



2021



**ANNUAL
REPORT**

**LETNO
POROČILO**

InnoRenew CoE

Renewable Materials and Healthy Environments
Research and Innovation Centre of Excellence



InnoRenew CoE

Center odličnosti za raziskave in inovacije
na področju obnovljivih materialov in
zdravega bivanjskega okolja

ANNUAL REPORT LETNO POROČILO

2021



Mentored by the Fraunhofer Institute for Wood Research,
Wilhelm-Klauditz-Institut WKI (Fraunhofer WKI)

Mentorstvo: Inštitut Fraunhofer Wilhelm-Klauditz
(Fraunhofer WKI)

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Foreword from the director

The first thought that comes to my mind when starting this foreword is, "YES, InnoRenew CoE is moving in together, in the biggest wooden building in Slovenia!"

Our new building is not just a building, either – it is a demonstration of our knowledge and a research object itself that will help us deliver new knowledge and contribute to the future development of the built environment.

Joining together in our new building is so important because collaboration is the key to achieving the scientific breakthroughs that will help society overcome the climate crisis. The new building will not only help us collaborate but also elevate our presence in international networks. We have already built an informal international network related to structural health monitoring projects of innovative timber buildings. We partnered with Oregon State University, the University of Primorska and the University of Helsinki. Within this network, we can apply many of our areas of expertise to show the value of interdisciplinary science in the built environment. We will collect first-hand data on some unique and innovative structural systems and develop benchmark data for further applications and cross-reference with other projects. With the aim to co-create a greener future, we also became a partner of the European Commission's New European Bauhaus initiative and connected researchers and professionals from over 30 countries in the new COST Action CA20139 – Holistic design of taller timber buildings.

We know that getting the most out of our scientific and outreach work means we need to support the organization with good management practices as well. In 2021, we went through the European Foundation for Quality Management (EFQM) evaluation and proudly obtained a four-star EFQM certificate. The guidance and recommendations we received are already being implemented and will help continue to improve the business and support level activities we do.

There were many other things 2021 brought to us, from distinguished guests to new international and national projects, high-quality publications and patents. But I would especially like to emphasize our collaboration with industry. We more than doubled our direct industrial collaborations, both in Slovenia and abroad. With this, our knowledge goes beyond the academic environment and has a direct impact on the development of renewable materials applications in the built environment.

I would conclude that I was extremely proud to hear that InnoRenew CoE was cited as an example of excellence during Nobel Week in an exclusive interview with Mariya Gabriel, European Commissioner for Innovation, Research, Culture, Education and Youth. The hard work and dedication of InnoRenew CoE's team towards excellence have been recognized within the highest levels of discussion in Europe. We will further work towards the United Nations' Sustainable Development Goals, and contribute to the ambitious targets set by the European Union. Taken together, this will set the basis to upgrade InnoRenew CoE's knowledge transfer activities in 2022 and beyond.

Enjoy reading about InnoRenew CoE's activities and achievements in 2021!



Predgovor direktorice

Ob pisanju predgovora je prva misel, ki mi pride na pamet, »DA, InnoRenew CoE se seli pod eno streho, v največjo leseno stavbo v Sloveniji!«

Naša nova stavba ni samo stavba – je tudi demonstracija našega znanja in raziskovalni projekt, ki nam bo pomagal pri ustvarjanju novega znanja in prispeval k nadaljnjem razvoju grajenega okolja.

Selitev v našo novo stavbo je tako pomembna tudi zato, ker je sodelovanje ključ za znanstvene preboje, ki bodo družbi pomagali premagati podnebno krizo. Stavba pa nam ne bo olajšala le sodelovanja ampak omogočila tudi povečanje naše prisotnosti v mednarodnih mrežah. Vzpostavili smo že neformalno mednarodno mrežo, povezano s projekti spremljanja stanja konstrukcij v inovativnih lesenih stavbah. Združili smo se z univerzo Oregon State University, Univerzo na Primorskem in Univerzo v Helsinkih. Znotraj te mreže lahko uporabimo znanja s številnih strokovnih področij našega inštituta in tako pokažemo vrednost interdisciplinarnih znanosti na področju grajenega okolja. Neposredno bomo seznanjeni s podatki o nekaterih edinstvenih in inovativnih konstrukcijskih sistemih, s čimer bomo lahko razvili znanje in orodja za njihovo primerjavo, kar bomo lahko uporabili tudi za primerjavo z ostalimi projekti. Z namenom soustvarjanja zelene prihodnosti smo postali partnerji pobude Evropske komisije Novi evropski Bauhaus ter povezali raziskovalce in strokovnjake iz več kot 30 držav v novi akciji COST CA20139 – Holistični dizajn visokih lesenih zgradb.

Zavedamo se, da je dobro upravljanje organizacije pomembno za uspešno znanstveno in ostalo delo. Zato smo se leta 2021 prijavi na ocenjevanje Evropske fundacije za upravljanje kakovosti (EFQM) in s ponosom pridobili certifikat EFQM s štirimi zvezdicami. Navodila in priporočila, ki smo jih prejeli, že izvajamo. Pomagala nam bodo pri nadaljnjem izboljševanju naše poslovne in podporne dejavnosti.

Leto 2021 nam je prineslo še mnogo drugih stvari, od uglednih gostov, do novih mednarodnih in nacionalnih projektov, kakovostnih publikacij in patentov. Še posebej pa bi poudarila naše sodelovanje z industrijo. Neposredno sodelovanje z industrijskimi partnerji v Sloveniji in drugod smo več kot podvojili. S tem naše znanje širimo onkraj akademskega okolja in dejavno vplivamo na razvoj uporabe obnovljivih materialov v grajenem okolju.

Zaključila bi s tem, da sem bila izredno ponosna, ko sem slišala, da je bil InnoRenew CoE omenjen kot primer odličnosti v ekskluzivnem intervjuju z Marijo Gabriel, Evropsko komisarko za inovacije, raziskave, kulturo, izobraževanje in mladino na Nobelovem tednu. Trdo delo in predanost ekipe InnoRenew CoE odličnosti je bilo prepoznano tudi pri pogovorih na visoki ravni v Evropi. Še naprej si bomo prizadevali, da bomo z našim delom prispevali k ciljem trajnostnega razvoja Združenih narodov in prispevali k ambicioznim ciljem, ki si jih je zastavila Evropska unija. Z vsem naštetim bomo postavili osnovo za nadgradnjo dejavnosti prenosa znanja InnoRenew CoE v letu 2022 in kasneje.

Želim vam prijetno branje o aktivnostih in dosežkih InnoRenew CoE v letu 2021!

Dr. Andreja Kutnar

Foreword from the deputy director



2021 has been another year burdened with uncertainty. Upon reflection, it is hard to avoid the continued effect of the coronavirus and its global impact. However, I have been thinking about our situation — at InnoRenew CoE and as a society — in the context of sustainability. At InnoRenew CoE, sustainability is a deeply embedded concern — we focus research and innovation activities on providing it, measuring it and teaching about it. Sustainability is part of our identity and central to our continued success.

InnoRenew CoE's interdisciplinarity exists by design to address the intricacies of sustainable solutions. Our elected focus on renewable materials to improve the environmental impact of materials, products and buildings centers our work in the current (and, I suspect, future) political climate that has seen an urgent shift towards mitigating climate change. Yet, any solution will have broader impacts than simply reducing carbon emissions or any other indicator of environmental impact. The societal, individual and economic outcomes of these solutions are just as important as the environmental impact, and our expertise in these areas is growing.

The broad approach InnoRenew CoE takes to increasing sustainability is necessary; sustainability is complex, and it cannot be achieved simply by improving one element of a building or optimizing energy consumption. At InnoRenew CoE, we understand this complexity and use our expert work to address the many aspects of sustainability.

In 2021, we began working on new projects that take novel approaches to reduce the environmental impact of production, materials and building systems. We continued our work in these areas and others, like circularity, human health, energy efficient construction, building and material development and optimization, education, gender, aging, ICT solutions and impact assessment methods. We are fortunate to have excellent partners in industry and academia that complement our expertise and help deliver our research and innovation to society.

Finally, I must also consider InnoRenew CoE's sustainability as an institution. To continue doing our work, we must meet some standards of economic viability — we do that by applying for grants and seeking partnerships with businesses and the public sector. Choosing sustainability, buildings and renewable materials as core research areas has given us a relative sense of security in the available opportunities. Beyond opportunity, though, the expertise of our team and the quality of our work is what will ensure our sustainability — our ability to continue.

I'm confident the InnoRenew CoE team will continue to grow, continue to succeed and continue to surprise and inspire me with ingenuity, dedication and commitment to a better future for us all.

Predgovor namestnika direktorice

Leto 2021 je bilo še eno leto negotovosti. Ob pogledu nazaj se je težko izogniti nadaljujočim se učinkom koronavirusa po svetu. Kljub temu sem premišljeval o našem položaju – znotraj InnoRenew CoE in širše v družbi – v kontekstu trajnosti. Na InnoRenew CoE je trajnostno globoko zasidrano prizadevanje – raziskovalne in inovacijske dejavnosti usmerjamo v njeno zagotavljanje, merjenje in poučevanje o njej. Trajnosten je del naše identitete in je osrednjega pomena za naš nadaljnji uspeh.

Interdisciplinarnost InnoRenew CoE smo zasnovali z namenom, da se lahko posvetimo tudi podrobnostim trajnostnih rešitev. Naše zavestno osredotočenje na obnovljive materiale, s katerimi bi izboljšali vpliv materialov, izdelkov in stavb na okolje, umešča naše delo v sedanje (in domnevam, da tudi v prihodnje) politično ozračje, ki se vse bolj osredotoča na nujno ublažitev podnebnih sprememb. Zavedati pa se moramo, da bo imela vsaka rešitev širše učinke kot le zmanjšanje emisij ogljika ali katerega koli drugega kazalnika vpliva na okolje. Vplivi teh rešitev na družbo, posameznika in gospodarstvo so prav tako pomembni kot vplivi na okolje, naše strokovno znanje na teh področjih pa se povečuje.

Celoviti pristop, ki ga uporablja InnoRenew CoE pri povečevanju trajnosti, je nujen; trajnost je kompleksen koncept in je ni mogoče doseči zgolj z izboljšanjem enega sestavnih delov stavbe ali optimizacijo porabe energije v njej. V InnoRenew CoE razumemo to kompleksnost in si prizadevamo, da pri svojem strokovnem delu obravnavamo čim več vidikov trajnosti.

Leta 2021 smo pričeli z izvajanjem projektov, v katerih razvijamo izvirne pristope za zmanjševanje vpliva proizvodnje, materialov in stavbnih sistemov na okolje. Nadaljevali smo delo na teh in drugih področjih, kot so krožnost, človekovo zdravje, energijsko učinkovita gradnja, razvoj in optimizacija stavb in materialov, izobraževanje, problematika spolov, staranje, rešitve IKT in metode ocenjevanja učinka. Imamo srečo, da imamo odlične partnerje v industriji in akademski sferi, ki dopolnjujejo naše strokovno znanje ter pomagajo pri vpeljavi naših raziskav in inovacij v družbo.

Na koncu moram pogledati tudi na trajnost InnoRenew CoE kot institucije. Da bi lahko še naprej opravljali svoje delo, moramo izpolnjevati nekatere standarde gospodarske uspešnosti – to počnemo s pripravljanjem projektnih prijav ter iskanjem partnerstev s podjetji in javnim sektorjem. Izbira trajnosti, stavb in obnovljivih materialov kot osrednjih raziskovalnih področij nam je dala relativno dober občutek varnosti glede uspeha pri izkoriščanju priložnosti, ki so nam na voljo. Še bolj kot priložnosti pa je strokovno znanje naše ekipe in kakovost našega dela tisto, kar bo zagotovilo našo lastno trajnost in omogočilo nadaljevanje našega dela.

Prepričan sem, da bo ekipa InnoRenew CoE še naprej rastla, bo še naprej uspešna ter me še naprej presenečala in navdihovala z iznajdljivostjo, zavzetostjo in predanostjo boljši prihodnosti za vse nas.

Dr. Michael Burnard

A handwritten signature in blue ink, appearing to read 'M/Burnard'.

Vision, mission, values

InnoRenew CoE sees solutions to the climate crisis in the science of buildings and materials; however, many challenges remain: addressing sustainability in building construction, operation and use; optimizing renewable materials; understanding human patterns of behavior within the built environment; improving occupant well-being and enhancing social cohesion. Confronting these challenges through interdisciplinary science will allow us to construct a built environment that is sustainable, healthy and supports society's growing need for advanced building and renovation techniques. Success in this endeavor will be built upon the InnoRenew CoE foundation of scientific work, creativity, innovation, industry cooperation and societal engagement. Our vision is to be both a world leader in the interdisciplinary science of the built environment and a model for international research excellence, industrial collaboration and public engagement.

Mission InnoRenew CoE's mission is to advance the state of the art and achieve scientific and innovation excellence through interdisciplinary science, especially in our two key research areas: wood modification and restorative environmental and ergonomic design (REED).

Inclusion and diversity: We build on our inclusion and diversity to enable personal development, creativity and realization of ideas.

Sustainability: We believe that preservation of nature, environmental stewardship and sustainable development will advance human- and nature-friendly economic and social progress.

Integrity: We have personal integrity and integrity in our actions to ensure respect and dignity within our institute and with our partners, collaborators and communities.

Pursuit of excellence: We pursue excellence in all areas — science, industry and community — to bring innovative solutions that address global issues of renewability and sustainability.

Open science: We are committed to open science and engage in the free global exchange of knowledge through open access and dissemination of our research and results.

InnoRenew CoE vidi rešitve za podnebno krizo v znanosti, ki se posveča stavbam in materialom, kljub temu pa številni izzivi ostajajo: upoštevanje vidika trajnosti pri gradnji, obratovanju in uporabi stavb; optimiziranje obnovljivih materialov; razumevanje človeških vzorcev vedenja v okviru grajenega okolja; izboljšanje počutja prebivalcev in povečanje družbene kohezije. Obravnavanje teh izzivov na podlagi interdisciplinarne znanosti nam bo omogočilo ustvariti trajnostno in zdravo grajeno okolje, ki bo upoštevalo tudi naraščajoče potrebe družbe po naprednih tehnikah za obnovo in gradnjo. Uspeh teh prizadevanj se bo gradil na temelju znanstvenega dela v InnoRenew CoE, kreativnosti, inovativnosti, sodelovanja z industrijo in vključevanja družbe. Naša vizija je, da na področju interdisciplinarne znanosti, ki obravnava grajeno okolje, postanemo vodilna ustanova na svetu in zgled odličnosti za mednarodno raziskovanje, sodelovanje z gospodarstvom in vključevanje javnosti.

Poslanstvo Poslanstvo InnoRenew CoE je nadgrajevanje najsodobnejših znanstvenih in gospodarskih izsledkov z interdisciplinarnimi raziskavami ter prizadevanje za znanstveno in inovacijsko odličnost, in to še posebej na dveh osrednjih področjih našega raziskovanja: pri modifikaciji lesa in pri restorativnem okoljskem in ergonomskem oblikovanju (REED).

Vključenost in raznovrstnost: Gradimo na vključenosti in raznovrstnosti, kar nam omogoča osebnosti razvoj, ustvarjalnost in uresničevanje idej.

Trajnostnost: Verjamemo, da bodo ohranjanje narave, upravljanje z okoljem in trajnostni razvoj spodbudili človeku in naravi prijazen gospodarski in družbeni napredek.

Integriteta: Skrbimo za osebno integriteto in integriteto pri delovanju, da zagotovimo spoštovanje in dostojanstvo na lastnem inštitutu in v odnosu do naših partnerjev, sodelavcev ter skupnosti.

Prizadevanje za odličnost: Na vseh področjih – v znanosti, industriji in skupnosti – si prizadevamo za odličnost, da bi k svetovni problematiki obnovljivosti in trajnosti prispevali inovativne rešitve.

Odprta znanost: Zavezani smo odprti znanosti in vključevanju v brezplačno globalno izmenjavo znanja, k čemur prispevamo z odprtodostopnimi objavami in razširjanjem naših raziskav in rezultatov.

Organizational structure

The Renewable Materials and Healthy Environments Research and Innovation Centre of Excellence (InnoRenew CoE) was established on 15 February 2017 according to Article 2 provisions from the Institutes Act of Slovenia (Ur. L. RS 12/91, 8/96, 36/00 and 127/06) and the Contract of Establishment of the InnoRenew CoE Renewable Materials and Healthy Environments Research and Innovation Centre of Excellence dated 29 November 2016. InnoRenew CoE is a not-for-profit private institute (in Slovenian legislation, "neprofitni zasebni zavod").

InnoRenew CoE's organizational structure consists of the Assembly of Founders, Executive Board, Director and Council of Experts. Living Laboratory InnoRenew is an integrated organizational unit.

Assembly of Founders

- University of Primorska**
45.1% of the institute's capital
- Fraunhofer Institute for Wood Research, Wilhelm-Klauditz-Institut WKI**
24.9% of the institute's capital
- Institute for the Protection of Cultural Heritage of Slovenia**
15% of the institute's capital
- Slovenian National Building and Civil Engineering Institute**
15% of the institute's capital

Director
Prof. Andreja Kutnar, Ph.D.

Deputy Director
Assist. Prof. Michael Burnard, Ph.D.

Council of experts

- Duncan Mayes, Chair; Finland
- Mariapaola Riggio, Ph.D., Vice-chair; USA
- Petr Hajek, Ph.D.; Czech Republic
- Peter Niemz, Ph.D.; Switzerland
- Ritva Toivonen, Ph.D.; Finland
- Milan Vatovec, Ph.D.; USA

Direktorica
Prof. dr. Andreja Kutnar

Namestnik direktorice
Doc. dr. Michael Burnard

- Duncan Mayes, predsednik, Finska
- Dr. Mariapaola Riggio, podpredsednica, ZDA
- Dr. Petr Hajek, Češka
- Dr. Peter Niemz, Švica
- Dr. Ritva Toivonen, Finska
- Dr. Milan Vatovec, ZDA

Organizacijska struktura

InnoRenew CoE Center odličnosti za raziskave in inovacije na področju obnovljivih materialov in zdravega bivanjskega okolja (InnoRenew CoE) je bil ustanovljen 15. 2. 2017 na podlagi določil 2. člena Zakona o zavodih (Uradni list RS, št. 12/91, 8/96, 36/00 in 127/06) in pogodbe o ustanovitvi InnoRenew CoE Centra odličnosti za raziskave in inovacije na področju obnovljivih materialov in zdravega bivanjskega okolja, z dne 29. novembra 2016. InnoRenew CoE je neprofitni zasebni zavod.

Organizacijsko strukturo InnoRenew CoE sestavljajo skupščina ustanoviteljev, svet zavoda, direktorica in strokovni svet. Zavod ima tudi integrirano organizacijsko enoto Živi laboratorij InnoRenew.

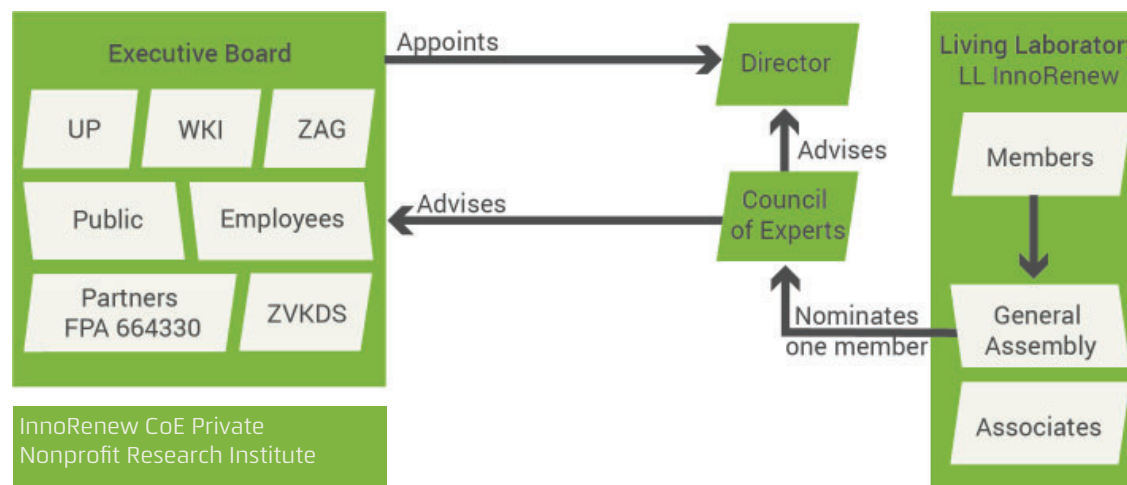
Ustanovitelji zavoda

- Univerza na Primorskem / Università del Litorale**
45,1 % kapitala zavoda
- Inštitut Fraunhofer Wilhelm-Klauditz (Fraunhofer WKI)**
24,9 % kapitala zavoda
- Javni zavod Republike Slovenije za varstvo kulturne dediščine**
15 % kapitala zavoda
- Zavod za gradbeništvo Slovenije**
15 % kapitala zavoda

Svet zavoda

- Prof. dr. Dragan Marušič;** Univerza na Primorskem
Predstavnik ustanoviteljev in predsednik
- Prof. dr. Klavdija Kutnar;** Univerza na Primorskem
Predstavnica ustanoviteljev
- Prof. dr. Bohumil Kasal;** Fraunhofer WKI
Predstavnik ustanoviteljev in podpredsednik
- Mag. Boris Deanovič;** Javni zavod Republike Slovenije za varstvo kulturne dediščine
Predstavnik ustanoviteljev
- Izr. prof. dr. Andraž Legat;** Zavod za gradbeništvo Slovenije
Predstavnik ustanoviteljev
- Mag. Mateja Mešl;** Inštitut za celulozo in papir
Predstavnica partnerjev
- Matej Gojčič;** Regionalna razvojna agencija Ljubljanske urbane regije
Predstavnik partnerjev
- Mag. Amy Noel Simmons;** InnoRenew CoE
Predstavnica zaposlenih
- Karolina Schlegel;** Ministrstvo za izobraževanje, znanost in šport Republike Slovenije
Predstavnica javnosti

Strokovni svet



Executive Board

- Prof. Dragan Marušič, Ph.D.;** University of Primorska
Founder representative and Chair
- Prof. Klavdija Kutnar, Ph.D.;** University of Primorska
Founder representative
- Prof. Bohumil Kasal, Ph.D.;** Fraunhofer WKI
Founder representative and Vice-chair
- Boris Deanovič, M.Sc.;** Institute for the Protection of Cultural Heritage of Slovenia
Founder representative
- Assoc. Prof. Andraž Legat, Ph.D.;** Slovenian National Building and Civil Engineering Institute
Founder representative
- Mateja Mešl, M.Sc.;** Pulp and Paper Institute
Partner representative
- Matej Gojčič;** Regional Development Agency of the Ljubljana Urban Region
Partner representative
- Amy Noel Simmons, M.Sc.;** InnoRenew CoE
Employee representative
- Karolina Schlegel;** Republic of Slovenia Ministry of Education, Science and Sport
Public representative

Annual Report

Employees

InnoRenew CoE welcomed four new employees in 2021, two scientists, one support and business development expert and one technician, which brought the institute's total to 74 employees (55 scientists, 14 support and business development experts and five technicians). InnoRenew CoE employees come from 19 countries, including Belgium, Bosnia and Herzegovina, China, Croatia, the Czech Republic, Finland, France, Hungary, India, Italy, Norway, Pakistan, Poland, Slovenia, Spain, Sweden, Thailand, Tunisia and the United States.

