*, 2021.

KOLEKCIJA
**3D ŠTAMPANE
LEPTIR MAŠNE,
2020.**

COLLECTION
**3D PRINTED
BOWTIES,
2020.**



Kolekcija 3D štampane leptir mašne, 2020. / Collection 3D printed bowties, 2020.

„Leptir mašne dozvoljavaju nevjerojatnu kreativnost i spoj različitih materijala, kao i dizajn različitog pakovanja. One sa sobom obavezno nose eleganciju, ozbiljnost, ali i vrvavost da se iznesu u jarkim bojama, neobičnim oblicima, u različitim satima dana i noći.“ – Milena Đukanović.

Ovaj projekat je podržan od Ministarstva kulture i medija kroz Kreativne industrije 2020 i rađen je u saradnji sa dizajnerkom Andjom Popović. Rezultat je dizajnirana 3D štampana leptir mašna od reciklirajućih materijala uz tzv. zero-waste tekstil koji ide oko vrata.



“Butterfly bows allow incredible creativity and the combination of different materials, as well as the design of different packaging.” They necessarily carry a sense of elegance, seriousness, but also vivaciousness to be presented in bright colors, unusual shapes, at different hours of the day and night.” - Milena Djuknovic.

This project is supported by the Ministry of Culture and Media through Creative Industries 2020 and was made in collaboration with designer Andjela Popovic. The result is a designed 3D printed bow-tie made of recycled materials with the so-called zero-waste textile that goes around the neck.



Milena Đukanović / Milena Djukanovic

BIOGRAFIJA UMJETNICE

MILENA ĐUKANOVIĆ

Milena Đukanović je rođena 1983. godine u Podgorici. Vanredni je profesor na Elektrotehničkom fakultetu Univerziteta Crne Gore gdje predaje i osnove 3D modelovanja i 3D štampe.

Paralelno je nagrađivan dizajner 3D štampanog nakita: BIG SEE Award 2021 u modnom dizajnu, BIG SEE Award 2023 u modnom dizajnu i dizajnu proizvoda. Izlagala je na Munich Jewellery Week 2020 i 2023, Dubai EXPO 2020. Izлагаće na Milan Design Week u aprilu 2023. godine. Ušla je u finaliste za RoPlastic 2023 nagradu za „Waste is Value“ nagradu.



BIOGRAPHY OF THE ARTIST

MILENA DJUKANOVIC

Milena Djukanovic was born in 1983 in Podgorica. She is Associate Professor at Faculty of Electrical Engineering at University of Montenegro where she teaches basics of 3D modelling and 3D printing.

In parallel, she is an awarded designer of 3D printed jewellery: BIG SEE Award 2021 for fashion design, BIG SEE Award 2023 for fashion and product design. She exhibited at Munich Jewellery Week 2020 and 2023, Dubai EXPO 2020. She will present her work at Milan Design Week in April 2023. She is one of the finalists for RoPlastic 2023 award „Waste is Value“.

BIOGRAFIJA UMJETNICE

VERONIKA JOVANOVIĆ

Veronika Jovanović je rođena 1983. godine u Kotoru. Zavrsila je Pravni fakultet u Podgorici, nakon čega je radila kao saradnik u nastavi na Fakultetu za Pomorstvo u Kotoru.

Ljubav prema fotografiji je odlučila da pretvori u posao i 2021. godine otvorila EKLEKTIK studio, fotografski studio specijalizovan za fotografisanje proizvoda. Privatno voli crno bijele fotografije i jako uživa u njima, dok njene profesionalne fotografije pršte od boja i živosti.

Bila je učesnica na nekoliko zajedničkih izložbi, u Crnoj Gori i regionu. U skorije vrijeme bi voljela da ima svoju samostalnu izložbu.



BIOGRAPHY OF THE ARTIST

VERONIKA JOVANOVIC

Veronika Jovanovic was born in 1983 in Kotor. She graduated from the Faculty of Law in Podgorica, after which she worked as a teaching associate at the Maritime Faculty in Kotor.

She decided to turn her love for photography into a business and in 2021 opened EKLEKTIK studio, a photography studio specialized in product photography. Privately, she likes black and white photos and enjoys them a lot, while her professional photos burst with color and vibrancy.

She was a participant in several joint exhibitions in Montenegro and the region. In the near future, she would like to have her first solo exhibition.



Veronika Jovanović / Veronika Jovanovic

Izložba je realizovana kroz podršku projekata odobrenih od sljedećih institucija / The exhibition was realized through the support of projects approved by the following institutions:

Univerzitet Crne Gore

Centralna banka Crne Gore

Ministarstvo kulture i medija Crne Gore, Kreativna Crna Gora

Ministarstvo nauke i tehnološkog razvoja

Zavod za školstvo Crne Gore

Prijatelji izložbe / Friends of the exhibition:

Muzeji i galerije Podgorice

3D soba

ISBN 978-9940-590-90-1

9 789940 590901 >

CIP - Каталогизација у публикацији
Национална библиотека Црне Горе, Цетиње

ISBN 978-9940-590-90-1
COBISS.CG-ID 25423876

Kuslevova kuća / House of Kuslev

10/03 - 14/03 '23
Podgorica, mart 2023.