Employees in 2021

BIH	Zijada Adembegović Hujdurović Assistant researcher	PTA	Sidra Aslam Assistant researcher
SLO	Alijana Batič Project management – administrative support	SLO	Benjamin Božič Information technology support
USA SLO	Assist. Prof. Michael Burnard, Ph.D. Deputy director	SLO	Silva Poropat Cek Accountant
HUN	Balázs Dávid, Ph.D. Researcher	ITA	Prof. Diego De Leo, Ph.D. Researcher – scientific counsellor
USA	Assoc. Prof. David B. DeVallance, Ph.D. Research group leader – renewable materials composites	USA	Elizabeth Ann Dickinson Project management – grant writing and editing
SLO	Josip Dijanić Technician	SLO	Mateja Erce Assistant researcher
IND	Sudha Esakkimuthu Esakkiammal, Ph.D. Researcher	HUN	Gertrud Fábrián Information technology support
HUN	Edit Földvári-Nagy Technician	SLO	Assist. Prof. Igor Gavrić, Ph.D. Researcher
ESP	Oihana Goñi Gordobil, Ph.D. Researcher	SLO	Rudi Grahek Technician – mechanical engineering

Zaposleni

V letu 2021 je InnoRenew CoE zaposlil štiri nove sodelavce – dva na oddelku za raziskave, enega na oddelku za podporo in poslovni razvoj ter enega tehnika. Skupno število zaposlenih v letu 2021 je torej 74, od tega jih je 55 na oddelku za raziskave, 14 na oddelku za podporo in poslovni razvoj, pet pa je tehnikov. V InnoRenew CoE je 48 odstotkov vseh zaposlenih tujcev, ki prihajajo iz 19 držav – Belgije, Bosne in Hercegovine, Češke, Finske, Francije, Hrvaške, Indije, Italije, Kitajske, Madžarske, Norveške, Pakistana, Poljske, Slovenije, Španije, Švedske, Tajske, Tunizije in ZDA.

Zaposleni v letu 2021

HUN	László Hajdu Assistant researcher	CHN	Lei Han Assistant researcher
ESP	René Alexander Herrera Díaz, Ph.D. Researcher	SLO	Niki Hrovatin Assistant researcher
SLO	Miladin Jokić Technician	SLO	Kaja Kastelic Assistant researcher
SLO	David Kodarin Assistant project manager	SLO	Barbara Kotrle Administrative support
SLO	Albert Kravos Assistant researcher	HUN	Assoc. Prof. Miklós Krész, Ph.D. Research group leader – ICT in renewable materials and sustainable building
SLO	Prof. Andreja Kutnar, Ph.D. Director	ITA	Tania Langella, Ph.D. Researcher
SLO	Dean Lipovac Assistant researcher	FRA	Laetitia Marrot, Ph.D. Researcher
SLO	Tim Mavrič Assistant researcher	SLO	Marica Mikuljan Assistant researcher
FRA	Prof. Michael Mrissa, Ph.D. Researcher	FIN	Aarne Niemelä. Assistant researcher

SLO	Aleš Oven Assistant researcher	SLO	Jaka Gašper Pečnik Assistant researcher
BEL SLO	Kelly Peeters, Ph.D. Researcher	IND	Sasikala Perumal Laboratory Technician
SLO	Nastja Podrekar Loredan Assistant researcher	IND	Veerapandian Ponnuchamy, Ph.D. Researcher
THA SWE	Faksawat Poohphajai Assistant researcher	SLO	Eva Prelovšek Niemelä Assistant researcher
SLO	Lea Primožič Public relations	SLO	Assist. Prof. Rok Prislan, Ph.D. Researcher
CZE	Hana Remešová Assistant researcher and administrative support	SLO	Nežka Sajinčič Assistant researcher
POL	Assoc. Prof. Anna Sandak, Ph.D. Research group leader - wood modification	POL	Assoc. Prof. Jakub Sandak, Ph.D. Researcher
SLO	Matic Sašek Assistant researcher	NOR	Erwin M. Schau, Ph.D. Researcher
USA SLO	Assoc. Prof. Matthew Schwarzkopf, Ph.D. Researcher	CZE	Assoc. Prof. Václav Sebera, Ph.D. Researcher
USA	Amy Simmons Assistant researcher	SLO	Ana Slavec, Ph.D. Researcher and consulting statistician

SLO HRV	Assist. Prof. Darjan Smajla, Ph.D. Researcher	SLO	Vesna Starman Assistant researcher
SLO	Remi Stefanelli Human resources	SLO	Jerneja Svanjak Head of human resources
SLO	Prof. Nejc Šarabon, Ph.D. Research group leader - human health in the built environment	SLO	Karin Škergat Accountant
SLO	Nataša Škorja Djikanović Accountant	SLO	Tine Šukljan IT specialist and head of administration
SLO	Assist. Prof. Iztok Šušteršič, Ph.D. Research group leader - sustainable building with renewable materials	SLO	Črtomir Tavzes, Ph.D. Researcher
SLO	Aleksandar Tošič Assistant researcher	SLO	Tamara Turk Accountant
SLO	Julija Uršič Language editor	SLO	Domen Vake Information technology support
CZE	Jan Včelák, Ph.D. Researcher	SLO	Alenka Volk Project manager
TUN	Mariem Zouari Assistant researcher	SLO	Jure Žitnik Assistant researcher

Nineteen InnoRenew CoE employees are enrolled in doctoral programs, all of whom are supported by the institute in their academic and early research careers.

Employees enrolled in doctoral programs

1	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Sidra Aslam Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Computer Science)
2	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Mateja Erce Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Renewable Materials for Healthy Built Environments)
3	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	László Hajdu University of Szeged, Institute of Informatics
4	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Lei Han Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Renewable Materials for Healthy Built Environments)
5	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Niki Hrovatin Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Computer Science)
6	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Kaja Kastelic Faculty of Health Sciences, University of Primorska (Applied Kinesiology)
7	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Albert Kravos Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Renewable Materials for Healthy Built Environments)
8	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Dean Lipovac Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Renewable Materials for Healthy Built Environments)
9	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Tim Mavrič Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Renewable Materials for Healthy Built Environments)

V letu 2021 je bilo 19 zaposlenih v InnoRenew CoE vpisanih tudi na doktorski študij. Inštitut si namreč prizadeva podpirati svoje zaposlene na začetku njihovih akademskih in raziskovalnih poti.

Zaposleni vključeni v doktorske študijske programe

10	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Jaka Gašper Pečnik Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Renewable Materials for Healthy Built Environments)
11	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Nastja Podrekar Loredan Faculty of Health Sciences, University of Primorska (Applied Kinesiology)
12	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Faksawat Poohphajai Aalto University, Chemical Engineering
13	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Lea Primožič Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Renewable Materials for Healthy Built Environments)
14	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Nežka Sajinčič Faculty of Education, University of Primorska (Educational Sciences)
15	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Matic Sašek Faculty of Health Sciences, University of Primorska (Prevention for Health)
16	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Vesna Starman Faculty of Education, University of Primorska (Educational Sciences)
17	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Aleksandar Tošič Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Computer Science)
18	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Mariem Zouari Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Renewable Materials for Healthy Built Environments)
19	Employee/ Zaposleni : Faculty and university/ Fakulteta in univerza :	Jure Žitnik Faculty of Health Sciences, University of Primorska (Applied Kinesiology)

Research

InnoRenew CoE employs 55 researchers and assistant researchers, 47 of whom work within one of the institute's five research groups. The eight researchers and assistant researchers who work outside of a research group cover the fields of analytical chemistry, biotechnological wood modification, statistics, education, innovation management, international collaboration and science communication.

Each group covers its own field and is also interconnected across the institution.

Research groups

Human Health in the Built Environment / Človekovo zdravje v grajenem okolju

Human Health in the Built Environment group; main areas of activity: wood science, biopsychology, psychogeriatrics, psychology, kinesiology, green building certification, neurophysiology and data analytics. Dr. Nejc Šarabon is the group leader.

Človekovo zdravje v grajenem okolju; področja delovanja: znanost o lesu, biopsihologija, psihogeriatija, psihologija, kineziologija, certificiranje zelenih gradenj, nevrofiziologija in analiza podatkov. Vodja skupine je dr. Nejc Šarabon.

Inštitut zaposluje 55 raziskovalcev in raziskovalnih asistentov, od teh jih je 47 vključenih v raziskovalne skupine, osem pa jih deluje zunaj njih. Ti raziskovalci in raziskovalni asistenti pokrivajo različna področja, od analitične kemije in biotehnoških postopkov modifikacije lesa prek statistike in šolskega izobraževanja do menedžmenta inovacij, mednarodnega sodelovanja in komuniciranja znanosti.

Ob ustanovitvi inštituta InnoRenew CoE leta 2017 je bilo zasnovanih pet raziskovalnih skupin.

Raziskovalne skupine

Wood Modification / Modifikacija lesa

Wood Modification group; main areas of activity: wood science and technology, chemistry, physics, material science and lifelong learning. Dr. Anna Sandak is the group leader.

Modifikacija lesa; področja delovanja: znanost o lesu in tehnologija lesa, kemija, fizika, znanost o materialih in vseživljenjsko učenje. Vodja skupine je dr. Anna Sandak.

Renewable Materials Composites / Kompoziti iz obnovljivih materialov

Renewable Materials Composites group; main areas of activity: bio-based composites, wood mechanics, nondestructive evaluation, material characterization and adhesion of materials. Dr. David B. DeVallance is the group leader.

Kompoziti iz obnovljivih materialov; področja delovanja: kompoziti, narejeni na osnovi biotskih materialov, mehanika lesa, neporušno vrednotenje, karakterizacija materialov in njihove adhezivnosti. Vodja skupine je dr. David B. DeVallance.

ICT in Renewable Materials and Sustainable Building /

Informacijske in računalniške tehnologije na področju obnovljivih materialov in trajnostne gradnje

ICT in Renewable Materials and Sustainable Building group; main areas of activity: information and communication technologies, information engineering and applied mathematics. Dr. Miklós Krész is the group leader.

Informacijske in računalniške tehnologije na področju obnovljivih materialov in trajnostne gradnje; področja delovanja: informacijske in komunikacijske tehnologije, informacijski inženiring in uporabna matematika. Vodja skupine je dr. Miklós Krész.

Research projects

In 2021, InnoRenew CoE carried out 43 projects, five of which were under InnoRenew CoE's coordination. The Slovenian Research Agency (ARRS) financed 28 of these projects: eight basic, one postdoctoral and 19 bilateral projects (four with the United States, two with Austria, two with Bosnia and Herzegovina, two with Hungary, two with Norway, one with Denmark, one with Estonia, one with Finland, one with France, one with Italy, one with Lithuania and one with Turkey).

InnoRenew CoE also achieved a targeted research project co-financed by ARRS and Slovenia's Ministry of Economic Development and Technology (MGRT). In addition, one project was financed by the European Regional Development Fund and the Republic of Slovenia's Ministry of Education, Science and Sport; one project was funded by the Republic of Slovenia's Ministry of Agriculture, Forestry and Food and one project was funded by the Republic of Slovenia's Ministry of Education, Science and Sport.

InnoRenew CoE had three projects funded by the European Union-Horizon 2020, Marie Skłodowska-Curie Actions Individual Fellowships; two projects funded by the European Union-Erasmus+; two projects funded by the European Union-ForestValue and four projects funded by the European Union-Horizon 2020.

In October 2021, InnoRenew CoE became the coordinator of COST Action CA20139 - Holistic Design of Taller Timber Buildings.

All projects acquired by InnoRenew CoE in 2021 are presented below, and the table that follows lists all the institute's continuing projects.

Sustainable Building with Renewable Materials /

Trajnostna gradnja z obnovljivimi materiali

Sustainable Building with Renewable Materials group; main areas of activity: architectural and engineering design and consulting on larger timber buildings, diverse life cycle assessments, complex acoustic engineering and cultural heritage. Dr. Iztok Šušteršič is the group leader.

Trajnostna gradnja z obnovljivimi materiali; področja delovanja: arhitekturno ter inženirsko projektiranje in svetovanje pri večjih lesenih stavbah, analiza življenjskega cikla (LCA), akustično projektiranje in kulturna dediščina. Vodja skupine je dr. Iztok Šušteršič.

Raziskovalni projekti

V letu 2021 je InnoRenew CoE izvajal 43 projektov (pet kot koordinator), od tega jih 28 financira Javna agencija za raziskovalno dejavnost RS (ARRS), in sicer osem temeljnih projektov, en podoktorski projekt in 19 bilateralnih projektov (štiri z ZDA, po dva z Avstrijo, Madžarsko, Bosno in Hercegovino ter Norveško in po enega z Italijo, Turčijo, Estonijo, Dansko, Litvo, Francijo in Finsko).

Poleg tega je InnoRenew CoE v letu 2021 dobil ciljno raziskovalni projekt, ki ga sofinancirata ARRS in Ministrstvo za gospodarski razvoj in tehnologijo (MGRT). Izvajali so tudi projekt, ki ga financirata Evropski sklad za regionalni razvoj in Ministrstvo za izobraževanje, znanost in šport RS (MIZŠ), projekt, ki ga financira Ministrstvo za kmetijstvo, gozdarstvo in prehrano Republike Slovenije (MKGP) in projekt, ki ga financira Ministrstvo za izobraževanje, znanost in šport RS (MIZŠ).

V InnoRenew CoE so izvajali še tri projekte financirane iz programa MSCA - Marie Skłodowska-Curie Individual Fellowships (program Obzorja 2020), dva projekta financirana iz programa Erasmus+, dva projekta financirana iz programa ForestValue in štiri projekte financirane iz programa Obzorje 2020.

V oktobru 2021 je InnoRenew CoE postal tudi koordinator akcije COST CA20139 - Holistični dizajn visokih lesenih zgradb.

V nadaljevanju so predstavljeni vsi projekti, pridobljeni v letu 2021, v tabeli pa še projekti, katerih aktivnosti so potekale tudi letos, a so bili pridobljeni v prejšnjih letih.



Economic, environmental and social aspects of wood processing and its use and carbon sequestration

PROJECT LEADER: Balázs Dávid, PhD

PERIOD: 01.09.2021 – 28.02.2023

FINANCING: Slovenian Research Agency (ARRS)

PARTNERS: InnoRenew CoE (Slovenija);
Slovenian Forestry Institute (Slovenija);
Pulp and Paper Institute (Slovenija)

Wood from sustainably managed forests is a renewable source of material and energy that stores carbon over its lifetime while consuming significantly fewer fossil resources in its extraction and processing than other materials. Slovenia is a leader in softwood industrial timber production and a strong net exporter of unprocessed roundwood. The processing chains are not optimized, and there are opportunities to improve Slovenia's position in several areas, with concomitant loss of full information on economic, environmental, and social performance. In this project, researchers will upgrade the system and develop a model that will allow multi-criteria optimization of timber volumes for processing across the entire forestry, wood and paper sector for a long-term policy that is coordinated with the widest range of stakeholders. The model will be based on development needs, businesses, and investment plans of various stakeholders, with a holistic evaluation of different scenarios for the development of wood extraction, processing and use in Slovenia.

InnoRenew CoE project activities: InnoRenew CoE will prepare a report outlining the results of an LCA on wood products compared to non-wood products, a simulation model for wood redistribution in the wood processing industry and a description of optimal wood utilization scenarios with environmental impacts. Further, researchers will prepare results of the optimized wood redistribution model in the wood processing industry.

Ekonomski, okoljski in družbeni vidiki predelave in rabe lesa in v njem vezanega ogljika

VODJA PROJEKTA: dr. Balázs Dávid

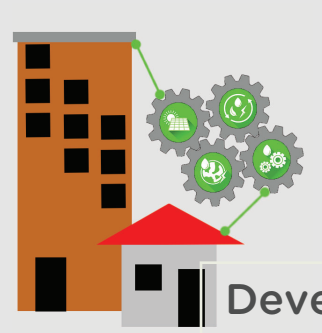
TRAJANJE: 1. 9. 2021 – 28. 2. 2023

FINANCIRANJE: ARRS

PARTNERJI: InnoRenew CoE (Slovenija);
Gozdarski inštitut Slovenije (Slovenija);
Inštitut za celulozo in papir (Slovenija)

Les, pridobljen iz trajnostno gospodarjenih gozdov, je obnovljiv vir materiala in energije, ki v življenjski dobi v sebi skladišči ogljik, hkrati pa pri pridobivanju in predelavi porabimo bistveno manj fosilnih virov kot pri drugih materialih. V Sloveniji prevladuje proizvodnja industrijskega lesa iglavcev, smo izrazit neto izvoznik nepredelanega okroglega lesa, pri proizvodnji okroglega lesa iglavcev prevladuje skupina hlodov za žago in furnir, pri listavcih pa les za kurjavo. V Sloveniji so predelovalne verige neoptimizirane, s čimer izgubljammo številne priložnosti za izboljšanje položaja na več področjih, hkrati pa zaradi izgube ključnih podatkov o tokovih lesa in proizvodnih procesih izgubljammo polne informacije o ekonomskih, okoljskih in družbenih rezultatih. Predlagani projekt bo sistem nadgradil in pripravil model, ki bo omogočil večkriterijsko optimizacijo količin lesa za predelavo v celotnem sektorju gozdarstva, lesarstva in papirništva (GLP) ter s tem pripomogel k dolgoročni in z najširšim krogom deležnikov usklajeno politiko. Model bo temeljil na razvojnih potrebah, poslovnih in investicijskih načrtih različnih deležnikov ter bo omogočal celostno ovrednotenje različnih scenarijev razvoja pridobivanja, predelave in rabe lesa v Sloveniji.

Glavne aktivnosti InnoRenew CoE na projektu: InnoRenew CoE bo pripravil poročilo z rezultati analize LCA lesnih proizvodov v primerjavi z ostalimi, model za prerezporejanje lesa v lesnopredelovalni industriji, opis scenarijev optimalne rabe lesa ter pripravil rezultate optimiziranega modela prerezporejanje lesa v lesnopredelovalni industriji.



Development of multi-objective optimisation algorithms for the design of buildings

PROJECT LEADER: Balázs Dávid, PhD

PERIOD: 01.03.2021 – 28.02.2023

FINANCING: Slovenian Research Agency (ARRS)

PARTNERS: InnoRenew CoE (Slovenia),
University of Pécs (Hungary)

The goal of this cooperation is the development of a multi-objective optimisation tool that considers optimisation questions simultaneously and provides multiple good-quality solution options with different possible trade-offs between these objectives. This tool will integrate mathematical modelling, combinatorial optimisation and artificial intelligence (AI) techniques in order to advance the ED method, ensuring de facto optimal buildings, performing at the highest energy efficiency and comfort level. Structural design procedures will be analysed for buildings of various types and uses, and a common group of crucial optimisation questions will be identified as a result. As these underlying optimisation problems are NP-hard, even independently, the integrated tool will most likely rely heavily on heuristics and metaheuristics to obtain good-quality approximate solutions. The efficiency of the developed tool will be tested both on artificial instance sets and real-life use-cases.

InnoRenew CoE project activities: InnoRenew CoE will develop the multi-objective optimisation tool, which will include both the mathematical modelling of the arising optimisation problems and development of efficient solution methods (applying AI and combinatorial optimisation) for them. InnoRenew CoE will also implement a simulation environment for testing and validation of the developed tool.

Razvoj algoritmov večparametrške optimizacije za načrtovanje večnamenskih stavb

VODJA PROJEKTA: dr. Balázs Dávid

TRAJANJE: 1. 3. 2021 – 28. 2. 2023

FINANCIRANJE: ARRS

PARTNERJI: InnoRenew CoE (Slovenija),
Univerza v Pécsu (University of Pécs) (Madžarska)

Namen tega projekta je razvoj večparametrškega optimizacijskega orodja, ki sočasno zajema različne optimizacijske izzive in rešitev zagotavlja z različnimi kompromisi med optimizacijskimi parametri. Orodje bo združevalo matematično modeliranje, kombinacijsko optimizacijo in umetno inteligenco, namenjeno napredku pri metodi ED, ki bo zagotavljal dejansko optimalno zgradbo z največjo energetske učinkovitostjo. Postopki projektiranja konstrukcij bodo analizirani za zgradbe različnih tipov in namenov, kot rezultat pa bodo opredeljena ključna optimizacijska vprašanja. Kersoposamezni optimizacijski problemi v ozadju že sami po sebi NP-težki, bo razvito orodje najverjetneje temeljilo na hevrstičnih in metahevrstičnih pristopih za iskanje približnih rešitev zadostne kvalitete. Učinkovitost razvitih orodij bo tudi testirana tako na generiranih kot na dejanskih primerih projektiranja v praksi.

Glavne dejavnosti InnoRenew CoE pri projektu: V InnoRenew CoE bodo razvili večparametrška optimizacijska orodja, ki zajemajo matematično modeliranje, reševanje optimizacijskih problemov in razvoj rešitev ob uporabi umetne inteligence in kombinacijske optimizacije. Implementirali bodo tudi simulacijsko okolje za testiranje in validacijo razvitih orodij.



Modified lignin nanoparticles for composite and bio-based/Cu packaging applications (PACK-NIN)

PROJECT LEADER: Esakkiammal Sudha Esakkimuthu, PhD

PROJECT SUPERVISOR: David B. DeVallance, PhD

PERIOD: 01.04.2021 – 31.03.2023

FINANCING: EU, Horizon 2020-H2020-MSCA-IF-2020 Marie Skłodowska-Curie Individual Fellowship (Standard European Fellowships)

PROJECT COORDINATOR: InnoRenew CoE (Slovenia)

Polymer consumption is increasing in end-user industries such as packaging, household appliances, construction and automobiles. Comparing different applications, packaging alone accounts for nearly 42% of total polymer consumption. Polymers used in packaging has risen from 5 million tons to 100 million tons within the past 60 years. The number of polymers used in food packaging is especially noticeable due to convenience over traditional single-component glass and metal packaging. Polylactic acid (PLA) is among the most widely used polymers in plastic films, bottles and biodegradable medical devices. However, PLA exhibits some limitations—slow crystallization, poor thermal stability, lose tensile strength upon water absorbance and high cost. PLA's physicochemical properties can be overcome via incorporation with different polymers, like biomass-based polymer (lignin) that has shown much potential. Lignin has been used as a filler with PLA to enhance thermal stability, UV properties and tensile strength. PACK-NIN will focus on incorporating Cu/lignin nanoparticle into the PLA matrix to enhance compatibility, bonding interaction and evaluate the antimicrobial activity of the synthesized composites. PACK-NIN proposes to develop a sustainable bio-nanocomposite that provides breakthroughs for advancing lignin use in food packaging and other composite applications.

InnoRenew CoE project activities: This is a Marie Skłodowska-Curie Individual Fellowship awarded to Dr Esakkiammal Sudha Esakkimuthu to carry out the PACK-NIN project under the mentorship of Dr David DeVallance within InnoRenew CoE's Renewable Materials Composites research group. In addition to her scientific contributions, Dr Esakkimuthu will mentor young researchers, organize events and manage projects.

Modificirani nanodelci lignina za uporabo v kompozitnih embalažah na biološki osnovi (PACK-NIN)

VODJA PROJEKTA: dr. Esakkiammal Sudha Esakkimuthu

MENTOR PROJEKTA: dr. David B. DeVallance

TRAJANJE: 1. 4. 2021 – 31. 3. 2023

FINANCIRANJE: EU, Obzorje 2020 – H2020-MSCA-IF-2020 Marie Skłodowska-Curie Individual Fellowship (Standard European Fellowships)

KOORDINATOR PROJEKTA: InnoRenew CoE (Slovenija)

Uporaba polimerov se v industriji končnih izdelkov, kot so embalaža, gospodinjstvi aparati, gradbeništvo in avtomobili, vse bolj povečuje. Primerjava različnih uporab polimerov kaže, da samo embalaža predstavlja skoraj 42 odstotkov celotne porabe. Polimeri, uporabljeni v embalaži, so se v zadnjih 60 letih povečali s pet na sto milijonov ton. Še posebej opazno je število polimerov, uporabljenih v živilski embalaži, kar lahko pripišemo njihovi cenovni ugodnosti v primerjavi s tradicionalno enokomponentno stekleno in kovinsko embalažo. Najpogosteje se uporablja polietilen, polipropilen in – predvsem za plastične folije, steklenice in biološko razgradljive medicinske pripomočke – polilaktična kislina (PLA). Vendar ima PLA nekatere slabosti, kot so počasna kristalizacija, slaba toplotna stabilnost, izguba natezne trdnosti zaradi absorpcije vode in visoki stroški. Fizikalno-kemijske lastnosti PLA je mogoče izboljšati z vključevanjem različnih polimerov, kakršen je tudi polimer na osnovi biomase (lignin), ki izkazuje veliko zmogljivost. Lignin se uporablja s PLA kot polnilo za povečanje toplotne stabilnosti, UV-lastnosti in natezne trdnosti. Pri projektu PACK-NIN se bodo posvetili vključevanju nanodelcev Cu/lignin v matriko PLA, da bi povečali združljivost in medsebojne vezi ter ovrednotili protimikrobne aktivnosti sintetiziranih kompozitov. Pri tem načrtujejo razvoj trajnostnega bionanokompozita, ki bo zagotovil večjo uporabo lignina v živilski embalaži in drugih kompozitnih uporabah.

Glavne dejavnosti InnoRenew CoE pri projektu: Projekt je pridobila dr. Esakkiammal Sudha Esakkimuthu na razpisu Marie Skłodowska-Curie Individual Fellowship, izvajala pa ga pod mentorstvom dr. Davida DeVallancea v okviru raziskovalne skupine Kompoziti iz obnovljivih materialov v InnoRenew CoE. Ob znanstvenem delu bo dr. Esakkimuthu tudi mentorirala mlade raziskovalce, organizirala dogodke in vodila projekte.



Green synthesis of sustainable BIO-sourced multi-functional ingredient for skin CARE applications (BIO4CARE)

PROJECT LEADER: Oihana Gordobil, PhD

PROJECT SUPERVISOR: Anna Sandak, PhD

PERIOD: 01.05.2021 - 30.04.2023

FINANCING: EU, Horizon 2020-H2020-MSCA-IF-2020 Marie Skłodowska-Curie Individual Fellowship (Standard European Fellowships)

PROJECT COORDINATOR: InnoRenew CoE (Slovenia)

The personal care and cosmetics market is driven by skin care products that are designed for beautifying, preventing skin from imperfections and protecting skin against the damaging effect of UV rays. Skin care formulations have water and oil as the main components in addition to other chemical functional ingredients.

Regular use of skin care products results in chemical compounds continuously being released into the environment, which poses a serious threat to ecosystems and human health. Current social awareness and demand for cosmetic products based on natural ingredients is forcing the industry and scientific community to search for safe and sustainable solutions. To that end, research on lignin polymer's diverse intrinsic functional and bioactive properties has led to increased interest in this bio-sourced compound for skin care applications. BIO4CARE tackles challenging concepts with innovative solutions to develop an efficient lignin-based multi-functional ingredient able to work as a surfactant, UV filter, antioxidant and preservative for cosmetics and health care products by utilizing the valorization of an undervalued kraft-pulping by-product.

InnoRenew CoE project activities: This is a Marie Skłodowska-Curie Individual Fellowship awarded to Dr Oihana Gordobil to carry out the BIO4CARE project under the mentorship of Dr Anna Sandak within InnoRenew CoE's Wood Modification research group. In addition to her scientific contributions, Dr Gordobil will mentor young researchers, organize events and manage projects under BIO4CARE's umbrella at InnoRenew CoE.

Zelena sinteza trajnostne večnamenske biosestavine za nego kože (BIO4CARE)

VODJA PROJEKTA: dr. Oihana Gordobil

MENTORICA PROJEKTA: dr. Anna Sandak

TRAJANJE: 1. 5. 2021 - 30. 4. 2023

FINANCIRANJE: EU, Obzorje 2020 - H2020-MSCA-IF-2020 Marie Skłodowska-Curie Individual Fellowship (Standard European Fellowships)

KOORDINATOR PROJEKTA: InnoRenew CoE (Slovenija)

Na trgu za osebno nego in kozmetiko prevladujejo izdelki za nego kože, ki so namenjeni polepšanju, omilitvi pomanjkljivosti kože in zaščiti kože pred škodljivimi učinki UV-žarkov. Glavne sestavine formulacije za nego kože pogosto temeljijo na vodi in olju. Poleg tega pa ti izdelki vsebujejo še kemične sestavine. Zaradi uporabe teh izdelkov se kemične spojine nenehno sproščajo v okolje, kar resno ogroža ekosisteme in zdravje ljudi. Trenutna družbena ozaveščenost in povpraševanje po kozmetičnih izdelkih na osnovi naravnih sestavin spodbujata industrijo in znanstveno skupnost k iskanju varnih in trajnostnih rešitev. Prav to je sprožilo tudi raziskave o funkcionalnih in bioaktivnih lastnostih polimera lignina, ki je pridobljen iz naravnih virov. BIO4CARE se z inovativnimi rešitvami ukvarja z zahtevnimi koncepti za razvoj učinkovite večnamenske sestavine na osnovi lignina, ki lahko deluje kot površinsko aktivna snov, UV-filter, antioksidant ter konzervans za kozmetiko in zdravstvene izdelke z uporabo valorizacije podcenjenega stranskega proizvoda sulfatne celuloze.

Glavne dejavnosti InnoRenew CoE pri projektu: To je projekt, ki ga je pridobila dr. Oihana Gordobil na razpisu Marie Skłodowska-Curie Individual, izvajala pa ga bo pod mentorstvom dr. Anne Sandak in v okviru raziskovalne skupine Modifikacija lesa v InnoRenew CoE. Ob znanstvenem delu bo dr. Oihana Gordobil tudi mentorirala mlade raziskovalce, organizirala dogodke in vodila projekte.



Optimization and fault forecasting in port logistics processes using artificial intelligence, process mining and operations research

PROJECT LEADER: Miklós Krész, PhD

PERIOD: 01.03.2021 – 28.02.2023

FINANCING: Slovenian Research Agency (ARRS)

PARTNERS: InnoRenew CoE (Slovenia); University of Pannonia, Faculty of Information Technology (Hungary)

Appropriate resource allocation and logistics scheduling have an impact on both their cost and ecological footprint. However, despite well-scheduled logistics operations, a decrease in resource performance or a faulty resource may have severe consequences that can influence the precision of a distribution operation, the quality of the products to deliver, the number/cost of the required resources or the environmental impact of the process. Thus, decreasing probability and/or minimizing impact of a faulty resource on the schedule are important aspects of logistics planning. Traditional solutions in logistics apply methodologies of operations research (mathematical programming or heuristics) that provide access to efficient solution packages. However, the dynamically changing environment in port operations needs to adapt these dynamics in the models and methods. Smart logistics is based on data collection from sensors and IoT, a technology that is also available in port operations. Currently, automatic data processing and decision-making face new challenges that result in the emergence of new optimization problems on large data sets. The objective of this project is to develop smart optimization solutions for logistics in port operations. As expected, results aim to provide a novel approach for a unified framework to develop data-driven solutions for the optimization of port logistics problems through system modelling and analysis, mathematical and data science modelling and integration of operations research machine learning and process mining.

InnoRenew CoE project activities: InnoRenew CoE will identify and study problems in port logistics where smart solutions are possible for monitoring processes, developing system models and a decision support framework for the identified problems with respect to the integration of data analytics and optimization approaches, testing the solutions on real-world and simulated data sets and analyzing the results.

Optimizacija in napovedovanje napak v pristaniških logističnih procesih z uporabo umetne inteligence, procesnega rudarjenja in operacijskih raziskav

VODJA PROJEKTA: dr. Miklós Krész

TRAJANJE: 1. 3. 2021 – 28. 2. 2023

FINANCIRANJE: ARRS

PARTNERJI: InnoRenew CoE (Slovenija), Fakulteta za informacijsko tehnologijo, Univerza v Panoniji (Műszaki Informatikai Kar, Pannon Egyetem) (Madžarska)

Na stroške in ekološki odtis virov pomembno vplivata njihova ustrežna razporeditev in načrtovanje logističnih procesov. A kljub dobro načrtovanim logističnim operacijam lahko resne posledice prineseta zmanjšana zmogljivost ali okvara virov. To namreč vpliva na natančnost distribucijskega postopka, kakovost izdelkov, ki jih je treba dostaviti, število/stroške potrebnih virov ali na okoljski vpliv procesa. Zmanjšanje verjetnosti okvare vira in/ali vpliva napak pri načrtovanju sta zato pomembna vidika logističnega načrtovanja. Tradicionalne rešitve v logistiki uporabljajo metodologijo operacijskega raziskovanja (matematično programiranje ali heuristika), ki vključuje dostop do bogate strokovne literature in prinaša učinkovite svežnje rešitev. Vendar pa mora dinamično spreminjajoče se okolje pri pristaniških dejavnostih to dinamiko prilagoditi tudi v modelih in metodah. Pametna logistika temelji na senzorjih za zbiranje podatkov in IoT, tehnologiji, ki je na voljo tudi pri pristaniških dejavnostih. Dandanes se samodejna obdelava podatkov in odločanje soočata z novimi izzivi, zaradi česar se pojavljajo novi problemi z optimizacijo velikih naborov podatkov. Cilj projekta je, da z integracijo strojnega učenja, rudarjenja procesov in operacijskega raziskovanja razvijemo pametne optimizacijske rešitve za logistiko v pristaniških dejavnostih.

Glavne dejavnosti InnoRenew CoE pri projektu: Naloge InnoRenew CoE bodo ugotavljanje in proučevanje tistih logističnih problemov pristanišč, pri katerih obstaja možnost vključevanja pametnih rešitev za spremljanje procesov, razvoj sistemskih modelov in okvirov za podporo pri odločitvah glede ugotovljenih težav, vezanih na vključevanje podatkovnih analitik in optimizacijskih pristopov, testiranje rešitev v živo in testiranje simuliranih podatkovnih nizov ter analiziranje rezultatov.



Olive leaf multi product cascade-based biorefinery: From an under-used biomass in the primary sector to tailor-made solutions for high added-value international market applications (OLEAF4VALUE)

PROJECT LEADER: Jakub Sandak, PhD

PERIOD: 01.07.2021 – 30.06.2024

FINANCING: EU, Horizon 2020 – Bio-based Industries

PROJECT COORDINATOR: Natac Biotech SL (Spain)

PARTNERS: Natac Biotech SL (Spain); Oleicola El Tejar Nuestra Señora de Araceli (Spain); Ingecor Agroforestal SL (Spain); InnoRenew CoE (Slovenia); Fundacion Cener (Spain); Instituto Politecnico de Bragança (Portugal); Biochemize SL (Spain); Università degli studi di Firenze (Italy); Nizo Food Research BV (Netherlands); Martin-Luther-University Halle-Wittenberg (Germany); Havforskninginstituttet (Norwegian Institute of Marine Research) (Norway); Mibelle AG (Switzerland); Eurizon SL (Spain); Zero Emissions Engineering BV (Netherlands); NNFC Limited (United Kingdom); Mowi Feed AS (Norway)

OLEAF4VALUE is a three-year project that will develop a complete valorization system for the olive leaf. Globally, 4.5 million tons of olive leaves are produced annually by the olive oil industry, a key industry in southern Europe and along the Mediterranean coast. This recalcitrant biomass represents a problem for both farmers and the whole industry as it needs to be removed from the fields and olive oil mills. Currently, this biomass is burned, given to cattle or, in some cases, combusted to produce energy. OLEAF4VALUE will set up the basis for a smart value chain based on a newly developed 4.0 concept, Smart Dynamic Multi-Valorization-Route Biorefinery (SAMBIO), for the cascade valorization of olive leaf biomass according to its physicochemical composition, particularly modulated by specific pretreatments to produce target products. Advanced green extraction and isolation technologies will be used to sequentially separate all valuable fractions and compounds with a zero-waste approach according to end-user market needs from high-value sectors: food, feed, health, cosmetics, pharma and chemicals.

InnoRenew CoE project activities: InnoRenew CoE will lead development and implementation of efficient, low-cost and portable sensors for olive leaf screening, development and validation of chemometric models that merge reference data with VIS-NIR spectra and development of a Biomass Suitability Index for olive leaves' physical and chemical properties. InnoRenew CoE will also conduct smart supply chain analysis for the investigated biomass and develop efficient optimization methods based on its identified unique characteristics.

Kaskadna biorefinerija izdelkov iz oljčnih listov: od neuporabljene biomase v primarnem sektorju do prilagojenih rešitev za uporabo na mednarodnem trgu z visoko dodano vrednostjo (OLEAF4VALUE)

VODJA PROJEKTA: dr. Jakub Sandak

TRAJANJE: 1. 7. 2021 – 30. 6. 2024

FINANCIRANJE: EU, Obzorje 2020 – Bio-Based Industries

KOORDINATOR PROJEKTA: Natac Biotech SL (Španija)

PARTNERJI: Natac Biotech SL (Španija); Oleicola El Tejar Nuestra Señora de Araceli (Španija); Ingecor Agroforestal SL (Španija); InnoRenew CoE (Slovenija); Fundacion Cener (Španija); Instituto Politecnico de Bragança (Portugalska); Biochemize SL (Španija); Università degli studi di Firenze (Italija); Nizo Food Research BV (Nizozemska); Martin-Luther-University Halle-Wittenberg (Nemčija); Havforskninginstituttet (Norwegian Institute of Marine Research) (Norveška); Mibelle AG (Švica); Eurizon SL (Španija); Zero Emissions Engineering BV (Nizozemska); NNFC Limited (Združeno Kraljestvo); Mowi Feed AS (Norveška)

OLEAF4VALUE je triletni projekt, katerega namen je razviti celoten sistem valorizacije oljčnih listov. Industrija oljčnega olja – med pomembnejšimi so v Južni Evropi in ob sredozemski obali – letno proizvede 4,5 milijona oljčnih listov. Ta neuporabljena biomasa povzroča kmetom in celotni industriji oljčnega olja težave, saj jo morajo v postopku pridelave oljčnega olja odstraniti s polj in iz mlinov. Dandanes oljčne liste zažigajo na poljih, uporabljajo kot krmo za govedino, v nekaterih primerih pa sežigajo z namenom pridobivanja energije. Cilj projekta OLEAF4VALUE je vzpostavitev osnovne pametne vrednostne verige – ta temelji na konceptu 4.0: Smart Dynamic Multi-Valorization-Route Biorefinery (SAMBIO) – za kaskadno valorizacijo oljčnih listov glede na njihovo fizikalno-kemijsko sestavo, posebej prirejeno s posebnimi predobdelavami za proizvodnjo ciljnih izdelkov. Napredne tehnologije za zeleno ekstrakcijo in izolacijo bodo uporabljene za ločevanje vseh dragocenih frakcij in spojin s postopkom brez proizvodnje odpadkov (zero-waste) in na podlagi potreb trga končnih uporabnikov na področju pomembnih panog: živilske, krmne, zdravstvene, kozmetične, farmacevtske in kemične industrije.

Glavne dejavnosti InnoRenew CoE pri projektu: InnoRenew CoE bo zadolžen za razvoj in uporabo učinkovitih in nizkocenovnih prenosnih senzorjev za preiskovanje oljčnih listov, za razvoj in uporabo kemometričnih modelov, ki združujejo referenčne podatke s spektri VIS-NIR, ter za razvoj indeksa primernosti biomase (Biomass Suitability Index) za fizične in kemijske lastnosti oljčnih listov.



Reverse logistics network of residual wood biomass

PROJECT LEADER: Jakub Sandak, PhD

PERIOD: 01.12.2021 - 30.11.2024

FINANCING: Slovenian Research Agency (ARRS)

PROJECT COORDINATOR: Sieć Badawcza Łukasiewicz, Institute of Logistics and Warehousing (Poland)

PARTNERS: InnoRenew CoE (Slovenia); Vienna University of Technology (Austria)

VODJA PROJEKTA: dr. Jakub Sandak

TRAJANJE: 1. 12. 2021 - 30. 11. 2024

FINANCIRANJE: ARRS

KOORDINATOR PROJEKTA: Sieć Badawcza Łukasiewicz - Institute of Logistics and Warehousing (Poljska)

PARTNERJI: InnoRenew CoE (Slovenija); Vienna University of Technology (Avstrija)


Optimization problems in the reverse logistics network of residual wood biomass will be modelled as the output of the project, and efficient solution methods will be implemented. As these models and methods will consider the multi-objective nature of these relevant optimization questions, they will have both an environmental and economic impact. Companies will be able to utilize them to decrease their environmental footprint (e.g., reduce the amount of resources sent for landfill or incineration, decrease the number of trucks used and distance traveled) as well as streamline their economic efficiency (e.g., optimize transportation routes, save inventory or truck space with efficient packing schemes). The developed methods will be tested in a simulation framework, which also has the potential to be expanded into a decision support system in the future. This will allow the simulation of various scenarios with different parameter set-ups and provide multiple good-quality suggestions to end-users for a given problem instance. Real-world and simulated information connected to the availability of residual wood biomass will also be collected through empirical studies. The study of this data will reveal unique characteristics and patterns that can be generalized for other biomass supply chains, making it easier to produce randomized realistic test instances for future research.

InnoRenew CoE project activities: InnoRenew CoE researchers will contribute to the analysis of the reverse wood value chain and identification of its most important optimization problems. They will also assist in development of mathematical models and exact algorithms for their solutions as well as implement a simulation environment where large-scale testing of both exact and approximate algorithms will be possible.

V okviru projekta bodo raziskovalci modelirali optimizacijske probleme povratne logistike ostankov lesne biomase in implementirali učinkovite metode za njihovo rešitev. Končni cilj projekta je razvoj modelov in metod, ki upoštevajo tako okoljski kot ekonomski vidik. Rezultati projekta bodo tako namenjeni zmanjšanju okoljskega odtisa (npr. zmanjšanju količine virov za sežig ali odlagališče, zmanjšanje števila uporabljenih tovornjakov in prevožene razdalje), kot tudi izboljšanju ekonomske učinkovitosti (npr. optimizacija prevoznih poti, uporaba učinkovitih pakirnih shem za prihranek prostora v tovornjaku ali skladišču). Razvite metode bodo intenzivno testirane v simuliranem okolju, z možnostjo nadaljnega razvoja v sistem za podporo odločanju. Tak napreden sistem omogoča simulacijo različnih scenarijev na osnovi različnih nastavitvenih parametrov. Na osnovi empirične študije bodo zbrani podatki o razpoložljivosti ostankov lesne biomase, ki izvirajo tako iz primerov realnega sveta, kot tudi iz razvite simulacije. Preučevanje teh podatkov lahko razkrije edinstvene značilnosti in vzorce, ki jih je mogoče posplošiti tudi na druge dobavne verige biomase, kar olajša razvoj realističnih testnih instanc za nadaljnje raziskave.

Glavne dejavnosti InnoRenew CoE pri projektu: InnoRenew CoE bo prispeval k analizi povratne verige vrednosti lesa in identifikaciji njenih najpomembnejših problemov optimizacije. Pomagal bo tudi pri razvoju matematičnih modelov in natančnih algoritmov za njihovo rešitev ter izvedbo simulacijskega okolja, kjer bo mogoče obsežno testiranje natančnih in približnih algoritmov.

Povratna logistika biomase lesnih ostankov



Enhanced Life-Cycle-Costing in wood construction by novel methods for service life planning (WoodLCC)

PROJECT LEADER: Anna Sandak, PhD

PERIOD: 01.05.2022 – 30.04.2025

FINANCING: European Union – ForestValue Research Programme and Republic of Slovenia's Ministry of Education, Science and Sport

PROJECT COORDINATOR: University of Göttingen, Department of Wood Biology and Wood Products (Germany)

PARTNERS: Norwegian Institute of Wood Technology (Norway), Norwegian Institute of Bioeconomy Research (Norway), Tallinn University of Technology (Estonia), InnoRenew CoE (Slovenia), Lund University (Sweden), Miebach (Germany), ZRS Architekten (Germany), Holzbau Deutschland (Germany), Finnlog OÜ (Finland), Estonian Woodhouse Association (Estonia), Estonian Forest and Wood Industries Association (Estonia), TreFokus (Norway), Swedish Wood (Swedish), TMF (Swedish), Sweco Norge AS (Swedish), Norconsult Informasjonssystemer AS (Norway), Lumar IG (Slovenia)

WoodLCC will enable robust and precise life-cycle-costing (LCC) based on input from novel models for detailed service life performance specification for wooden components and buildings. The project has two hypotheses: 1) Improved service life input data will enable more precise and robust LCC for wood-based products, resulting in significantly improved economic and environmental impact, and 2) LCC will find common acceptance only if reliable input data are available and complemented with knowledge about user expectations. Therefore, a holistic approach will be used to integrate service life data in LCC analysis instruments. The outcome will be the WoodLCC data platform.

WoodLCC will use results from novel methods for detailed service life performance specification established through extensive past research on dose/response functions for exterior wood elements. WoodLCC's novelty is the optimization of the LCC input data for wood-based building products.

InnoRenew CoE project activities: InnoRenew CoE will deliver a demo plugin for BIM software for estimation of LCC that is adopted for the specific needs of timber structures. The service life simulation that is indispensable for reliable LCC analysis will be implemented at three levels of complexity. All levels will be objectively validated to determine the novel tool's reliability and assure compatibility with real-life cases, with the overall objective to achieve a realistic service life scenario (RSLs) for timber structures and elements.

Nove metode za načrtovanje življenjske dobe lesa v leseni gradnji z izboljšanim vrednotenjem stroškov življenjskega cikla (WoodLCC)

VODJA PROJEKTA: dr. Anna Sandak

TRAJANJE: 1. 5. 2022 – 30. 4. 2025

FINANCIRANJE: Evropska unija – ForestValue Research Programme in Ministrstvo za izobraževanje, znanost in šport Republike Slovenije

KOORDINATOR PROJEKTA: University of Göttingen, Department of Wood Biology and Wood Products (Nemčija)

PARTNERJI: Norwegian Institute of Wood Technology (Norveška), Norwegian Institute of Bioeconomy Research (Norveška), Tallinn University of Technology (Estonija), InnoRenew CoE (Slovenija), Lund University (Švedska), Miebach (Nemčija), ZRS Architekten (Nemčija), Holzbau Deutschland (Germany), Finnlog OÜ (Finska), Estonian Woodhouse Association (Estonija), Estonian Forest and Wood Industries Association (Estonija), TreFokus (Norveška), Swedish Wood (Švedska), TMF (Švedska), Sweco Norge AS (Švedska), Norconsult Informasjonssystemer AS (Norveška), Lumar IG (Slovenija)

Glavni cilj projekta WoodLCC je omogočiti zanesljivo in natančno računanje stroškov življenjskega cikla (Life-Cycle-Costing LCC) lesa na podlagi vhodnih podatkov. Podatki bodo izvzeti iz novih modelov za podrobno specifikacijo učinkovitosti življenjske dobe lesenih komponent in lesenih stavb. WoodLCC bo v celoti izkoristil rezultate novih metod za podrobno specifikacijo zmogljivosti lesa skozi njegovo življenjsko dobo. Omenjene metode so bile vzpostavljene z obsežnimi raziskavami o odnosu med dozo in odzivom (dose-response relationship) za zunanje lesene elemente. Novost WoodLCC je optimizacija vhodnih podatkov za LCC lesenih gradbenih proizvodov.

Glavne aktivnosti InnoRenew CoE pri projektu: InnoRenew bo za programsko opremo BIM pripravil demo vtičnik za oceno LCC, ki bo prilagojen posebnim potrebam lesenih konstrukcij. Simulacija življenjske dobe, ki je nujna za zanesljivo analizo LCC, bo izvedena na treh ravneh zahtevnosti. Vse bodo objektivno preverjene in tako zagotovile zanesljivost novega orodja in združljivost z dejanskimi primeri v praksi. Cilj je doseči realistični scenarij življenjske dobe za lesene konstrukcije in njihove elemente.



Tree bark as a renewable source of wood protection materials for building applications (BarkBuild)

PROJECT LEADER: David B. DeVallance, PhD

PERIOD: 01.02.2022 – 31.01.2025

FINANCING: European Union – ForestValue Research Programme and Republic of Slovenia's Ministry of Education, Science and Sport

PROJECT COORDINATOR: Stockholms universitet (Sweden)

PARTNERS: Latvian State Institute of Wood Chemistry (Latvia), InnoRenew CoE (Slovenia), Teknologian tutkimuskeskus VTT (Finland), Norsk Institutt for Bioøkonomi (Norway), Warsaw University of Life Sciences (Poland)

Bark protects trees from physical, mechanical and biochemical degradation; however, it is generally considered a low-value waste material from log processing. Within the EU-27 countries, there are approximately 23 million metric tons of tree bark available as an untapped lignocellulosic side-stream that does not compete with food production. The BarkBuild project will use spruce and birch bark as resources to develop new wood treatment formulations and bark-based composites for wooden building materials. Specifically, bark polyphenols and extractives will be used as components within coatings for wood preservatives, fire-retardants and VOC absorbents as well as binder additives within novel biodegradable polymer composites. The project will evaluate and demonstrate the sustainability, safety and potential for the cascading use of bark-derived, modified wood products within the built environment. Demonstration of the final materials should facilitate increased use of wood for construction and building while ensuring safe indoor spaces and preservation of the environment.

InnoRenew CoE project activities: InnoRenew CoE will investigate bark-derived activated carbon and nanoparticle filler materials for both use as composite panel coatings that absorb VOCs and performance evaluation of wood-based composites that include various bark-derived coatings. In addition, InnoRenew COE researchers will assist in the techno-economic analysis and perform life cycle assessment (LCA) of the final coating systems and composites.

Drevesna skorja kot obnovljiv vir za zaščito lesenih gradbenih materialov (BarkBuild)

VODJA PROJEKTA: dr. David B. DeVallance

TRAJANJE: 1. 2. 2022 – 31. 1. 2025

FINANCIRANJE: Evropska unija – ForestValue Research Programme in Ministrstvo za izobraževanje, znanost in šport Republike Slovenije

KOORDINATOR PROJEKTA: Stockholms universitet (Švedska)

PARTNERJI: Latvian State Institute of Wood Chemistry (Latvija), InnoRenew CoE (Slovenija), Teknologian tutkimuskeskus VTT (Finska), Norsk Institutt for Bioøkonomi (Norveška), Warsaw University of Life Sciences (Poljska)

Skorja ščiti drevesa pred fizično, mehansko in biokemično razgradnjo. Kljub temu pa se pri predelavi hlodovine ta večinoma uporablja kot odpadni material z nizko vrednostjo. V 27 državah EU je na voljo približno 23 milijonov ton drevesne skorje, ki nastane kot stranski proizvod lignoceluloze in ki ne konkurira proizvodnji hrane. Cilj projekta BarkBuild je uporabiti smrekovo in brezovo lubje kot vir za razvoj novih formulacij za obdelavo lesa in kompozitov na osnovi skorje za lesene gradbene materiale. Natančneje, polifenole in ekstrakte iz skorje bodo uporabljali kot sestavine v zaščitnih premazih za les, zaviralce ognja, absorbent za hlapne organske spojine ter vezivne dodatke v novih biološko razgradljivih polimernih kompozitih. Projekt naznanja varnost in možnost kaskadne uporabe modificiranih lesnih proizvodov, pridobljenih iz skorje, v grajenem okolju. Končni materiali bodo omogočali večjo uporabo lesa v gradbeništvu in stavbah, hkrati pa zagotovili varne notranje prostore.

Glavne aktivnosti InnoRenew CoE pri projektu: V okviru projekta bodo raziskovalci InnoRenew CoE raziskoval aktivni ogljik in polnila iz skorje ter nanodelce za uporabo kot premaze, ki absorbirajo hlapne organske spojine, za kompozitne plošče in ocenjevali delovanje lesnih kompozitov, ki vključujejo različne premaze iz skorje. Poleg tega bodo pomagali pri tehnično-ekonomski analizi in opravili ocene življenjskega cikla (LCA) za končno razvite premazne sisteme in kompozite.

Title / Naslov:	Protection of bronze monuments in the changing environment
Leader / Vodja:	Jakub Sandak
Period / Trajanje:	01.07.2018 - 30.06.2021
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	Institute for the Protection of Cultural Heritage of Slovenia; Slovenian National Building and Civil Engineering Institute
Title / Naslov:	Traversability of vertex-transitive graphs
Leader / Vodja:	Miklós Krész
Period / Trajanje:	01.07.2018 - 30.06.2021
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	University of Primorska, Andrej Marušič Institute; University of Primorska, Faculty of Mathematics, Natural Sciences and Information Technologies; University of Ljubljana, Faculty of Education
Title / Naslov:	Selective extraction of high value molecules from forest products processing residues in the speciality chemicals sector
Leader / Vodja:	Andreja Kutnar
Period / Trajanje:	01.07.2019 - 30.06.2022
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE (coordinator); Jožef Stefan Institute; ARHEL projektiranje in inženiring d.o.o.; University of Ljubljana, Faculty of Pharmacy; University of Primorska, Andrej Marušič Institute
Title / Naslov:	Using questionnaires to measure attitudes and behaviours of buildings users
Leader / Vodja:	Ana Slavec
Period / Trajanje:	01.07.2019 - 30.06.2022
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE
Title / Naslov:	Optimisation for sustainable supply chains
Leader / Vodja:	Andreja Kutnar
Period / Trajanje:	01.04.2019 - 31.03.2022
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE; Institute for Computer Science and Control, Hungarian Academy of Sciences

Title / Naslov:	Design of multifunctional polysaccharide composite nanoparticles for deacidification, strength improvement and prevention of microbial attack of historical cellulose-based artifacts (DeacidCellulose)
Leader / Vodja:	Matthew John Schwarzkopf
Period / Trajanje:	01.07.2019 - 30.06.2022
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	University of Maribor, Faculty of Mechanical Engineering (coordinator); National and University Library; Institute for the Protection of Cultural Heritage of Slovenia; InnoRenew CoE
Title / Naslov:	Spectroscopy and multivariate data analysis for quality control of modified wood
Leader / Vodja:	Anna Malgorzata Sandak
Period / Trajanje:	01.09.2018 - 31.12.2022
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE; University of Modena and Reggio Emilia
Title / Naslov:	Synchrotron-based analysis of densified wood impregnated with curing resins
Leader / Vodja:	Matthew John Schwarzkopf
Period / Trajanje:	01.10.2018 - 30.09.2021
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE; Forest Products Laboratory
Title / Naslov:	Perception and performance assessment in bio-based architecture
Leader / Vodja:	Anna Malgorzata Sandak
Period / Trajanje:	01.10.2018 - 31.12.2022
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE; Oregon State University, Department of Wood Science and Engineering
Title / Naslov:	Perceptions of, competencies, capacities and possibilities for the implementation of environment- and human health-friendly living environments
Leader / Vodja:	Andreja Kutnar
Period / Trajanje:	15.01.2019 - 31.12.2022
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE; Institute for Protection and Ecology of the Republic of Srpska

Title / Naslov:	Strategies for improvement of energy efficiency of residential buildings through retrofiting
Leader / Vodja:	Anna Malgorzata Sandak
Period / Trajanje:	15.01.2019 – 31.12.2022
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE; Faculty of Architecture, Civil Engineering and Geodesy, University of Banja Luka
Title / Naslov:	Seismic analysis of tall timber buildings
Leader / Vodja:	Iztok Šušteršič
Period / Trajanje:	01.10.2019 – 30.09.2021
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE; Colorado School of Mines
Title / Naslov:	Innovation activities of Austrian and Slovenian companies in the wood-value chain
Leader / Vodja:	Ana Slavec
Period / Trajanje:	01.01.2020 – 31.12.2022
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE; Institute for System Sciences, Innovation and Sustainability Research, University of Graz
Title / Naslov:	Optimization problems of the residual biomass value chain
Leader / Vodja:	Jakub Michal Sandak
Period / Trajanje:	01.01.2020 – 31.12.2022
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE; Vienna University of Technology
Title / Naslov:	Enhanced Wood Properties of Low-Grade Timber Through Densification Coupled with Natural, Plant-Based Polymers
Leader / Vodja:	Matthew John Schwarzkopf
Period / Trajanje:	01.07.2020 – 30.06.2023
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE; Karadeniz Teknik Universitesi
Title / Naslov:	Wood chip technology for livestock heavy use areas to improve water quality
Leader / Vodja:	David B. DeVallance
Period / Trajanje:	01.10.2019 – 30.09.2021
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE; University of Vermont Extension Center for Sustainable Agriculture

Title / Naslov:	Boosting a novel and innovative tRaining approaCh of Key Enabling Technologies (BRACKET)
Leader / Vodja:	David B. DeVallance
Period / Trajanje:	01.05.2018 – 31.04.2021
Financing / Financiranje:	European Union, Erasmus+
Partners / Partnerji:	Institut za razvoj i međunarodne odnose; Danmar Computers sp z o.o.; Technologiko Ekpedeftiko Idryma T Danmar Computers sp z o.o.; Technologiko Ekpedeftiko Idryma Thessalias; Asociacion Empresarial De Investigacion Centro, Tecnológico Del Muebley La Madera De La Region De Murcia; Biedriba Eurofortis; Ljudska univerza Rogaška Slatina
Title / Naslov:	Wood and wood products over a lifetime (WOOLF)
Leader / Vodja:	Iztok Šušteršič
Period / Trajanje:	01.12.2018 – 31.11.2021
Financing / Financiranje:	European Union, European Regional Development Fund (ERDF) call for proposals to support research and development projects (TRL 3-6) and the Republic of Slovenia Ministry of Education, Science and Sport
Partners / Partnerji:	M SORA, trgovina in proizvodnja d.d. (principal consortium partner); Gozdarski inštitut Slovenije; InnoRenew CoE; L-TEK elektronika d.o.o.; REM montaža in kleparstvo d.o.o.; Univerza v Ljubljani, Biotehniška fakulteta; XLAB razvoj programske opreme in svetovanje d.o.o.; Zavod za gradbeništvo Slovenije
Title / Naslov:	Development of novel functional proteins and bioactive ingredients from rapeseed, olive, tomato and citrus fruit side streams for applications in food, cosmetics, pet food and adhesives (Pro-Enrich)
Leader / Vodja:	Matthew John Schwarzkopf
Period / Trajanje:	01.05.2018 – 30.10.2021
Financing / Financiranje:	European Union, Horizon 2020–Bio-based Industries Joint Undertaking
Partners / Partnerji:	Danish Technological Institute (coordinator); Bangor University; InnoRenew CoE; Gea Group; Anecoop Sociedad Cooperativa; Tailorzyme Aps; Agro Business Park As; Emmelev As; Vertech Group; Franka Marzi; Chimar Hellas Ae; Innovarum; Olivar De Segura; Mars GmbH; Natac Biotech Sl; Tate & Lyle
Title / Naslov:	FAçade bio-CARbon based anti UV coating to prevent DEterioration of wooden buildings (FAÇADE)
Leader / Vodja:	Laetitia Marrot
Period / Trajanje:	01.04.2020 - 31.03.2022
Financing / Financiranje:	EU, Horizon 2020 - Marie Skłodowska-Curie Action Individual Fellowship
Coordinator/ Koordinator Projecta:	InnoRenew CoE (Slovenia)

Title / Naslov:	Underpinning the vital role of the forest-based sector in the Circular Bio-Economy (WoodCircus)
Leader / Vodja:	Michael David Burnard
Period / Trajanje:	01.11.2018 - 31.12.2021
Financing / Financiranje:	European Union, Horizon 2020
Partners / Partnerji:	VTT Technical Research Centre of Finland Ltd (coordinator); Institut Technologique FCBA; InnoRenew CoE; Nova-Institut GMBH; Fundacion Tecnalia Research & Innovation; Consorzio Del Mobile SCPA; LUONNONVARAKESKUS; INNOVAWOOD ASBL; Sahateollisuus ry; AlfaNatura d.o.o.; Asociación Basquegur; Consorzio Nazionale per la raccolta; il recupero e il riciclaggio degli imballaggi di legno - Rilegno; EGOIN SA; Forest-Based Sector Technology Platform; European Panel Federation AISBL; Veolia France; SAIB
Title / Naslov:	Pilots for Healthy and Active Ageing (Pharaon)
Leader / Vodja:	Michael David Burnard
Period / Trajanje:	01.12.2019 - 31.11.2023
Financing / Financiranje:	European Union, Horizon 2020
Partners / Partnerji:	Sant'Anna (Coordinator); Hewlett Packard Italiana Srl; Fondazione Casa Sollievo Della Sofferenza; Up Umana Persone; Co-Robotics Srl; Orthokey Italia Srl; Asociacion Empresarial De Investigacion Centro Tecnologico Del Muebley La Madera De La Region De Murcia; Servicio Murciano De Salud; Universidad Politecnica De Cartagena; My Energia Oner Sl; Consejeria De Igualdad Y Politicas Sociales De La Junta De Andalucia; Universidad De Jaen; Fundacion Ageing Social Lab; Robotnik Automation Sll; Indra Sistemas Sa; Irmandade Da Santa Casa Da Misericordia Da Amadora Ips; Universidade Da Beira Interior; Caritas Diocesana De Coimbra; Universidade De Coimbra; Maastricht Instruments; Roessingh Research And Development Bv; Stichting Nationaal Ouderenfonds; Universiteit Twente; Adsysco B.V.; InnoRenew CoE; National Institute for Public Health; Dom Upokojencev Izola - Casa Del Pensionato Isola; Ericsson Nikola Tesla D.D.; Ascora Gmbh; Stelar Security Technology Law Research Ug; Gip Autonom'lab; Information Catalyst For Enterprise Ltd; Age Platform Europe; Minds & Sparks Gmbh; Domalys Sas; Glintt - Healthcare Solutions, S.A; Senlab d. o. o.; Sentab Estonia Ou; Tallinna Tehnikaulikool; Din Deutsches Institut Fuer Normung E.V.; Uninfo - Associazione Di Normazione Informatica

Title / Naslov:	Dynamic Response of Tall Timber Buildings under Service Load (DynaTTB)
Leader / Vodja:	Iztok Šušteršič
Period / Trajanje:	01.03.2019 - 30.09.2022
Financing / Financiranje:	European Union, ForestValue Research Programme and Republic of Slovenia Ministry of Education, Science and Sport
Partners / Partnerji:	RISE Research Institutes of Sweden (coordinator); NTNU Norwegian University of Science and Technology; University of Exeter; University of Ljubljana; Innorenew CoE; Centre Scientifique et Technique du Bâtiment; Linnaeus University; Moelven Töreboda AB; SWECO Norge AS avd Lillehammer; Smith and Wallwork Engineers Ltd; GALEO; Eiffage Immobilier; ARBONIS
Title / Naslov:	CLICKdesign delivering fingertip knowledge to enable service life performance specification of wood
Leader / Vodja:	Jakub Sandak
Period / Trajanje:	01.03.2019 - 31.05.2022
Financing / Financiranje:	European Union, ForestValue Research Programme and Republic of Slovenia Ministry of Education, Science and Sport
Partners / Partnerji:	BRE Building Research Establishment (coordinator); University of Goettingen; Lund University; VTT Technical Research Centre of Finland; InnoRenew CoE; Institute Technological FCBA; Norwegian Institute of Bioeconomy Research; Biology of Insect; FPInnovations; Hygiène Office
Title / Naslov:	Development of new practices for forest property management and strengthening of all its functions
Leader / Vodja:	Črtomir Tavzes
Period / Trajanje:	09.07.2020 - 09.07.2022
Financing / Financiranje:	Republic of Slovenia Ministry of Agriculture, Forestry and Food
Partners / Partnerji:	InnoRenew CoE; Farm Volk; School Center Postojna; Farm Jernejevi; Farm Žustovi, Marko Mahne - holder of supplementary activity on the farm; Farm Morelj; Education Tamara Urbančič s.p.; Forest Owners Association Vrhe-Vremščica (Slovenia)
Title / Naslov:	DESIGN for all methods to cREate age-friendly housing (DESIRE)
Leader / Vodja:	Nejc Šarabon
Period / Trajanje:	01.12.2020 - 30.11.2022
Financing / Financiranje:	EU, Erasmus +
Partners / Partnerji:	Slovak University of Technology in Bratislava (Slovakia), Institute of Ethnology Slovak Academy of Sciences (Slovakia); Asociacion Empresarial de Investigacion Centro Tecnologico del Muebley la Madera de la Region de Murcia (Spain); SHINE2EUROPE, LDA (Portugal); InnoRenew CoE (Slovenia)

Title / Naslov:	Influence of doweled connection on the dynamic response of tall timber buildings
Leader / Vodja:	Iztok Šušteršič
Period / Trajanje:	01.11.2020 - 31.10.2022
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE (Slovenia); Norwegian University of Science and Technology (Norway)
Title / Naslov:	Valorisation of hemp by-products for composite applications
Leader / Vodja:	David B. DeVallance
Period / Trajanje:	01.11.2020 - 31.10.2022
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE (Slovenia); Tallinn University of Technology (Estonia)
Title / Naslov:	Combining indoor environmental quality with human movement science to improve school quality
Leader / Vodja:	Nejc Šarabon
Period / Trajanje:	01.11.2020 - 31.10.2022
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE (Slovenia); Norwegian University of Life Sciences (Norway)
Title / Naslov:	Comparison of sound field characterization methods
Leader / Vodja:	Rok Prislan
Period / Trajanje:	01.11.2020 - 31.10.2022
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE (Slovenia); Technical University of Denmark (Denmark)
Title / Naslov:	Understanding hygroscopic properties of wood through multiscale modelling (HYGRO-WOOD)
Leader / Vodja:	Veerapandian Ponnuchamy
Period / Trajanje:	01.11.2020 - 31.10.2022
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE (Slovenia); Lithuanian Energy Institute (Lithuania)

Title / Naslov:	Autonomic edge computing for air quality monitoring
Leader / Vodja:	Micheal Mrissa
Period / Trajanje:	01.09.2020 - 31.08.2023
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	UP FAMNIT; Institute for the Protection of Cultural Heritage of Slovenia
Title / Naslov:	Reducing occupant stress through improved indoor environmental quality and the use of renewable materials indoors
Leader / Vodja:	Michael David Burnard
Period / Trajanje:	01.11.2020 - 31.10.2022
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	InnoRenew CoE (Slovenia); Natural Resources Institute Finland (Finland)
Title / Naslov:	Graph Theory and Combinatorial Scientific Computing
Leader / Vodja:	Miklós Krész
Period / Trajanje:	01.01.2021 - 31.12.2023
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	Faculty of Computer and Information Science, University of Ljubljana (Slovenia); InnoRenew CoE (Slovenia); Jožef Stefan Institute (Slovenia); Alfréd Rényi Institute of Mathematics (Hungary)
Title / Naslov:	NOvel ModificatiOn tReatments to improvE wood resistance against FiRE (NOMOREFiRE)
Leader / Vodja:	René Alexander Herrera Díaz
Period / Trajanje:	01.01.2021 - 31.12.2022
Financing / Financiranje:	Slovenian Research Agency (ARRS) - PHC Proteus program
Partners / Partnerji:	InnoRenew CoE (Slovenia); Institute of Analytical Sciences and Physico-Chemistry for Environment and Materials - IPREM - at the University of Pau and Pays de l'Adour (France)
Title / Naslov:	Development of multi-objective optimisation algorithms for the design of buildings
Leader / Vodja:	Balázs Dávid
Period / Trajanje:	01.03.2021 - 28.02.2023
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	University of Pécs (Hungary)

Title / Naslov:	Olive leaf multi-product cascade-based biorefinery: From an under-used biomass in the primary sector to tailor-made solutions for high added-value international market applications (OLEAF4VALUE)
Leader / Vodja:	Jakub Michal Sandak
Period / Trajanje:	01.07.2021 - 30.06.2024
Financing / Financiranje:	European Union, Horizon 2020-Bio-based Industries Joint Undertaking
Partners / Partnerji:	Natac Biotech SL; Oleicola El Tejar Nuestra Señora de Araceli; Ingecor Agroforestal SL; InnoRenew CoE; Fundacion Cener; Instituto Politecnico de Bragança; Biochemize SL; Universita degli studi di Firenze; Nizo Food Research BV; Martin-Luther-University Halle-Wittenberg; Norwegian Institute of Marine Research; Mibelle AG; Eurizon SL; Zero Emissions Engineering BV; NNFCC Limited; Mowi Feed AS

Title / Naslov:	Green synthesis of sustainable BIO-sourced multi-functional ingredient for skin CARE applications (BIO4CARE)
Leader / Vodja:	Oihana Gordobil
Period / Trajanje:	01.05.2021 - 30.04.2023
Financing / Financiranje:	European Union, Horizon 2020-Marie Skłodowska-Curie Actions Individual Fellowship
Partners / Partnerji:	InnoRenew CoE

Title / Naslov:	Modified lignin nanoparticles for composite and bio-based/Cu packaging applications (PACK-NIN)
Leader / Vodja:	Sudha Esakkiammal
Period / Trajanje:	01.04.2021 - 30.03.2023
Financing / Financiranje:	European Union, Horizon 2020-Marie Skłodowska-Curie Actions Individual Fellowship
Partners / Partnerji:	InnoRenew CoE

Title / Naslov:	Optimization and fault forecasting in port logistics processes using artificial intelligence, process mining and operations research
Leader / Vodja:	Miklós Krész
Period / Trajanje:	01.03.2021 - 28.02.2023
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	University of Pannonia, Faculty of Information Technology

Title / Naslov:	KOCles 3.0
Leader / Vodja:	Andreja Kutnar
Period / Trajanje:	14.05.2021 - 31.10.2022
Financing / Financiranje:	Slovenia Ministry of Economic Development and Technology
Partners / Partnerji:	Zavod Lesarski grozd; Podgorje d.o.o.; Stilles d.o.o.; M Sora d.d.; Lip Bledmd.o.o.; Alples d.d.; Marles hiše Maribor d.o.o.; Murales d.d.; Lumar IG d.o.o.; Hit Preless d.o.o.; Mizarstvo Florjančič d.o.o.; Bobiš Yacht Interior d.o.o.; Riko hiše d.o.o.; Alpod d.o.o.; Gašper trženje d.o.o.; Doors d.o.o.; Bestwood d.o.o.; L.ASK d.o.o.; Gonzaga-pro d.o.o.; Marles PSP d.o.o.; Pohištvo Poločnik Aleš Potošnik s.p.; Maremico d.o.o.; Mlinar pohištvo d.o.o.; Alfa Natura d.o.o.; CBD d.o.o.; Univerza v Ljubljani; Fakulteta za Dizajn, samostojni visokošolski zavod, pridružena članica UP; Gospodarska zbornica Slovenije - Združenje lesne in pohištvene industrije

Title / Naslov:	Reverse logistics network of residual wood biomass
Leader / Vodja:	Jakub Sandak
Period / Trajanje:	01.12.2021 - 30.11.2024
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	Sieć Badawcza Łukasiewicz, Institute of Logistics and Warehousing; Vienna University of Technology

Title / Naslov:	Economic, environmental and social aspects of wood processing and its use and carbon sequestration
Leader / Vodja:	Balázs Dávid
Period / Trajanje:	01.09.2021 - 28.02.2023
Financing / Financiranje:	Slovenian Research Agency (ARRS)
Partners / Partnerji:	Slovenian Forestry Institute; Pulp and Paper Institute

Grant applications

InnoRenew CoE submitted 51 funding proposals in 2021. The total budget of all submitted proposals was €22,202,298.52. Currently, there are 11 pending proposals (five national, six international) with a potential budget for InnoRenew CoE of €13,593,333.72. For the remainder, there were 33 unsuccessful proposals (€7,351,955.80) and seven successful proposals (€1,187,582.50) for the year.

National

Thirty proposals were submitted to national calls for a total budget of €5,634,115.55. From this, 29 proposals were submitted to the Slovenian Research Agency (ARRS). Most of these proposals involved basic projects (17), five were postdoctoral projects, two were applied projects, one was an infrastructure project, one was a target research program and two were research programs. In addition, InnoRenew CoE submitted one application for a bilateral project. InnoRenew CoE successfully submitted a proposal with consortium partners to Slovenia's Ministry of Economic Development and Technology (MGRT) to establish a competence center.

International

There were 21 international funding applications submitted for a total budget of €16,500,469.72. Eight of these applications were submitted to Horizon Europe, four of which listed InnoRenew CoE as the coordinator. Other applications were submitted to the Erasmus+ program (two), ForestValue program (nine), ERC Consolidator Grant (one) and M-Era.Net program (one).

Prijave na razpise

V letu 2021 je InnoRenew CoE na razpise prijavil 51 projektov. Skupna vrednost vseh oddanih vlog znaša 22.202.298,52 EUR. V evalvaciji je še enajst prijav (pet nacionalnih in šest mednarodnih), v vrednosti 13.595.333,72 EUR za InnoRenew CoE. Triintrideset prijav (v vrednosti 7.351.955,80 EUR) je bilo za InnoRenew CoE v letu 2021 neuspešnih, sedem predlogov pa je bilo odobrenih, in sicer v vrednosti 1.187.582,50 EUR.

Prijave na nacionalne razpise

Na slovenske razpise je bilo vloženih 30 predlogov za financiranje (v skupni vrednosti 5.631.115,55 EUR), od tega jih je bilo 29 vloženih na Javno agencijo za raziskovalno dejavnost RS (ARRS). Med prijavi na ARRS so prevladovale vloge za osnovne projekte (17), oddana pa sta bila tudi dva temeljna projekta, en infrastrukturni projekt, en ciljni raziskovalni program, dva raziskovalna programa in pet podoktorskih projektov. V letu 2021 je bila oddana ena vloga za bilateralni projekt. Poleg tega je InnoRenew CoE skupaj z ostalimi konzorcijski partnerji uspešno vložil prijavo na Ministrstvo za gospodarski razvoj in tehnologijo RS (MGRT) za vzpostavitev kompetenčnega centra.

Prijave na mednarodne razpise

Raziskovalci InnoRenew CoE so prijavili 21 mednarodnih projektov (njihova skupna vrednost je 16.500.469,72 EUR). Osem projektnih prijav je bilo oddanih na razpise v okviru programa Obzorje Evropa. Pri štirih od njih je InnoRenew CoE zastopan kot koordinator projekta. Poleg tega sta bili dve prijavi oddani na razpis v okviru programa Erasmus+, devet prijav na Forest Value razpis, ena na ERC Consolidator Grant ter ena M-Era.Net program.

InnoRenew CoE building

Construction of the InnoRenew CoE building in Izola, Slovenia, was completed in 2021. With this, the institute has acquired a unique facility for research and innovation in the field of renewable materials and healthy living environments.

- Start of construction: January 2020
- End of construction: November 2021
- Construction company: VG5 d.o.o. and Marles hiše Maribor
- Construction auditor: PROJEKT d.d. Nova Gorica
- Construction super auditor: Proplus d.o.o.
- Size: 8 200 square meters
- Construction costs: €11 million
- Furniture equipment costs: €600 000
- Research equipment costs: €10 million
- Financing: Republic of Slovenia; European Union, European Regional Development Fund

The InnoRenew CoE building is a hybrid combination of timber, concrete and steel. The upper three floors are entirely wooden, making it the largest wooden building in Slovenia to date.



InnoRenew CoE building /
Stavba InnoRenew CoE

Stavba InnoRenew CoE

Gradnja stavbe InnoRenew CoE v Izoli se je zaključila v letu 2021. S tem je inštitut pridobil edinstven objekt za raziskave in inovacije na področju obnovljivih materialov in zdravega bivanjskega okolja.

- Začetek gradnje: Januar 2020
- Zaključek gradnje: November 2021
- Izvajalca gradnje: VG5 d.o.o. in Marles hiše Maribor
- Gradbeni nadzor: PROJEKT d.d. Nova Gorica
- Gradbeni supernadzor: Proplus d.o.o.
- Velikost: 8.200 kvadratnih metrov
- Stroški za gradnjo stavbe: 11 milijonov EUR
- Stroški za pohištveno opremo: 600.000 EUR
- Stroški za raziskovalno opremo: 10 milijonov EUR
- Financiranje: Republika Slovenija in Evropska unija iz Evropskega sklada za regionalni razvoj

Gre za hibridno konstrukcijo lesa, betona in jekla. Zgornja tri nadstropja glavne stavbe so v celoti lesena, zato je to največja lesena stavba v Sloveniji doslej.



Entrance to the building /
Vhod v stavbo



Lobby at the entrance /
Avla pri vходу v stavbo



Staircase in the lobby /
Stopnišče v avli



The ground floor of the building houses the lobby and research laboratories, which are equipped with state-of-the-art machines where the institute's international, interdisciplinary team strives to make breakthroughs in Slovenian, European and global wood science.

- Human Health Laboratory, designed to investigate the effects of new materials, technologies and systems on human health.
- Composites Laboratory, designed to produce composite samples at the laboratory- and pilot-scale with an emphasis on thermo/hydro-mechanical processing and wood-based composites.
- Characterization Laboratory, designed to study the morphological, physicochemical and rheological characterization of bio-based materials.



Characterization Laboratory /
Laboratorij za karakterizacijo

V pritličju stavbe je avla in raziskovalni laboratorij, opremljeni z vrhunsko opremo, s katero lahko mednarodna interdisciplinarna ekipa inštituta naredi velik preskok v slovenskem, evropskem in svetovnem raziskovalnem prostoru:

- Laboratorij za raziskovanje zdravja ljudi, namenjen raziskovanju vplivov novih materialov, tehnologij in sistemov na zdravje ljudi.
- Laboratorij za pripravo kompozitov, ki je namenjen izdelavi vzorcev kompozitov na laboratorijski in pilotni ravni, s poudarkom na procesih termo/hidro mehanske obdelave in na lesu temelječih kompozitov.
- Laboratorij za karakterizacijo, namenjen proučevanju morfoloških, kemijskih in reoloških lastnosti materialov.



Characterization Laboratory /
Laboratorij za karakterizacijo

- Physical Testing Laboratory, designed to perform standardized and non-standardized materials testing to determine basic mechanical properties.
- Microscopy Laboratory, designed to investigate the structures and morphology of renewable materials at the microscopic level.



Climatic chamber in the Physical Testing Laboratory /
Klima komore v laboratoriju za fizikalna testiranja

- Acoustic Properties Laboratory, fully equipped and designed to perform research that investigates architectural and building acoustics, noise control, structural dynamics and vibrations.
- High-powered Computing Laboratory, designed and equipped to support research, development and service needs for information processing and analysis.
- Workshop and Machine Shop, designed for in-house preparation, conditioning and storage of experimental samples and prototypes.

- Laboratorij za fizikalna testiranja za izvajanje standardiziranih in ne-standardiziranih testiranj materialov za določanje osnovnih mehanskih lastnosti.
- Laboratorij za mikroskopiranje, kjer preučujejo strukture in morfologijo obnovljivih materialov na mikroskopski ravni.



Microscopy Laboratory /
Laboratorij za mikroskopiranje

- Laboratorij za raziskovanje akustičnih lastnosti, ki je v podporo ostalim laboratorijem in namenjen akustičnemu testiranju strukturnih elementov v naravni velikosti, kot so talni, stenski in stropni sistemi.
- Laboratorij za visoko zmogljivo računalništvo, ki je v podporo prej navedenim laboratorijem in namenjen shranjevanju podatkov ter služi kot center za visoko zmogljivo računalništvo za potrebe razvoja in opravljanja storitev.
- Tehnična delavnica, ki je namenjena pripravi in shranjevanju vzorcev obnovljivih

The first floor is dedicated to meeting and conference rooms that can hold up to 100 people. All rooms are equipped with digital and IT solutions for high-quality in-person and virtual events. There is also a smaller conference room designed for events where simultaneous translation is needed. An open space is available for networking and co-working.

The second and third floors are office spaces for the institute's employees.

The layout of rooms and interior fittings are designed to encourage movement during work, with active offices whose ergonomically designed furniture encourages employees to change positions at work and "strategic points", such as a printer that is not at hand, that demand a walk.

Materials to be touched, such as railings, doors, electric switches and furniture, were also selected according to results of the institute's current research on the type of wood most likely to affect human well-being.

All rooms are naturally illuminated to minimize the use of artificial light for health and environmental reasons. Further, the interior of the building is, for the first time in Slovenia, equipped according to the principles of REED (restorative environmental and ergonomic design), which emphasizes the use of natural materials to create ergonomic, accessible, adaptable and sustainable buildings.

The building is equipped with a smart management system. For example, depending on temperature and wind conditions, the outer screen shades are automatically raised or lowered, and the windows are opened or closed, to ventilate the interior. The facility is energy efficient and airtight, and ventilation is regulated by heat recovery and also by natural ventilation during peak weather conditions. During construction, 400 sensors were installed to measure the moisture content of the structural wood. This research enables InnoRenew CoE scientists to learn how such a building behaves at different boundary conditions and, consequently, if the data will make for easier and better planning of wooden construction in the future. These sensors measure various parameters, from temperature, humidity, acoustics, dust and emissions to static loads, aging of wood on façades, biotic, chemical and physical quantities.

Prvo nadstropje je namenjeno sejnim in konferenčnim dvoranam. Največja sprejme do 100 ljudi. Vse dvorane so opremljene z digitalnimi in IT rešitvami, ki omogočajo izvedbo kakovostnih dogodkov v stavbi in tudi preko spleta. Manjša dvorana je namenjena izvedbi dogodkov, kjer je potrebno simultano prevajanje, odprt prostor v nadstropju pa je namenjen mreženju in coworkingu.

V drugem in tretjem nadstropju so kabineti za zaposlene.

Razpored prostorov in notranja oprema spodbujata gibanje med delom, denimo z aktivnimi pisarnami, katerih ergonomsko oblikovano pohištvo zaposlene spodbuja k spreminjanju položajev pri delu, ali premišljene postavitve »strateških« točk, kot je tiskalnik, ki ni na dosegu roke, ampak se je treba do njega sprehoditi.

Materiali na površinah, ki se jih dotikamo, kot so ograje, vrata, stikala, pohištvo, so bili izbrani glede na rezultate aktualnih raziskav inštituta o tem, kakšna struktura in vrsta lesa najugodnejše vplivata na človekovo dobro počutje.

Vsi prostori so naravno osvetljeni z namenom zmanjšanja uporabe umetne svetlobe iz zdravstvenih in okoljskih razlogov. Notranjost zgradbe je prvič v Sloveniji opremljena po načelih REED (ang. Restorative Environmental and Ergonomic Design - restorativno okoljsko in ergonomsko oblikovanje), ki temelji na uporabi naravnih virov in ustvarjanju ergonomsko oblikovane, dostopne, prilagodljive in trajnostne gradnje.

Stavba je opremljena s sistemom za pametno upravljanje, kot na primer samodejno dviganje/spuščanje senčil ter odpiranje ali zapiranje oken, glede na temperaturne in vetrovne razmere, da se notranjost hladi oziroma ogreva. Objekt je nizkoenergijski in zraketesen, prezračevanje pa je urejeno z rekuperacijo odpadne toplote, pa tudi z naravnim zračenjem. Že med gradnjo je bilo nameščenih 400 senzorjev za merjenje vsebnosti vlage v konstrukcijskem lesu. To omogoča raziskovalcem inštituta spoznavanje načinov zaščite lesenih konstrukcij med gradnjo, spremljanje staranja lesa v stavbah, njegovega obnašanja pri različnih robnih pogojih in posledično lažje ter boljše načrtovanje lesene gradnje v prihodnosti. Senzorji merijo različne parametre, od temperature, vlage, akustike, prahu in emisij do statičnih obremenitev, staranja lesa na fasadah, biotskih, kemičnih in fizikalnih količin.

All roofs are flat, designed as extensive green roofs, thus realizing the principle that “we should return to nature what we took from it”, and, at the same time, strengthen the building’s insulation. Roof terraces, which cover 1400 square meters, serve as an open-air test site. The institute also provides the wood industry with space, research equipment and data analysis for testing their wooden products or buildings.



Outside atrium /
Zunanji atrij

Vse strehe so ravne in zatravljene, s čimer se uresničuje načelo, da naj bi naravi vrnilo, kar smo ji vzeli, in obenem se okrepi izolacijo stavbe. Pohodne strešne terase, ki obsegajo 1.400 kvadratnih metrov, služijo tudi kot testni poligon na prostem. Inštitut lesni industriji tako nudil tudi prostor, raziskovalno opremo ter zbiranje in analizo podatkov za testiranje njihovih lesnih izdelkov oziroma objektov.



Outside staircase /
Zunanje stopnišče

Laboratory equipment

The InnoRenew project represents an investment in infrastructure as well as the purchase and installation of equipment. It is co-financed by the European Regional Development Fund, within the framework of the Operational Programme for the Implementation of the EU Cohesion Policy in the period 2014–2020 in Slovenia, and the Republic of Slovenia's Ministry of Education, Science and Sport. The purpose is to build needed research infrastructure to provide top-level knowledge and carry out research and innovation in the field of renewable materials and healthy environments.

In 2021, six pieces of research equipment were purchased for InnoRenew CoE's Characterization and Physical Testing laboratories. The institute's overall ICT system and operational equipment for its new building were installed along with the furniture for laboratories and tools for the workshop.

Laboratorijska oprema

Investicijski projekt InnoRenew je namenjen naložbi v izgradnjo infrastrukture ter nakupu in montaži opreme. Investicijski projekt sofinancirata Evropski sklad za regionalni razvoj v okviru Operativnega programa za izvajanje evropske kohezijske politike v obdobju 2014–2020 v Sloveniji in Ministrstvo za izobraževanje, znanost in šport Republike Slovenije. Namen investicije je izgradnja raziskovalne infrastrukture, ki je pomembna za zagotavljanje vrhunskega znanja ter za izvajanje raziskav in inovacij na področju obnovljivih materialov in zdravega bivanjskega okolja.

V letu 2021 je bilo pridobljenih šest kosov laboratorijske opreme, namenjene raziskovanju v laboratoriju za karakterizacijo in za fizikalna testiranja. Prav tako je bil vzpostavljen IKT sistem celotne zgradbe z vso pripadajočo opremo, izvedena je bila dobava pohištva za laboratorije in ročno orodje za delavnico.

Laboratory equipment purchased through the InnoRenew project in 2021 / Laboratorijska oprema, pridobljena leta 2021 v okviru projekta InnoRenew

	Equipment / Oprema	Model / Model	Laboratory / Laboratorij
1	Particle size analysis equipment	Horiba Scientific LA-960A2	Characterization
2	Surface area analysis equipment	Anton Paar Quantachrome Instruments, Autosorb iQ-XR-AG-AG	Characterization
3	TGA-DSC thermogravimetry and dynamic calorimetry system	Waters TA Instruments TGA 5500, Waters TA Instruments DSC 25	Characterization
4	Flash prep chromatography system including sample preparation	BUCHI Pure C-850 Flashprep, IKA ULTRA-TURRAX T 18 digital	Characterization
5	UV-VIS spectrophotometer	METTLER TOLEDO Spectrophotometer UV7	Characterization
6	Climatic chambers	KK-25000CH, KK-8000CH-1, KK-8000CH-2	Physical Testing
7	ICT system	/	/
8	Furniture for laboratories	/	/
9	Manual woodworking tools	/	/

Industrial collaboration

In 2021, InnoRenew CoE collaborated with 116 partners from industry via projects or directly. Most industry partners come from Slovenia, but a large number are also international, including those from Austria, Australia, Belgium, Croatia, Denmark, Estonia, Finland, France, Germany, Greece, Italy, the Netherlands, Norway, Poland, Romania, Spain, Switzerland, Sweden and the United Kingdom.

The institute has 22 direct industrial collaborators from Austria, Australia, Denmark, Finland, Romania and Slovenia.

InnoRenew CoE's industry partners operate within the wood, information technology, manufacturing and agricultural sectors.

V letu 2021 je InnoRenew CoE sodeloval s 116 industrijskimi partnerji, bodisi neposredno ali preko konzorcijskih projektov. Industrijski partnerji so iz Slovenije, veliko pa je tudi mednarodnih, in sicer iz Avstrije, Avstralije, Hrvaške, Danske, Estonije, Finske, Francije, Grčije, Italije, Nemčije, Nizozemske, Norveške, Poljske, Romunije, Španije, Švice, Švedske in Združenega kraljestva.

Z 22 industrijskimi partnerji je InnoRenew CoE sodeloval neposredno, iz sicer iz Avstrije, Avstralije, Danske, Finske, Romunije in Slovenije.

Večina industrijskih partnerjev iz leta 2021 deluje na področjih lesarstva, IKT, proizvodnje ali kmetijstva.

Industrial partners

	Industrial partner / Industrijski partner	Country / Država	Type of collaboration / Vrsta sodelovanja	Sector / Področje
1	ARHEL D.O.O.	Slovenia	National	Technology
2	ALPLES D.D.	Slovenia	National	Manufacturing
3	ALPOD d.o.o.	Slovenia	National	Manufacturing
4	BESTWOOD D.O.O.	Slovenia	National	Manufacturing
5	BOBIČ YACHT INTERIOR D.O.O.	Slovenia	National	Manufacturing
6	CBD D.O.O.	Slovenia	National	Manufacturing
7	DOORS D.O.O.	Slovenia	National	Manufacturing
8	GAŠPER TRŽENJE D.O.O.	Slovenia	National	Marketing
9	GONZAGA-PRO D.O.O.	Slovenia	National	Manufacturing
10	HIT PRELESS D.O.O.	Slovenia	National	Manufacturing
11	KMETIJA JERNEJEVI	Slovenia	National	Agriculture
12	KMETIJA VOLK	Slovenia	National	Agriculture
13	KMETIJA ŽUSTOVI	Slovenia	National	Agriculture
14	L.ASK d.o.o.	Slovenia	National	Manufacturing
15	L-TEK D.O.O.	Slovenia	National	Manufacturing
16	LIP BLEED D.O.O.	Slovenia	National	Manufacturing
17	M SORA D.D.	Slovenia	National	Wood

	Industrial partner / Industrijski partner	Country / Država	Type of collaboration / Vrsta sodelovanja	Sector / Področje
18	MARKO MAHNE - NOSILEC DOPOLNILNE DEJAVNOSTI NA KMETIJI	Slovenia	National	Agriculture
19	MARLES HIŠE MARIBOR D.O.O.	Slovenia	National / Direct Collaboration	Manufacturing
20	MARLES PSP D.O.O.	Slovenia	National	Manufacturing
21	MAREMICO D.O.O.	Slovenia	National	Furniture
22	MIZARSTVO FLORJANČIČ D.O.O.	Slovenia	National	Manufacturing
23	MLINAR POHIŠTVO D.O.O.	Slovenia	National	Furniture
24	MORELJ, PROIZVODNJA IN RAZVOJ, D.O.O.	Slovenia	National	Manufacturing
25	MURALES D.D.	Slovenia	National	Manufacturing
26	POHIŠTVO POLOČNIK ALEŠ POTOŠNIK S.P.	Slovenia	National	Manufacturing
27	REM D.O.O.	Slovenia	National / Direct Collaboration	Manufacturing
28	STRITIH D.O.O.	Slovenia	National	Consulting
29	TAMARA URBANČIČ S.P.	Slovenia	National	Education
30	XLAB D.O.O.	Slovenia	National	ICT
31	AVECOM	Belgium	International	Biotechnology
32	TRANSFURANS CHEMICALS BVBA	Belgium	International	Chemical

Industrijski partnerji

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	Industrial partner / Industrijski partner	Country / Država	Type of collaboration / Vrsta sodelovanja	Sector / Področje
33	ERICSSON NIKOLA TESLA D.D.	Croatia	International	ICT
34	AGRO BUSINESS PARK AS	Denmark	International	Agriculture
35	EMMELEV AS	Denmark	International	Chemical
36	TAILORZYME APS	Denmark	International	Agriculture
37	SENTAB ESTONIA OU	Estonia	International	ICT
38	ESTONIAN WOODHOUSE ASSOCIATION	Estonia	International	Association
39	ESTONIAN FOREST AND WOOD INDUSTRIES ASSOCIATION	Estonia	International	Association
40	SAHATEOLLISUUS RY	Finland	International	Wood
41	FINNLOG OÜ	Finland	International	Construction
42	ARBONIS	France	International	Construction
43	DOMALYS SAS	France	International	Consulting
44	EIFFAGE IMMOBILIER SUD OUEST	France	International	Services
45	GALEO	France	International	Construction
46	VEOLIA PROPRES	France	International	Energy
47	VERTECH GROUP	France	International	Consulting
48	ASCORA GMBH	Germany	International	ICT
49	GEA WESTFALIA SEPARATOR GROUP GMBH	Germany	International	Services
50	MARS GMBH	Germany	International	Food
51	MIEBACH CONSULTING GMBH	Germany	International	Consulting
52	ZRS ARCHITEKTEN	Germany	International	Architecture
53	HOLZBAU DEUTSCHLAND	Germany	International	Association
54	CHIMAR HELLAS AE	Greece	International	Wood
55	CO-ROBOTICS SRL	Italy	International	ICT

	Industrial partner / Industrijski partner	Country / Država	Type of collaboration / Vrsta sodelovanja	Sector / Področje
56	HEWLETT PACKARD ITALIANA SRL	Italy	International	ICT
57	ORTHOKEY ITALIA SRL	Italy	International	Health
58	SAIB S.P.A.	Italy	International	Wood
59	AEP POLYMERS SRL	Italy	International	Manufacturing
60	ETA - ENERGIA, TRASPORTI, AGRICOLTURA SRL	Italy	International	Consulting
61	ADSYSCO BV	Netherlands	International	Consulting
62	MAASTRICHT INSTRUMENTS BV	Netherlands	International	Technology
63	ZERO EMISSIONS ENGINEERING BV	Netherlands	International	Technology
64	B.T.G. BIOMASS TECHNOLOGY GROUP BV	Netherlands	International	Manufacturing
65	FORECO DALFSEN BV	Netherlands	International	Wood
66	TREFOKUS AS	Norway	International	Construction
67	NORCONSULT INFORMASJONSSYSTEMER AS	Norway	International	Engineering
68	MOELVEN LIMTRE AS	Norway	International	Wood
69	MOWI FEED AS	Norway	International	Food
70	SWECO NORGE AS	Norway	International	Chemical
71	DANMAR COMPUTERS	Poland	International	ICT
72	GLINTT HEALTHCARE SOLUTIONS SA	Poland	International	Consulting
73	ALFA NATURA D.O.O.	Slovenia	International	Wood
74	FRANKA MARZI S.P.	Slovenia	International	Food
75	SENLAB D.O.O.	Slovenia	International	ICT
76	STILLES D.O.O.	Slovenia	International	Engineering

	Industrial partner / Industrijski partner	Country / Država	Type of collaboration / Vrsta sodelovanja	Sector / Področje
77	ANECOOP SOCIEDAD COOPERATIVA	Spain	International	Agriculture
78	BIOCHEMIZE SL	Spain	International	Agriculture
79	EGOIN SA	Spain	International	Wood
80	EURIZON SL	Spain	International	Agriculture
81	INDRA SISTEMAS SA	Spain	International	Logistics
82	MY ENERGIA ONER SL	Spain	International	Energy
83	NATAC BIOTECH SL	Spain	International	Food
84	OLIVAR DE SEGURA	Spain	International	Food
85	ROBOTNIK AUTOMATION SLL	Spain	International	Robotics
86	FORESA TECHNOLOGIES SL	Spain	International	Chemical
87	BLUE SYNERGY SL	Spain	International	Consulting
88	MIBELLE AG	Switzerland	International	Cosmetics
89	AVA BIOCHEM BSL AG	Switzerland	International	Chemical
90	SWEDISH WOOD	Sweden	International	Association
91	TMF	Sweden	International	Consulting
92	SWECO NORGE AS	Sweden	International	Engineering
93	MOELVEN TOREBODA AB	Sweden	International	Wood
94	INFORMATION CATALYST FOR ENTERPRISE LTD	United Kingdom	International	ICT
95	SMITH AND WALLWORK ENGINEERS LTD	United Kingdom	International	Construction
96	NNFCC LIMITED	United Kingdom	International	Consulting
97	METADYNEA AUSTRIA GMBH	Austria	Direct Collaboration	Chemicals
98	LICELLA HOLDINGS PTY, LTD.	Australia	Direct Collaboration	Biorafinery

	Industrial partner / Industrijski partner	Country / Država	Type of collaboration / Vrsta sodelovanja	Sector / Področje
99	TIMBERLINK AUSTRALIA	Australia	Direct Collaboration	Manufacturing
100	VELUX A/S	Denmark	Direct collaboration	Window producer
101	FIBERDOM OY	Finland	Direct Collaboration	Wood
102	KRONOSPAN TRADING SRL	Romania	Direct Collaboration	Wood
103	FRTICA, D.O.O.	Slovenia	Direct Collaboration	Food
104	LESARSKI GROZD	Slovenia	Direct Collaboration	Wood
105	LUMAR IG D.O.O.	Slovenia	Direct Collaboration	Civil Engineering
106	NAVITAS D.O.O.	Slovenia	Direct Collaboration	Civil Engineering
107	RIKO HIŠE D.O.O.	Slovenia	Direct Collaboration	Civil Engineering
108	RTV SLOVENIJA	Slovenia	Direct Collaboration	Media
109	SPIRIT SLOVENIJA, JAVNA AGENCIJA	Slovenia	Direct Collaboration	Service
110	VG5 D.O.O.	Slovenia	Direct Collaboration	Civil Engineering
111	SIDG	Slovenia	Direct Collaboration	Wood
112	IQWOOD D.O.O.	Slovenia	Direct Collaboration	Manufacturing
113	K.M.K. BOX D.O.O.	Slovenia	Direct Collaboration	Manufacturing
114	GEOIT D.O.O.	Slovenia	Direct Collaboration	Construction
115	URSA SLOVENIJA D.O.O.	Slovenia	Direct Collaboration	Manufacturing
116	MK3 D.O.O.	Slovenia	Direct Collaboration	Engineering

Living Lab InnoRenew

In 2021, Living Lab InnoRenew had 120 members from 31 countries (59 small and medium-sized enterprises, 51 educational or research institutes, five regional development agencies and five individuals).

Living Lab InnoRenew offers activities and services according to membership status: gold, silver or associate. Currently, Living Lab InnoRenew has 11 gold members and 109 associates.



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RRA LUR



Občina-Comune di
IZOLA · ISOLA



Živi laboratorij InnoRenew

Ob koncu leta 2021 ima Živi laboratorij InnoRenew 120 članov iz 31 držav. Od teh je 59 nacionalnih in mednarodnih malih in srednje velikih podjetij, 51 nacionalnih in mednarodnih izobraževalnih ustanov in raziskovalnih organizacij, pet regionalnih razvojnih agencij in pet zainteresiranih posameznikov. Dejavnosti in storitve, ki jih ponuja Živi laboratorij InnoRenew, se razlikujejo glede na status članov: zlato, srebrno ali pridruženo članstvo. Živi laboratorij InnoRenew ima trenutno enajst zlatih in 109 pridruženih članov.

In November and December 2021, Living Lab InnoRenew hosted three webinars from Gdańsk University of Technology's (GUT) expert researchers. GUT is a gold member of Living Lab InnoRenew.

V mesecu novembru in decembru 2021 je Živi laboratorij InnoRenew gostil tri predavanja raziskovalcev iz Tehniške univerze v Gdańsku (Politehnika Gdańska, GUT), ki je zlata članica laboratorija.

InnoRenew CoE hosts

INVITED LECTURES

Expert researchers from Gdańsk University of Technology
Living Lab InnoRenew Gold Member

18 November 2021 | 13:00 CET
9 December 2021 | 13:00 CET
Online



Invited lectures from Living Lab InnoRenew gold members /
Gostujoča predavanja zlate članice Živega laboratorija

Events

InnoRenew CoE organized and co-organized 49 events in 2021, including workshops, meetings, trainings, exhibitions, celebrations and international conferences. Some were in-person, some were online and some were a hybrid of both.

Events organized by InnoRenew CoE in 2021

Annual Report

	Event / Dogodek	Type / Vrsta	Location / Lokacija	Date / Datum
1	InnoRenew CoE General Assembly Meeting	Presentation and progress report	Online	12.01.2021
2	FAÇADE webinar series, Dr. Kévin Candelier, Environmental impact of thermally modified wood	Webinar series	Online	13.01.2021
3	FAÇADE webinar series, Dr. Oihana Gordobil, Natural resources as anti-UV agents	Webinar series	Online	17.02.2021
4	National Symposium of NIR Spectroscopy, NIR Italia online	International conference	Online	24.02.2021-25.02.2021
5	InnoRenew project partners meeting	Presentation and progress report	Online	01.03.2021
6	FAÇADE webinar series, Dr. Tanja Bagar, Hemp as the source of nutrients and essential phytochemicals	Webinar series	Online	17.03.2021
7	InnoRenew CoE Council of Experts	Presentation and progress report	Online	23.03.2021
8	Mental Health in the Built Environment (DESIRE project)	Workshop	Online	31.03.2021
9	Ergonomics in the Built Environment (DESIRE project)	Workshop	Online	01.04.2021
10	FAÇADE webinar series, Dr. David DeVallance, Potential of carbonized biomass for advanced material applications	Webinar series	Online	14.04.2021
11	Training on Key Enabling Technologies Educational Materials and Online Courses (BRACKET project)	Training	Online	19.04.2021

Organizirani dogodki

V letu 2021 je InnoRenew CoE organiziral in soorganiziral 49 dogodkov, med katerimi so bile delavnice, srečanja, izobraževanja, posebne prireditve, razstave, slovesnosti in mednarodne konference. Nekaj dogodkov je potekalo v živo, nekaj po spletu, nekateri pa so bili organizirani v hibridni obliki, v živo in po spletu.

Dogodki, ki jih je organiziral InnoRenew CoE v letu 2021

	Event / Dogodek	Type / Vrsta	Location / Lokacija	Date / Datum
12	Slovenian President Pahor and Greek President Sakellaropoulou visit	Ceremony	Izola, Slovenia	23.04.2021
13	FAÇADE webinar series, Dr. Salvatore Viscuso, New trends for adaptive materials and technologies in building façades	Webinar series	Online	12.05.2021
14	InnoRenew project partners meeting	Presentation and progress report	Online	08.06.2021
15	InnoRenew CoE International Conference 2021, "Healthy and Sustainable Renovation with Renewable Materials"	International conference	Online	10.06.2021-11.06.2021
16	FAÇADE webinar series, Dr. Anna Sandak, Bioinspired material design: Need or whim?	Webinar series	Online	16.06.2021
17	PACK-NIN webinar series, Dr. Mika Sipponen, Lignin nanoparticles as functional fillers in composite materials	Webinar series	Online	22.06.2021
18	InnoRenew CoE Council of Experts	Presentation and progress report	Online	05.07.2021
19	PACK-NIN webinar series, Dr. Igor Karlovits, Can bio-based packaging save the world from waste or do we need something more?	Webinar series	Online	06.07.2021
20	LOOSE CELLS - Innovating at the Crossfield of Art and Science	Unveiling event	Izola, Slovenia	08.07.2021
21	Charm of Wood	Traveling exhibition	Koper, Slovenia	12.07.2021-29.07.2021
22	PACK-NIN webinar series, Dr. Arun Ghosh, Organosolv lignin and its use in modifying polyethylene thermoplastic	Webinar series	Online	20.07.2021

	Event / Dogodek	Type / Vrsta	Location / Lokacija	Date / Datum
23	FAÇADE webinar series, Dr. Sebastian Dahle, Opportunities for non-thermal plasma applications on wooden façades	Webinar series	Online	21.07.2021
24	FAÇADE webinar series, Dr. Mike Burnard, Circularity in the wood sector: lessons from the WoodCircus project	Webinar series	Online	8/18/2021
25	Protection of bronze monuments	Public event	Piran, Slovenia	24.08.2021
26	InnoRenew CoE Council of Experts	Presentation and progress report	Koper, Slovenia	01.09.2021-02.09.2021
27-32	Competence center for human resources development in woodworking (KOCles 3.0) lectures	Training	Online	06.09.2021 13.09.2021 20.09.2021 18.10.2021 03.12.2021 14.12.2021
33	InnoRenew project partners meeting	Presentation and progress report	Koper, Slovenia and online	14.09.2021
34	FAÇADE webinar series, Dr. Janis Rizikovs, Alternatives to synthetic adhesives for wood-based panels	Webinar series	Online	15.09.2021
35-42	Let's Explore Wood	Training	Elementary schools: Zalog, Livade, Miren, Martin Krpan, Mala Nedelja, Online, Muta, Davorina Jenka	15.09.2021 22.09.2021 29.09.2021 05.10.2021 06.10.2021 12.10.2021 14.10.2021 22.10.2021

	Event / Dogodek	Type / Vrsta	Location / Lokacija	Date / Datum
43	FAÇADE webinar series, Dr. Iztok Šušteršič, Seismic strengthening of buildings with cross-laminated timber plates on the façade	Webinar series	Online	20.10.2021
44	FAÇADE webinar series, Dr. Susana Fernandes, Biomacromolecules from marine biomass for the development of innovative materials	Webinar series	Online	17.11.2021
45	Gdańsk University of Technology expert researchers	Living Lab InnoRenew webinar	Online	18.11.2021
46	PACK-NIN webinar series, Dr. Ievgen Pylypchuk, Structural and molecular-weight-dependency in the formation of lignin nanoparticles	Webinar series	Online	07.12.2021
47	Gdańsk University of Technology expert researchers	Living Lab InnoRenew webinar	Online	09.12.2021
48	InnoRenew CoE Council of Experts	Presentation and progress report	Online	14.12.2021
49	FAÇADE webinar series, Dr. Esakkiammal Sudha Esakkimuthu, Lignin addition to increase performance of polylactic acid (PLA) biopolymer	Webinar series	Online	22.12.2021

National Symposium of NIR Spectroscopy, NIR Italia online

From 24-25 February 2021, InnoRenew CoE, the Italian Society for Near-Infrared Spectroscopy (SISNIR) and the University of Primorska hosted the National Symposium of NIR Spectroscopy, NIR Italia online.

More than 90 participants from all over the world had the opportunity to listen to 26 oral presentations and nine poster presentations across six sessions.

Od 24. do 25. februarja 2021 je InnoRenew CoE skupaj z Univerzo na Primorskem in Italijanskim združenjem za bližnjo infrardečo spektroskopijo (Società Italiana di Spettroscopia NIR - SISNIR), organiziral nacionalni simpozij NIR Italia online.

Več kot 90 udeležencev simpozija je v šestih konferenčnih sklopih prisluhnilo 26 predavanjem in devetim predstavitev posterjev.



Slovenski predsednik Borut Pahor in grška predsednica Katerina Sakellaropoulou sta obiskala InnoRenew CoE na gradbišču v Izoli. Zanimala ju je predvsem tema potresne varnosti stavbe, saj je to pomembna tema za obe državi.

Dr. Andreja Kutnar je med obiskom dejala, da se v InnoRenew CoE poleg raziskovanja potresne varnosti stavb, posvečajo tudi protipotresni sanaciji stavb in snovanju celostnih gradbenih rešitev, kjer igrajo obnovljivi materiali, kot je les, pomembno vlogo.



Slovenian President Borut Pahor and Greek President Katerina Sakellaropoulou visited the InnoRenew CoE construction site in Livade, Izola (Slovenia). The two were interested to learn about the building's seismic safety as Slovenia and Greece are both in areas where earthquake risk exists.

During the visit, Dr. Andreja Kutnar noted that InnoRenew CoE is dedicated to exploring earthquake safety for buildings, seismic rehabilitation and design of integrated construction solutions where renewable materials, like wood, play an important role.

From left to right: Danilo Markočič, Municipality of Izola's mayor, Dr. Klavdija Kutnar, University of Primorska's rector, Borut Pahor, Slovenian President, Katerina Sakellaropoulou, Greek President, and Dr. Andreja Kutnar, InnoRenew CoE director at the construction site in Izola / Na fotografiji z leve: župan Občine Izola Danilo Markočič, rektorica Univerze na Primorskem dr. Klavdija Kutnar, predsednik Republike Slovenije Borut Pahor, predsednica Helenske republike Katerina Sakellaropoulou in direktorica InnoRenew CoE dr. Andreja Kutnar na gradbišču v Izoli

InnoRenew CoE International Conference 2021

From 10-11 June 2021, InnoRenew CoE and the University of Primorska hosted the online InnoRenew CoE International Conference 2021 (IRIC2021), "Healthy and Sustainable Renovation with Renewable Materials".

IRIC2021 featured 38 presentations about the key role of renewable materials in achieving climate goals and renovating buildings.

The keynote speaker was Dr. Lisanne Havinga, an expert in circularity and assistant professor of Building Performance and Principal Scientist System Integration at Technische Universiteit Eindhoven.

I believe we have to approach the key challenges of our time, global warming and biodiversity loss, by evaluating scenarios for sustainable renovation and energy transition in a way that takes into account all environmental impacts.

Dr. Lisanne Havinga, IRIC2021 keynote speaker

Prepričana sem, da se moramo s ključnimi izzivi današnjega časa, globalnim segrevanjem in izgubo biodiverzitete, soočiti z določanjem scenarijev za trajnostno obnovo in energetskega prehoda, ki bodo upoštevali vse vplive na okolje.

Dr. Lisanne Havinga, osrednja govorka na IRIC2021

Slovenian President Pahor and Greek President Sakellaropoulou visit

Information shared at the conference is of great benefit to the New European Bauhaus community as topics like cultural heritage, new construction, renovation, materials, health and related social and business issues were presented.

Dr. Michael Burnard, InnoRenew CoE deputy director

Kar smo danes slišali na konferenci, je zelo koristno tudi za Novi evropski Bauhaus, saj so predstavitve pokrivalo tako kulturno dediščino, kot novogradnjo, obnovo, materiale, zdravje in ostale relevantne družbene in poslovne izzive.

Dr. Michael Burnard, namestnik direktorice InnoRenew CoE

Od 10. do 11. junija 2021 sta InnoRenew CoE in Univerza na Primorskem organizirala dvodnevno mednarodno konferenco »Z obnovljivimi materiali do zdravih in trajnostnih obnov« (IRIC2021).

Na spletni konferenci je sodelovalo 38 strokovnjakov, ki so predstavili ključno vlogo obnovljivih materialov pri doseganju podnebnih ciljev in pri obnovi stavb.

Osrednji nagovor na konferenci je imela dr. Lisanne Havinga, strokovnjakinja za krožnost, ki je tudi docentka na področju okoljske učinkovitosti stavb in glavna raziskovalka združevanja sistemov na Tehniški univerzi v Eindhoven (Technische Universiteit Eindhoven).



Dr. Lisanne Havinga, IRIC2021 keynote speaker / Dr. Lisanne Havinga, osrednja govorka na IRIC2021

Workshops and Trainings

InnoRenew CoE organized two workshops and one training under the Erasmus+ research projects DESign for all methods to cREate age-friendly housing (DESIRE) and Boosting a novel and innovative tRAining appRoach of Key Enabling Technologies (BRACKET).

InnoRenew CoE researchers involved in the DESIRE project hosted two workshops to help participants better understand the needs of older adults related to mental health in the built environment and to identify ergonomic features of the built environment important to older adults.

InnoRenew CoE researchers involved in the BRACKET project organized the "Training on Key Enabling Technologies Educational Materials and Online Courses".

In addition, a series of lectures for the "Competence center for human resources development in woodworking" (KOCles 3.0) project were given by InnoRenew CoE employees to KOCles 3.0 project partners on aspects of wood science and wood products.

InnoRenew CoE researchers also educated elementary school students through the "Let's Explore Wood" workshops. Researchers visited eight elementary schools in Slovenia to teach students about the versatility and beauty of wood as well as the variety of professions associated with it. InnoRenew CoE hopes to raise young people's awareness about the importance of using natural, renewable resources and gain knowledge about the proper use of these materials with the workshops, which are co-financed by the Public Agency SPIRIT Slovenia.

InnoRenew CoE je organiziral dve delavnici in eno izobraževanje v okviru Erasmus + raziskovalnih projektov Metode univerzalnega oblikovanja starostnikom prijaznih bivanjskih prostorov (DESIRE) in Spodbujanje novega in inovativnega pristopa k usposabljanju za uporabo ključnih tehnologij (BRACKET).

Raziskovalci vključeni v projekt DESIRE so pripravili dve delavnici, ki sta bili namenjeni boljšemu poznavanju potreb starejših odraslih in njihovem duševnem zdravju v grajenem okolju ter prepoznavanju ergonomskih značilnosti grajenega okolja, ki so pomembne za starejše odrasle.

Raziskovalci vključeni v projekt BRACKET pa so pripravili izobraževanje o ključnih tehnologijah in spletnem tečaju BRACKET (Training on Key Enabling Technologies Educational Materials and Online Courses).

V sklopu projekta Kompetenčnega centra za razvoj kadrov v lesarstvu KOCles 3.0 so raziskovalci InnoRenew CoE pripravili serijo predavanj za partnerje projekta KOCles 3.0 o različnih vsebinah lesarstva in lesene proizvodnje.

Aktivno so tudi izobraževali učence različnih osnovnih šol po Sloveniji z delavnicami Let's explore wood. Obiskali so osem osnovnih šol in učencem predstavili vsestranskost in lepoto dela z lesom ter pestrost poklicev, ki so vezani nanj. S takimi aktivnostmi dvigujemo raven ozavešanja mladih o pomembnosti uporabe naravnih, obnovljivih virov ter pomen poznavanja lastnosti materialov za njihovo pravilno rabo. Delavnice sofinancira Javna agencija SPIRIT Slovenija.



Lectures for KOCles 3.0 / Predavanja za KOCles 3.0

LOOSE CELLS – Innovating at the Crossfield of Art and Science

In July 2021, the unveiling of objects created as part of the LOOSE CELLS – Innovating at the Crossfield of Art and Science project took place in Izola's Pietro Copo Park. University of Primorska and University of Nova Gorica students involved in the project created these objects under the mentorship of researchers and artists. The project, initiated by InnoRenew CoE, connected science, art, technology and education to develop a new direction of research that encourages radical innovation and introduces artistic thinking. The students created the basis for connecting these areas, which inspires development of social and economic innovations on an international scale.

Experts from the University of Primorska, University of Nova Gorica's School of Arts and PiNA were involved in creation of the project.

Julija 2021 je v parku Pietro Copo v Izoli potekalo prvo razkritje objektov, ki so jih študenti skupaj z raziskovalci in umetniki ustvarili v okviru projekta Proste Celice – Inoviranje v polju med umetnostjo in znanostjo. Temeljna ideja projekta je povezovanje znanosti, umetnosti, tehnologije in izobraževanja ter vzpostavitev situacij njihovega srečevanja. Gre za razvoj nove smeri raziskovanja, ki spodbuja radikalno inovativnost in v inoviranje vpeljuje umetniško razmišljanje. Študenti Univerze na Primorskem in Akademije umetnosti Univerze v Novi Gorici so v projektu ustvarjali na podlagi povezovanja omenjenih področij, ki pomembno navdihuje razvoj družbenih in gospodarskih inovacij tudi v mednarodnem merilu.

Projekt je zasnoval konzorcij štirih partnerjev, poleg raziskovalnega inštituta InnoRenew CoE še Univerza na Primorskem, Akademija umetnosti Univerze v Novi Gorici in Kulturno izobraževalno društvo PiNA (s podporo Mreže centrov raziskovalnih umetnosti in kulture RUK).



Installation in Izola's Pietro Copo Park / Postavitev v parku Pietro Copo, Izola

Charm of Wood

For the fifth consecutive year, InnoRenew CoE collaborated and co-organized the Charm of Wood traveling exhibition, which was open for visits at the University of Primorska during July 2021. For over a decade, Charm of Wood has been promoting and fostering the use of wood and wood products, raising awareness about the sustainability of this natural material.

Že peto leto zapored je InnoRenew CoE soorganiziral potujoči del razstave Čar lesa. Ta je bila na ogled v prostorih Univerze na Primorskem v mesecu juliju. Čar lesa že več kot desetletje promovira in spodbuja rabo lesa in lesenih izdelkov ter ozavešča o trajnostnem vidiku rabe tega naravnega materiala.



Charm of Wood 2021 / Čar lesa 2021

Protection of bronze monuments public event

In August 2021, InnoRenew CoE hosted an event for the “Protection of bronze monuments in the changing environment” project at Tartini Square in Piran, Slovenia.

During the event, a plaque was placed next to the Tartini monument to engage the public in the protection of cultural heritage through the collection of photographs that document damage to bronze monuments.

The Institute for the Protection of Cultural Heritage of Slovenia led this project in collaboration with InnoRenew CoE and the Slovenian National Building and Civil Engineering Institute, and it was financed by the Slovenian Research Agency (ARRS).

Konec meseca avgusta je InnoRenew CoE pripravil dogodek v okviru projekta Zaščita bronastih spomenikov v spremenljivem okolju, na Tartinijevem trgu v Piranu.

Na dogodku smo predstavili tablo, ki je nameščena zraven Tartinijevega spomenika in katere namen je spodbujanje zanimanja širše javnosti za zaščito kulturne dediščine preko vključevanja javnosti v zbiranje podatkov (fotografij) o poškodbah spomenikov.

Projekt je vodil Zavod za varstvo kulturne dediščine, kot partnerji pa so sodelovali tudi InnoRenew CoE in Zavod za gradbeništvo, financiran pa je bil s strani Javne agencije za raziskovalno dejavnost RS (ARRS).



Project event at Tartini Square in Piran / Dogodek projekta na Tartinijevem trgu v Piranu

Highlighted achievements in 2021

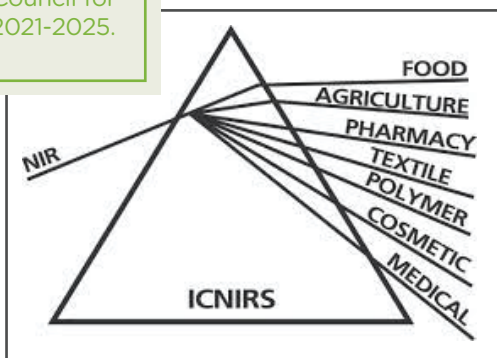
Dr. Michael Burnard became vice president of InnovaWood, an international organization that connects forestry and timber experts to support innovation in these sectors.

Dr. Michael Burnard je postal podpredsednik mednarodne organizacije InnovaWood, ki povezuje znanstvenike s področij gozdarstva in lesarstva, s ciljem spodbujanja inovativnosti v omenjenih sektorjih.



Dr. Anna Sandak was elected as a member of the President's Advisory Committee of the International Council for Near Infrared Spectroscopy (ICNIRS) for 2021-2025.

Dr. Anna Sandak je postala članica svetovalnega odbora predsednika mednarodnega odbora International Council for Near Infrared Spectroscopy (ICNIRS), za obdobje 2021-2025.



Izpostavljeni dosežki v letu 2021

Dr. Iztok Šušteršič was elected as the Management Committee Chair for COST Action CA20139 - Holistic Design of Taller Timber Buildings.

Dr. Iztok Šušteršič je postal predsednik upravnega odbora akcije Cost CA20139 - Holistični dizajn visokih lesenih zgradb.

InnoRenew CoE became a partner in the New European Bauhaus, a high-level recognition of the institute's excellent work.

InnoRenew CoE je postal partner Novega evropskega Bauhauusa, kar je veliko priznanje za odlično delo na inštitutu.



InnoRenew CoE went through the European Foundation for Quality Management (EFQM) evaluation and proudly obtained a four-star EFQM certificate.

InnoRenew CoE se je prijavil na ocenjevanje Evropske fundacije za upravljanje kakovosti (EFQM) in s ponosom pridobil certifikat s štirimi zvezdicami.

Dissemination and outreach

InnoRenew CoE employees attended 66 international conferences and 12 national conferences in 2021. In-person events took place in Austria, the Czech Republic, France, Italy, North Macedonia, Slovenia, Spain and the United States.

InnoRenew CoE employee international conference participation in 2021

	Employee / Zaposleni	Conference / Ime konference	Location / Lokacija	Date / Datum
1	Ana Slavec	Start Circles conference	Online	03.02.2021
2	Mateja Erce	(eng)aging!	Online	10.02.2021-11.02.2021
3	Amy Simmons	2nd ACT International Synergy Conference	Online	11.02.2021-12.02.2021
4	René Herrera Díaz	4th International Conference on Biomimetics and Bioadhesives 2021	Online	12.02.2021-15.02.2021
5	Anna Sandak, Nežka Sajinčič, Jakub Sandak, Oihana Gordobil, Faksawat Poohphajai, Dean Lipovac, Edit Földvári-Nagy, Veerapandian Ponnuchamy, Andreja Kutnar, René Herrera Díaz, Tine Šukljan, Hana Remešová, Amy Simmons	National Symposium of NIR Spectroscopy, NIR Italia online	Online	24.02.2021-25.02.2021
6	Oihana Gordobil	Keeping it Green in Personal Care – One day online symposium	Online	02.03.2021
7	Vesna Starman	Empowering the circular bioeconomy through the EU Green Deal	Online	17.03.2021
8	Michael Mrissa	EQWOOD	Online	25.03.2021
9	Laetitia Marrot	Surfaces, Interfaces and Coatings Technologies International conference – SCT 2021	Online	07.04.2021-09.04.2021
10	Andreja Kutnar, Amy Simmons, Lea Primožič, Michael Burnard, Vesna Starman, Hana Remešová, Anna Sandak	The New European Bauhaus: How can the wood sector engage, contribute and co-create?	Online	08.04.2021
11	Michael Burnard	6th Karelia Symposium	Online	13.04.2021
12	Miklós Krész	Budapest ML Forum	Online	15.04.2021
13	Vesna Starman	Education Alliance	Online	15.04.2021
14	Andreja Kutnar	Latin American and Caribbean Days 2021	Online	19.04.2021-23.04.2021

Razširjanje rezultatov in obveščanje

V letu 2021 so se zaposleni v InnoRenew CoE udeležili 66 mednarodnih in 12 nacionalnih konferenc. Dogodki, ki so potekali v živo, so bili organizirani v Avstriji, na Češkem, Franciji, Italiji, Severni Makedoniji, Sloveniji, Španiji in ZDA.

Udeležba zaposlenih na mednarodnih konferencah v letu 2021

	Employee / Zaposleni	Conference / Ime konference	Location / Lokacija	Date / Datum
15	Andreja Kutnar, Michael MRISSA, Michael Burnard	Construction Materials for a Sustainable Future	Online	20.04.2021-21.04.2021
16	Hana Remešová	Conference: Conversations on the New European Bauhaus	Online	22.04.2021-23.04.2021
17	Anna Sandak	Engineered Living Materials Conference 2021	Online	04.05.2021-07.05.2021
18	Veerapandian Ponnuchamy	COST Action CA18234 Computational materials sciences for efficient water splitting with nanocrystals from abundant elementsn tutorial on the AIMS code	Online	17.05.2021
19	Nežka Sajinčič	IFTE2021	Online	25.05.2021
20	Laetitia Marrot	7th EWORA Conference	Online	09.06.2021-11.06.2021
21	Matthew Schwarzkopf	Forest Products Society 2021 International Convention	Online	15.06.2021
22	Andreja Kutnar	Transylvanian Clusters International Conference 2021	Online	16.06.2021-18.06.2021
23	Ana Slavec	Women in Data Science Ljubljana	Online	19.06.2021
24	Michael Burnard	Alpine Transnational Live Learning: Slovenia	Online	23.06.2021
25	Elizabeth Dickinson	Future of Science Communication Conference (#FSCC21)	Online	24.06.2021-25.06.2021
26	Andreja Kutnar, Václav Sebera	9th Hardwood Conference	Online	29.06.2021
27	Andreja Kutnar	M&E workshop on Widening Lesson Learned and Future Perspectives for Widening Instruments	Online	30.6.2021

	Employee / Zaposleni	Conference / Ime konference	Location / Lokacija	Date / Datum		Employee / Zaposleni	Conference / Ime konference	Location / Lokacija	Date / Datum	
InnoRenew CoE employee international conference participation in 2021	28	Michael Burnard	Horizon Europe Widening Participation and Spreading Excellence	Online	06.07.2021	48	Esakkiammal Sudha	First International Conference in sustainable food packaging	Online	26.09.2021-29.06.2021
	29	Hana Remešová	Prague European Summit	Prague, Czech Republic + online	12.07.2021-14.07.2021	49	Miklós Krész	International Conference on Computational Logistics	Online	27.09.2021-29.09.2021
	30	Kelly Peeters	ICP2020 International conference on polyphenols	Online	13.07.2021-15.07.2021	50	Kaja Kastelic	Prevention in light of COVID-19 pandemic	Online	27.09.2021
	31	Ana Slavec	Eurodoc conference	Online	14.07.2021	51	Andreja Kutnar	BIOEAST Foresight conference	Online	27.09.2021
	32	Andreja Kutnar, Michael Burnard	10e Forum International Bois Construction (FBC)	Paris, France	15.07.2021-17.07.2021	52	Mateja Erce	22nd International ISBP Conference	Belluno, Italy	01.10.2021-03.10.2021
	33	Jan Včelák	GSCAEE-2021	Barcelona, Spain	18.07.2021-22.07.2021	53	Michael Burnard	WOODRISE 2021 Kyoto	Online	15.10.2021-18.10.2021
	34	Elizabeth Dickinson	Communicating the Future: Engaging the Public in Discovery Science!	Online	26.07.2021-27.07.2021	54	Iztok Šušteršič	Circular economy with industrial hemp	Bad Radkersburg, Austria	21.10.2021
	35	Matthew Schwarzkopf, Amy Simmons	SWST 64th International Convention	Flagstaff, Arizona, USA	30.07.2021-08.08.2021	55	Rok Prislan	Arhikult 2021	Brdo pri Kranju, Slovenia	22.10.2021
	36	Andreja Kutnar	Polymer Meeting 14	Graz, Austria	30.08.2021	56	Vesna Starman	17th Edition of the European Computer Science Summit	Online	24.10.2021-26.10.2021
	37	László Hajdu, Balázs Dávid, Miklós Krész	Hungarian Operations Research conference	Cegléd, Hungary	31.08.2021-02.09.2021	57	Balázs Dávid, Miklós Krész	17th Miklós Iványi International PhD & DLA symposium	Online	25.10.2021-26.10.2021
Annual Report	38	Marica Mikuljan, Esakkiammal Sudha	International circular packaging conference	Online	09.09.2021-10.09.2021	58	Gertrud Fábrián, Elizabeth Dickinson	Adobe Max conference 2021	Online	26.10.2021-28.10.2021
	39	Václav Sebera	12th International Scientific Conference - Ohrid 2021	Ohrid, North Macedonia	13.09.2021-17.09.2021	59	Ana Slavec	Conference on the New European Research Area (ERA)	Online	27.10.2021
	40	Laetitia Marrot	European Coating show Conference	Online	13.09.2021-14.09.2021	60	Andreja Kutnar	Good cop bad cop in the circular economy - What is the role of wood and plastic materials?	Online	25.11.2021
	41	Andreja Kutnar	International seminar E2WP chair	Online	15.09.2021	61	Andreja Kutnar	Circular Business	Online	23.11.2021-23.11.2021
	42	Sidra Aslam	International Conference on Sustainability in Energy and Buildings SEB-21	Online	17.09.2021	62	Andreja Kutnar	"Good cop bad cop in the circular economy - What is the role of wood and plastic materials?"	Online	25.11.2021
	43	Mateja Erce, Nejc Šarabon, Kaja Kastelic, Matic Sašek, Niki Hrovatin	Health of The Elderly	Online	17.09.2021	63	Črtomir Tavzes	Stručna Konferencija: "Ljudi, drvo, namještaj 2021"	Online	26.11.2021
	44	Rok Prislan	30th International Electrotechnical and Computer Science Conference ERK 2021	Portorož, Slovenia	20.09.2021	64	Ana Slavec	The Lyberg conference - A new Suvey Landscape	Online	01.12.2021
	45	Ana Slavec	17th Applied Statistics 2021	Online	20.09.2021-22.09.2021	65	Amy Simmons	Gender Equality Plans as change maker	Online	09.12.2021
	46	László Hajdu, Balázs Dávid, Miklós Krész	16th International Symposium on Operations Research in Slovenia	Online	22.09.2021-24.09.2021	66	Laetitia Marrot	Sustainable composites - Use of cannabis in construction and implementation in the Gorička lža tourist complex	Križevci, Slovenia	14.12.2021-15.12.2021
	47	Ana Slavec	Open Science FAIR	Online	23.09.2021					

InnoRenew CoE employee national conference participation in 2021 / Udeležba zaposlenih na nacionalnih konferencah v letu 2021

	Employee / Zaposleni	Conference / Ime konference	Location / Lokacija	Date / Datum
1	Marica Mikuljan	Alpine policy forum	Online	16.01.2021
2	Andreja Kutnar, Črtomir Tavzes	How to reduce greenhouse gas emissions by using wood	Online	02.03.2021
3	Andreja Kutnar	Draft for recovery and resilience plan	Brdo, Kranj, Slovenia	26.03.2021
4	Iztok Šušteršič	Quality, safety and environmental benefits of timber products - Charm of wood 2021	Ljubljana, Slovenia	08.06.2021
5	Andreja Kutnar, Črtomir Tavzes	2nd Slovenian wood days	Ljubljana, Slovenia	09.06.2021
6	Andreja Kutnar	Transfer of skills of a low carbon building	Online	10.06.2021
7	Andreja Kutnar	New European Bauhaus in Cross Boarder region	Online	22.06.2021
8	Iztok Šušteršič	Assembly of building constructors of slovenia	Rogaška Slatina, Slovenia	08.10.2021
9	Dean Lipovac	Biological-psychological student conference	Koper, Slovenia	09.10.2021-10.10.2021
10	Andreja Kutnar	Environmental Meeting 2021	Ljubljana, Slovenia	19.10.2021
11	Ana Slavec	Knowledge network 2021	Online	24.11.2021-25.11.2021
12	Andreja Kutnar	Quality challenges in the future - 23rd day of quality	Online	25.11.2021

Outreach

InnoRenew CoE targets national and international audiences through multiple channels, including the institutional website (innorenew.eu), to keep the public informed about the institute's activities and results. In 2021, 242 news items and five newsletters were prepared as well as 46 feature articles that were also shared each Wednesday on social media under #WednesdayRead.

InnoRenew CoE's website was visited 49,088 times last year. Approximately 38 percent of users were from Slovenia, seven percent from the USA, six percent from China, and others were from other countries. InnoRenew CoE is active on social media with 1,633 likes on Facebook, 1,307 followers on Twitter, 1523 followers on LinkedIn and 44 videos posted to its YouTube channel.

In 2021, InnoRenew CoE was featured in 290 newspaper articles, 18 television shows and 8 radio programs.

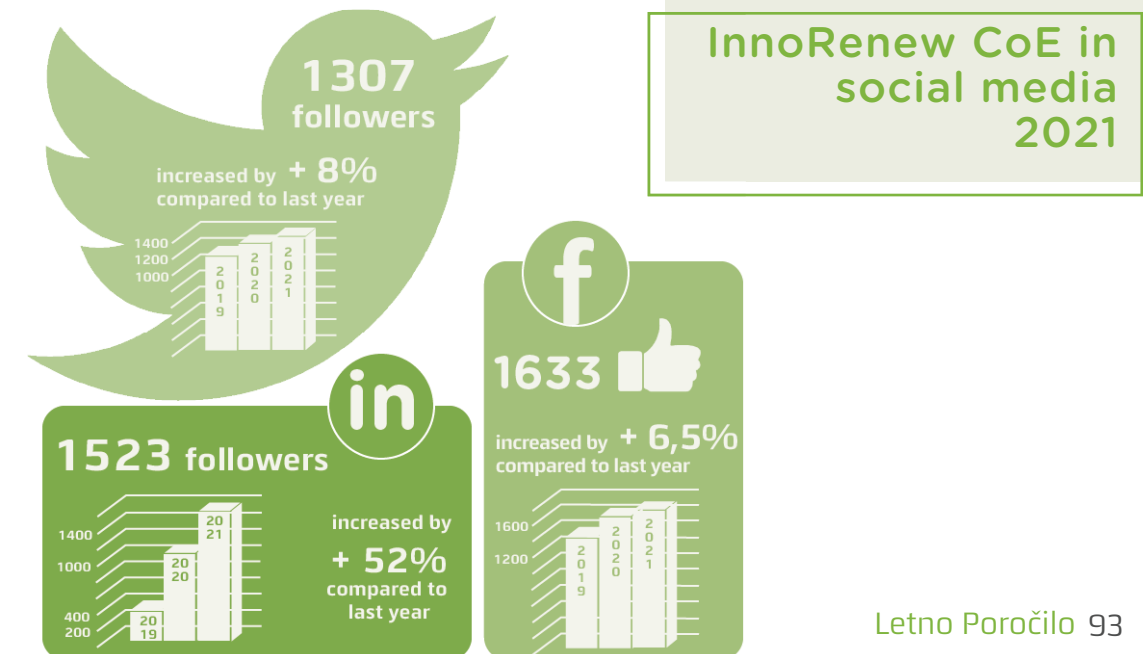
InnoRenew CoE za obveščanje slovenske in mednarodne javnosti uporablja številne kanale, vključno s svojo spletno stranjo (innorenew.eu). V letu 2021 je objavil 242 novic in pet novičnikov. Na družbenih omrežjih se poleg rednih novic pod ključnikom #WednesdayRead vsako sredo deli zanimiv prispevek, objavljen na spletni strani InnoRenew CoE. V letu 2021 je bilo objavljenih 46 takih prispevkov.

Spletna stran InnoRenew je imela 49.088 obiskov. Približno 38 odstotkov vseh uporabnikov je iz Slovenije, sedem odstotkov iz ZDA, šest iz Kitajske, ostali pa so iz ostalih držav sveta. Dejavní smo tudi na naših spletnih družbenih omrežjih na Facebooku, Twitterju, LinkedInu in YouTube, kjer se število aktivnih obiskovalcev in sledilcev še naprej povečuje. Na koncu leta 2021 smo zabeležili 1633 všečkov na Facebooku, 1307 sledilcev na Twitterju in 1523 na LinkedInu, na kanalu YouTube pa naloženih 44 videoposnetkov.

V letu 2021 je bil InnoRenew CoE predstavljen in omenjen v 290 nacionalnih in mednarodnih časopisih ter revijah, v 18 televizijskih programih in osmih radijskih oddajah.

InnoRenew CoE's 2021 outreach beyond scientific and professional communities / Obveščanje v letu 2021 (znanstvene in strokovne skupnosti niso vključene)

	Platform / Mediji	Quantity in 2021 / Količina v letu 2021
1	Social media	Facebook likes 1633
2		Twitter followers 1307
3		LinkedIn followers 1523
4	Newspaper articles	National 266
5		International (Belgium, Croatia, the Czech Republic, France, Finland, Italy, Lithuania, the Netherlands, Poland, Serbia, Spain) 24
6	TV shows	National 18
7	Radio shows	National 8



Trainings and meetings

Trainings

InnoRenew CoE employees attended 123 trainings and workshops in 2021.

Employee / Zaposleni	Training or workshop / Izobraževanje ali delavnica	Location / Lokacija	Date / Datum
1	Laetitia Marrot, Marica Mikuljan, David B. DeVallance, Václav Sebera, Tania Langella	FAÇADE Webinar Series	Online 13.01.2021
2	Andreja Kutnar	Wooden construction and sustainable construction indicators in Slovenia	Online 14.01.2021
3	Barbara Kotrle, Alijana Batič	Online education on green public procurement – General module for public procurement I	Online 15.01.2021
4	David Kodarin	Sustainable financing trends	Online 20.01.2021
5	Ana Slavec	Research Libraries, Researchers & the EOSC: Eastern European Landscape	Online 20.01.2021
6	David Kodarin	Renovation of a stone house in Istria	Online 21.01.2021
7	Ana Slavec	COST Action CA19117 Researcher Mental Health, WG1 Impact Workshop	Online 21.01.2021
8	Ana Slavec	EU-CDE FAIR data management and research data in doctoral education webinar	Online 22.01.2021
9	Andreja Kutnar	Green office – Sustainability and furniture webinar	Online 22.01.2021
10	Anna Sandak	LCA study on wood coatings	Online 26.01.2021
11	Nastja Podrekar Loredan	Navigating the publishing process and strategies for getting published	Online 27.01.2021
12	Oihana Gordobil	Webinar: National experiences with policies and regulations supporting the use of agricultural residues for energy	Online 28.01.2021
13	Oihana Gordobil	Webinar series 1: Use of by-products as sources of bioactive compounds	Online 04.02.2021

Izobraževanja in srečanja

Izobraževanja

V letu 2021 so se zaposleni v InnoRenew CoE udeležili 123 izobraževanj in delavnic.

Employee / Zaposleni	Training or workshop / Izobraževanje ali delavnica	Location / Lokacija	Date / Datum
14	Oihana Gordobil	Zelcor summer school: Zero waste biorefineries: value chain approach, methods and processes for lignin upgrading.	Online 08.02.2021
15	Oihana Gordobil	Webinar series 2: Methodologies for the evaluation of the bioactivity of a product	Online 11.02.2021
16	Veerapandian Ponnuchamy	COST Action CA18234 – Computational materials sciences for efficient water splitting with nanocrystals from abundant elements, Multiscale approaches for modeling water splitting with nanocrystals	Online 16.02.2021
17	Laetitia Marrot, Marica Mikuljan, Esakkiammal Sudha, Tania Langella	FAÇADE Webinar Series	Online 17.02.2021
18	Kelly Peeters	Restek Webinar	Online 23.02.2021
19	Tania Langella	Rheology of dispersed systems	Online 25.02.2021
20	Kelly Peeters	Restek Webinar	Online 02.03.2021
21	Kelly Peeters	Agilent 2021 Virtual Food Safety Analysis Symposium	Online 02.03.2021
22	Veerapandian Ponnuchamy	Beyond Lithium-Ion Batteries	Online 02.03.2021
23	Nežka Sajinčič, Anna Sandak	ClickDesign project meeting and student presentation session	Online 03.03.2021-05.03.2021
24	Matthew Schwarzkopf	Vapor Sorption Techniques for Characterization of Wood and Biomaterials	Online 11.03.2021
25	Anna Sandak	Vapor Sorption Techniques for Characterization of Wood and Biomaterials	Online 11.03.2021
26	Ana Slavec	Webinar on the grounds of copyright for text mining	Online 12.03.2021

Izobraževanja in delavnice, ki so se jih zaposleni v InnoRenew CoE udeležili v letu 2021

	Employee / Zaposleni	Training or workshop / Izbrazhevanje ali delavnica	Location / Lokacija	Date / Datum
27	Mateja Erce	Pharaon pre-validation workshop	Online	15.03.2021
28	Kelly Peeters	1st Agilent Lab Informatics Virtual Summit	Online	16.03.2021
29	Laetitia Marrot, Václav Sebera, Esakkiammal Sudha, Tania Langella	FAÇADE Webinar Series	Online	17.03.2021
30	Kelly Peeters	Restek's Workflows and Products for the Cannabis Market	Online	18.03.2021
31	Amy Simmons	GE Academy: Gender dimension in research: 4 Case Studies from the STEM Field	Online	18.03.2021
32	Kelly Peeters	Analysis of Amines in GC	Online	23.03.2021
33	Vesna Starman, Julija Uršič, Črtomir Tavzes	Loose cells	Online	23.03.2021
34	Veerapandian Ponnuchamy	EVRI-thing You Need to Know About Getting Started with PLS_Toolbox and Solo	Online	25.03.2021
35	Barbara Kotrle, Alijana Batič	Online education on green public procurement – General module for public procurement II	Online	30.03.2021
36	Vesna Starman, Julija Uršič, Črtomir Tavzes	Loose cells	Online	30.03.2021
37	Anna Sandak	Correlative AFM in SEM image and data processing	Online	30.03.2021
38	Dean Lipovac, Matic Sašek	DESIRE Workshop – Mental Health in Built Environment	Online	31.03.2021
39	Nastja Podrekar Loredan, Matic Sašek	DESIRE Workshop – Ergonomics in Built Environment	Online	01.04.2021
40	Vesna Starman	Loose cells	Online	06.04.2021
41	Nastja Podrekar Loredan	Using the International Children's Accelerometry Database (ICAD) to better understand physical activity and health in young people	Online	07.04.2021
42	Ana Slavec	Secure and Privacy-Aware Blockchain Design: Requirements, Challenges and Solutions	Online	12.04.2021
43	Ana Slavec	Heritage science as an instrument of integration between sciences	Online	13.04.2021
44	Vesna Starman	Loose cells	Online	13.04.2021

	Employee / Zaposleni	Training or workshop / Izbrazhevanje ali delavnica	Location / Lokacija	Date / Datum
45	Laetitia Marrot, Václav Sebera, Esakkiammal Sudha, Tania Langella	FAÇADE Webinar Series	Online	14.04.2021
46	Amy Simmons	GE Academy: Developing Gender Sensitivity in Human Computer Interaction Research	Online	15.04.2021
47	Balázs Dávid	Pedagogical training – Principles of student-centered higher education planning and implementation	Online	16.04.2021
48	Vesna Starman	Loose cells	Online	19.04.2021-21.04.2021
49	Michael Mrissa, Sidra Aslam	COST Action CA19126 – Positive Energy Districts European Network	Online	20.04.2021
50	Oihana Gordobil	Separation Science with Pure Chromatography	Online	20.04.2021
51	Oihana Gordobil	Drying your Sample through Freeze Drying (Lyophilization)	Online	22.04.2021
52	Balázs Dávid	Pedagogical training – Online remote assessment tools	Online	23.04.2021
53	Tania Langella	Problem solving in the composite supply chain: TGA and DSC analysis in practice	Online	23.04.2021
54	Ana Slavec	Data management plan (DMP)	Online	23.04.2021
55	Miklós Krész, Balázs Dávid	AnyLogistix workshop	Online	24.04.2021-24.04.2021
56	Oihana Gordobil	Five major steps in drug discovery	Online	29.04.2021
57	Amy Simmons	Webinar about COST Virtual Networking Tools	Online	07.05.2021
58	David Kodarin	IGLO Open Webinar: Priorities of the Slovenian Presidency in Science, Research and Innovation	Online	07.05.2021
59	Veerapandian Ponnuchamy	NOMAD online tutorial, Workflow Management Part 1	Online	10.05.2021-11.05.2021
60	Vesna Starman	Loose cells	Online	11.05.2021
61	Laetitia Marrot, Václav Sebera, Esakkiammal Sudha, Tania Langella	FAÇADE Webinar Series	Online	12.05.2021
62	Ana Slavec	How to win support for the Well-Being of Early-Career Researchers	Online	12.05.2021

Employee / Zaposleni	Training or workshop / Izobraževanje ali delavnica	Location / Lokacija	Date / Datum
63	Oihana Gordobil	Online	13.05.2021
64	Ana Slavec	Online	13.05.2021
65	Balázs Dávid	Online	14.05.2021
66	Ana Slavec	Online	14.05.2021
67	Michael Mrissa, Sidra Aslam	Biarritz, France	18.05.2021
68	Vesna Starman	Online	18.05.2021
69	Sidra Aslam	Online	18.05.2021
70	Oihana Gordobil	Online	19.05.2021
71	David Kodarin	Online	21.05.2021
72	Balázs Dávid	Online	25.05.2021
73	Ana Slavec	Online	25.05.2021
74	Dean Lipovac, Ana Slavec	Online	26.05.2021
75	Amy Simmons	Online	26.05.2021
76	Balázs Dávid	Online	28.05.2021-30.05.2021
77	Jakub Sandak, Oihana Gordobil	Ljubljana, Slovenia	13.06.2021-15.06.2021

Employee / Zaposleni	Training or workshop / Izobraževanje ali delavnica	Location / Lokacija	Date / Datum
78	Vesna Starman	Online	14.06.2021-16.06.2021
79	Lea Primožič	Online	17.06.2021-18.06.2021
80	Miklós Krész, Balázs Dávid	Online	21.06.2021-25.06.2021
81	Nastja Podrekar Loredan	Bratislava, Slovakia	29.06.2021-03.07.2021
82	Ana Slavec	Online	01.07.2021
83	Kaja Kastelic	Online	01.07.2021
84	Vesna Starman	Online	05.07.2021-08.07.2021
85	Lea Primožič, Andreja Kutnar	Online	09.07.2021
86	Sidra Aslam	Online	24.08.2021
87	David Kodarin	Online	24.08.2021
88	Mateja Erce	Izola, Slovenia	22.09.2021
89	Mariem Zouari	Parma, Italy	27.09.2021-30.09.2021
90	David Kodarin	Online	30.09.2021
91	Anna Sandak	Porto, Portugal	30.09.2021-01.10.2021
92	Andreja Kutnar, Michael Burnard	Paris, France	14.07.2021-16.07.2021
93	Laetitia Marrot, Marica Mikuljan, Mariem Zouari	Online	15.09.2021
94	Ana Slavec	Online	22.09.2021

	Employee / Zaposleni	Training or workshop / Izobraževanje ali delavnica	Location / Lokacija	Date / Datum
95	Mateja Erce	NiCE-life INTERREG CE project – 4th regional workshop on supporting the i+C77:C85 independent living of fragile older people in the home environment	Online	28.09.2021
96	Vesna Starman, Jaka Pečnik, Laetitia Marrot, Esakkiammal Sudha,	European Researchers' Night 2021	Online and Koper, Slovenia	28.09.2021
97	David Kodarin	New features of the Funding and Tenders Portal	Online	01.10.2021
98	Mateja Erce, Dean Lipovac	COST Action CA16226 – Indoor living space improvement: Smart Habitat for the Elderly workshop	Online	05.10.2021
99	Anna Sandak	SHARE dataset and analysis of nonstandard data: Examples and applications +C77:C85	Online	06.10.2021
100	David Kodarin	Success at the public calls with good project proposal	Online	06.10.2021
101	Mariem Zouari	Impact of Relative Humidity on the adsorption of volatile organic Chemical pollutants by Porous Materials	Online	07.10.2021
102	Kaja Kastelic	ISPAH Sedentary Behaviour Council: The knick knacks of the measurements and analysis of sedentary behaviour	Online	11.10.2021
103	David Kodarin	Success at the public calls with good project proposal	Online	12.10.2021
104	David Kodarin	Success at the public calls with good project proposal	Online	14.10.2021
105	Mateja Erce, Dean Lipovac, Anna Sandak	COST Action CA16226 – Indoor living space improvement: Smart Habitat for the Elderly workshop	Online	15.10.2021
106	Amy Simmons, Elizabeth Dickinson	ReMO Webinar: Mental health challenges and ethical dilemmas – approaches to dealing with uncomfortable situations	Online	19.10.2021
107	Jakub Sandak	Near infrared spectroscopy and hyperspectral imaging for characterization of biological materials	Online	19.10.2021-22.10.2021

	Employee / Zaposleni	Training or workshop / Izobraževanje ali delavnica	Location / Lokacija	Date / Datum
108	Dean Lipovac	COST Action CA16226 – Indoor living space improvement: Smart Habitat for the Elderly workshop	Online	20.10.2021
109	Laetitia Marrot	FAÇADE Webinar Series	Online	20.10.2021
110	Ana Slavec	Assessment of academic research: Finding a balance between quantitative and qualitative indicators	Online	22.10.2021
111	Miklós Krész	Quantiminformation and optimization	Online	26.10.2021-27.10.2021
112	Ana Slavec	How to incentivise and reward open scientific practices	Online	02.11.2021
113	Ana Slavec	Access to research infrastructure according to the principle of open access	Online	09.11.2021
114	Anna Sandak	ERC workshop	Online	11.11.2021
115	Ana Slavec	Statistical seminar for UP FAMNIT doctoral students Suicidology and Mental Health	Online	16.11.2021
116	Ana Slavec	Sociological research on aspects of the COVID-19 pandemic in Slovenia	Online	17.11.2021
117	Ana Slavec	Open hardware	Online	23.11.2021
118	Ana Slavec	Suport for FAIR in EOSC	Online	30.11.2021
119	Anna Sandak	Practical applications for surface tension and contact angle	Online	30.11.2021
120	Andreja Kutnar	High-level Workshop on research and innovation for the New European Bauhaus	Brussels, Belgium	30.11.2021
121	Anna Sandak	Surface modification: Innovative coating systems, surface finishing – lectures for chamber of commerce	Online	03.12.2021
122	Balázs Dávid, Miklós Krész	Workshop on OR in waste management	Online	09.12.2021
123	Miklós Krész	ML meets optimization workshop	Online	16.12.2021

Meetings

In 2021, InnoRenew CoE employees attended 88 professional society, COST Action, research project and industrial meetings.

Meetings attended by InnoRenew CoE employees in 2021 / Srečanja, ki so se jih zaposleni v InnoRenew CoE udeležili v letu 2021

	Employee / Zaposleni	Meeting / Sestanek	Location / Lokacija	Date / Datum
1	Michael Burnard	Pharaon General Assembly meeting	Online	18.01.2021
2	Miklós Krész	COST Action CA19134 – Distributed Knowledge Graphs kick off meeting	Online	20.01.2021
3	René Herrera Díaz	COST Action CA18220 – European network of FURan based chemicals and materials FOR a Sustainable development, MC meeting	Online	21.01.2021
4	Anna Sandak	COST Action CA16226 Indoor living space improvement: Smart Habitat for the Elderly, core group meeting	Online	21.01.2021
5	David Kodarin	WOOLF project meeting	Online	25.01.2021
6	Anna Sandak, Jakub Sandak, Miklós Krész, Michael Mrissa	BIM project meeting	Online	28.01.2021
7	Anna Sandak, Jakub Sandak, Nežka Sajinčič	ClickDesign project meeting	Online	29.01.2021
8	Ana Slavec	Meetup open data meeting on COVID-19	Online	02.02.2021
9	Vesna Starman, Julija Uršič, Václav Sebera, Črtomir Tavzes	Loose cells project meeting	Online	03.02.2021
10	Nežka Sajinčič	ClickDesign Educational content meeting	Online	09.02.2021

Srečanja

V letu 2021 so se zaposleni v InnoRenew CoE udeležili 88 srečanj, vključno s sestanki upravnih odborov strokovnih združenj in akcij COST. Kot aktivni člani so sodelovali tudi na sestankih raziskovalnih projektov in projektov z industrijskimi partnerji.

	Employee / Zaposleni	Meeting / Sestanek	Location / Lokacija	Date / Datum
11	Vesna Starman, Julija Uršič, Václav Sebera, Črtomir Tavzes, Lea Primožič	Loose cells project meeting	Online	10.02.2021
12	Vesna Starman, Balázs Dávid	COST Action CA19122 – European Network For Gender Balance in Informatics WG4 meeting - Cooperation with Industry and Society	Online	16.02.2021
13	Vesna Starman, Julija Uršič, Václav Sebera, Črtomir Tavzes	Loose cells project meeting	Online	17.02.2021
14	Vesna Starman, Julija Uršič, Václav Sebera, Črtomir Tavzes	Loose cells project meeting	Online	22.02.2021
15	Mateja Erce, Dean Lipovac	Pharaon project meeting	Online	05.03.2021
16	Miklós Krész	BIM start-up project meeting	Online	05.03.2021
17	Lea Primožič	New European Bauhaus info session	Online	11.03.2021
18	Vesna Starman, Julija Uršič, Václav Sebera, Črtomir Tavzes, Lea Primožič	Loose cells project meeting	Online	13.03.2021
19	Vesna Starman	COST Action CA19122 – European Network For Gender Balance in Informatics WG4 meeting Cooperation with Industry and Society	Online	24.03.2021
20	Mateja Erce, Dean Lipovac	Pharaon project meeting	Online	26.03.2021
21	Nastja Podrekar Loredan, Matic Sašek	DESIRE project meeting	Online	26.03.2021
22	Ana Slavec	COST Action CA19117 – Researcher Mental Health Core group meeting	Online	29.03.2021

	Employee / Zaposleni	Meeting / Sestanek	Location / Lokacija	Date / Datum
23	Vesna Starman	Loose cells project meeting	Online	06.04.2021
24	Vesna Starman	Loose cells project meeting	Online	12.04.2021
25	Nežka Sajinčič	BRACKET Project Sixth Transnational Meeting	Online	13.04.2021
26	Oihana Gordobil	COST Action CA17128 – Establishment of a Pan-European Network on the Sustainable Valorisation of Lignin Working groups meeting	Online	26.04.2021
27	Mateja Erce	Pharaon pre-validation workshop	Online	15.03.2021
28	Miklós Krész	Meeting with Stora Enso Building Solution Team	Online	28.04.2021
29	Vesna Starman	COST Action CA19122 – European Network For Gender Balance in Informatics, Working Group 4 - Cooperation with Industry and Society	Online	29.04.2021
30	Vesna Starman	ClickDesign project meeting	Online	03.05.2021
31	Sidra Aslam	COST Action CA19126 – Positive Energy Districts European Network meeting	Online	05.05.2021
32	Nežka Sajinčič, Anna Sandak	ClickDesign project meeting	Online	06.05.2021
33	Vesna Starman	Loose cells project meeting	Online	10.05.2021
34	Kelly Peeters	Proenrich General Assembly meeting	Online	10.05.2021
35	Kelly Peeters	Proenrich General Assembly meeting	Online	12.05.2021
36	Anna Sandak	MSCA-IF meeting with the ministry	Online	12.05.2021
37	Miklós Krész	COST Action CA 19134 Distributed Knowledge Graphs meeting	Online	20.05.2021
38	David B. DeVallance	Slovenian-Bavarian Scientific Form, meeting of rectors and vice-rectors	Online	28.05.2021
39	Anna Sandak	COST Action CA16226 Indoor living space improvement: Smart Habitat for the Elderly meeting	Online	01.06.2021

	Employee / Zaposleni	Meeting / Sestanek	Location / Lokacija	Date / Datum
40	Amy Simmons	2nd Grant Holder Managers Online Seminar	Online	01.06.2021
41	Kaja Kastelic	INTUE 2021 Annual Meeting	Online	03.06.2021
42	Esakkiammal Sudha, Veerapandian Ponnuchamy	A Live Virtual Visit to the Chemistry Laboratories in Slovenia and S.Korea	Online	08.06.2021
43	Lea Primožič	New European Bauhaus Prizes, information session for partners	Online	15.06.2021
44	Anna Sandak	ClickDesign project meeting	Online	23.06.2021
45	Vesna Starman	COST Action CA19122 – European Network For Gender Balance in Informatics meeting	Online	26.06.2021
46	Matthew Schwarzkopf	Wood & Furniture – R&D, Testing, Certification, Innovation & Knowledge Transfer	Online	01.07.2021
47	Anna Sandak	Olive4value kick off meeting	Online	08.07.2021-09.07.2021
48	Michael Burnard	InnovaWood General Assembly	Online	08.07.2021-09.07.2021
49	Balázs Dávid, Miklós Krész	COST Action CA19134 – Distributed Knowledge Graphs meeting	Online	14.07.2021
50	David B. DeVallance, Jaka Pečnik	Presenttaion at Student dormitory of the Secondary Forestry and Woodworking School	Postojna, Slovenia	29.07.2021
51	Anna Sandak	ClickDesign project meeting	Online	12.08.2021
52	David B. DeVallance, Jaka Pečnik	Meeting for Potential Woodchip Pad HUA Site	Banjščice, Slovenia	19.08.2021
53	Vesna Starman	COST Action CA19122 – European Network For +C55:E80 Gender Balance in Informatics meeting	Online	26.08.2021
54	Vesna Starman	Loose cells project meeting	Online	28.08.2021
55	Oihana Gordobil	CA17128 – Establishment of a Pan-European Network on the Sustainable Valorisation of Lignin meeting	Online	01.09.2021-02.09.2021

	Employee / Zaposleni	Meeting / Sestanek	Location / Lokacija	Date / Datum		Employee / Zaposleni	Meeting / Sestanek	Location / Lokacija	Date / Datum	
	56	Balázs Dávid, Miklós Krész	Development of multi-objective optimisation algorithms for the design of buildings project meeting	Pécs, Hungary	02.09.2021-04.09.2021	73	Amy Simmons	COST Action CA18209 European network for Web-centred linguistic data science 4th MC meeting	Bologna, Italy	13.10.2021-16.10.2021
	57	Balázs Dávid, Miklós Krész	COST Action CA 19134 – Distributed Knowledge Graphs meeting	Online	08.09.2021-09.09.2021	74	Mateja Erce, Dean Lipovac, Anna Sandak	COST Action CA16226 Indoor living space improvement: Smart Habitat for the Elderly meeting	Online	14.10.2021
	58	Iztok Šušteršič	WOOLF project meeting	Žiri, Slovenia	13.09.2021	75	Matthew Schwarzkopf	Pro-Enrich Final Event	Online	14.10.2021-15.10.2021
	59	Sidra Aslam, Michael Mrissa	COST Action CA19126 – Positive Energy Districts European Network meeting	Online	14.09.2021	76	Ana Slavec, Lea Primožič	Innovation activities of Austrian and Slovenian companies in the wood-value chain bilateral project meeting	Graz, Austria	14.10.2021-15.10.2021
	60	Balázs Dávid, Miklós Krész, Michael Mrissa, Jan Včelák	Meeting with InoSens company for joint research collaboration	Ljubljana, Slovenia	20.09.2021	77	Ana Slavec	Invited lecture for the course Selected Topics of Innovatoin Management	Graz, Austria	15.10.2021
	61	Ana Slavec	COST Action CA18204 – Dynamics of placemaking and digitization in Europe’s cities MC meeting	Online	21.09.2021	78	Iztok Šušteršič, Lea Primožič, Gertrud Fábrián	Woodrise Alliance Annual Meeting	Online	18.10.2021
	62	Anna Sandak, Nežka Sajinčič	ClickDesign project meeting	Online	22.09.2021-24.09.2021	79	Ana Slavec	Meeting with co-authors of the study on vaccination against COVID-19	Maribor, Slovenia	19.10.2021
	63	Mateja Erce	Pharaon meeting	Ljubljana, Slovenia	28.09.2021	80	Nežka Sajinčič	COST Action CA18236 – Multi-disciplinary innovation for social change MC and WG meetings	Aveiro, Portugal	20.10.2021-23.10.2021
	64	Ana Slavec	Welcome meeting of the Slovenian open science community	Online	29.09.2021	81	Alenka Volk, Mateja Erce, Michael Burnard	Pharaon Plenary Meeting	Amsterdam, Netherlands	08.11.2021-11.11.2021
	65	Esakkiammal Sudha	COST Action CA19124 – Rethinking packaging for circular and sustainable food supply chains of the future WG meeting	Giovinazzo, Italy	30.09.2021-01.10.2021	82	Ana Slavec	Statistical seminar for doctoral students in Suicidology and Mental Health	Koper, Slovenia	16.11.2021
	66	Anna Sandak	COST Action CA19145 – European Network for assuring food integrity using non-destructive spectral sensors MC meeting	Porto, Portugal	30.09.2021-01.10.2021	83	Vesna Starman	CA19122 – European Network For Gender Balance in Informatics meeting	Online	24.11.2021
	67	Nastja Podrekar Loredan	DESIRE project meeting	Online	30.09.2021	84	Anna Sandak	Olive4value steering committee meeting	Online	24.11.2021
	68	Mateja Erce	SWAT 2nd meeting	Online	05.10.2021	85	Igor Gavrić, Izток Šušteršič	6th DYNA-TTB project meeting	Exeter, United Kingdom	28.11.2021-01.12.2021
	69	Ana Slavec	Slovenian RDA node	Online	08.10.2021	86	Ana Slavec, Lea Primožič	Innovation activities of Austrian and Slovenian companies in the wood-value chain bilateral project meeting	Online	18.11.2021
	70	Ana Slavec	COST Action CA18204 – Dynamics of placemaking and digitization in Europe’s cities MC meeting	Online	11.10.2021	87	Michael Burnard	WoodCircus Policy Event and project meeting	Brussels, Belgium	30.11.2021-02.12.2021
	71	Ana Slavec	COST Action CA19117 – Researcher Mental Health Manifesto Launch	Online	11.10.2021	88	Ana Slavec	Expert consultation on online panels and combined survey methods	Online	01.12.2021
	72	Matthew Schwarzkopf	Pro-Enrich General Assembly Meeting	Online	13.10.2021					

Research visits

InnoRenew CoE employees undertook ten extended research visits abroad in 2021.

InnoRenew CoE employee research visits abroad in 2021 / Raziskovalni obiski, ki so jih zaposleni v InnoRenew CoE leta 2021 opravili v tujini

	Employee / Zaposleni	Research visit / Raziskovalni obisk	Location / Lokacija	Date / Datum
1	Laetitia Marrot	Short Term Scientific Mission for COST Action CA17107 European Network to connect research and innovation efforts on advanced Smart Textiles	Montpellier, France	11.01.2021-22.01.2021
2	Faksawat Poohphajai	Research visit for the "Fingerprinting of microbial communities on contaminated wooden surfaces for further identification and differentiation of fungal species and strains" project	Luleå, Sweden	21.04.2021-01.11.2021
3	Oihana Gordobil	Short Term Scientific Mission for COST Action CA17128 Establishment of a Pan-European Network on the Sustainable Valorisation of Lignin	San Sebastián, Spain	03.05.2021 - 21.05.2021
4	Sidra Aslam	Short Term Scientific Mission for COST Action CA19126 Positive Energy Districts European Network	Budapest, Hungary	01.06.2021-30.06.2021
5	Oihana Gordobil	Short Term Scientific Mission for COST Action CA17128 Establishment of a Pan-European Network on the Sustainable Valorisation of Lignin	Stockholm, Sweden	29.08.2021-10.09.2021

Raziskovalni obiski

V letu 2021 so zaposleni v InnoRenew CoE opravili deset daljših raziskovalnih obiskov v tujini.

	Employee / Zaposleni	Research visit / Raziskovalni obisk	Location / Lokacija	Date / Datum
6	Veerapandian Ponnuchamy	Short Term Scientific Mission for COST Action CA18234 Computational materials sciences for efficient water splitting with nanocrystals from abundant elements	Eindhoven, Netherlands	03.10.2021-16.10.2021
7	Mariem Zouari	Short Term Scientific Mission for CA19118 High-performance Carbon-based composites with Smart properties for Advanced Sensing Applications	Bucharest, Romania	10.10.2021-22.10.2021
8	Lea Primožič	Research visit to University of Amsterdam	Amsterdam, Netherlands	25.10.2021-15.11.2021
9	Esakkiammal Sudha Esakkimuthu	Secondment to Stockholm University for the PACK-NIN project, Marie Skłodowska-Curie Actions Individual Fellowship	Stockholm, Sweden	01.12.2021-28.02.2022
10	René Alexander Herrera Díaz	Research visit to Analytical and Physicochemical Sciences for the Environment and Materials (IPREM), University of Pau and the Adour Region	Mont de Marsan, France	19.12.2021-30.12.2021

Institutional / Članstva InnoRenew CoE

InnoRenew CoE holds organizational memberships in nine associations that are important to the institute's research. In 2021, InnoRenew CoE became a partner in the New European Bauhaus, the European Commission's initiative for sustainable building.

InnoRenew CoE je član devetih združenj, ki so pomembna za raziskovalna področja inštituta. V letu 2021 je InnoRenew CoE postal tudi partner pobude Novi evropski Bauhaus – glavne iniciative Evropske komisije za trajnostno gradnjo.

InnoRenew CoE institutional memberships / Članstva InnoRenew CoE v združenjih

	Organization / Združenje	Membership / Članstvo
1	InnovaWood	Full
2	Forest Products Society	Bronze
3	European Forestry Institute	Associate
4	EURAXESS – Researchers in Motion	Contact Point
5	Woodrise International Alliance	Member
6	Slovenian Institute for Standardization	Member
7	Strategic Research and Innovation Partnership Smart Buildings and Home Including Wood Chain	Member
8	Strategic Research and Innovation Partnership Network for the Transition into Circular Economy	Member
9	New European Bauhaus	Partner

COST Actions / Akcije COST

In 2021, the institute has employees engaged in 20 thematically appropriate COST Actions. COST (European Cooperation in Science and Technology) Actions are useful platforms to enhance researchers' networking.

Zaposleni v InnoRenew CoE so bili v letu 2021 vključeni v 20 tematsko ustreznih akcij COST. Akcije COST (European Cooperation in Science and Technology) so zelo koristna in uporabna platforma, ki spodbuja mreženje.

InnoRenew CoE COST Action involvement / Vključenost InnoRenew CoE v akcijah COST

	COST Action / Akcija COST	Member(s) / Člani
1	CA16226 Indoor living space improvement: Smart Habitat for the Elderly	Michael Burnard (MC member, vice chair) Jakub Sandak (MC substitute) Anna Sandak (MC member, WG vice-leader) Michael Mrissa (WG member) Dean Lipovac (WG member)
2	CA16114 RETHinking Sustainability TOwards a Regenerative Economy	Michael Burnard (MC member) Iztok Šušteršič (MC substitute)
3	CA16215 European network for the promotion of portable, affordable and simple analytical platforms	Michael Burnard (MC substitute) Oihana Gordobil (WG member) Jakub Sandak (MC member)
4	CA15216 European Network of Bioadhesion Expertise: Fundamental Knowledge to Inspire Advanced Bonding Technologies	Anna Sandak (WG member)
5	CA17107 European Network to connect research and innovation efforts on advanced Smart Textiles	Laetitia Marrot (MC substitute)
6	CA18201 An integrated approach to conservation of threatened plants for the 21st Century	Amy Simmons (Grant holder manager/administrator)
7	CA18234 Computational materials sciences for efficient water splitting with nanocrystals from abundant elements	Veerapandian Ponnuchamy (MC member, WG member)
8	CA18204 Dynamics of placemaking and digitalization in Europe's cities	Ana Slavec (MC member), Tim Mavrič (MC substitute)
9	CA18236 Multi-disciplinary innovation for social change	Nežka Sajinčič (MC member)
10	CA16228 European Network for Game Theory	Miklós Krész (WG member)
11	CA19126 Positive Energy District European Network	Michael Mrissa (MC), Sidra Aslam (MC substitute)
12	CA17128 Establishment of a Pan-European Network on the Sustainable Valorisation of Lignin	Oihana Gordobil (WG member)

	COST Action / Akcija COST	Member(s) / Člani
13	CA18220 European network of FURan based chemicals and materials FOR a Sustainable development	René Herrera Díaz (MC member)
14	CA19145 European Network for assuring food integrity using non-destructive spectral sensors	Anna Sandak (MC member, ITC conference manager)
15	CA19118 High-performance Carbon-based composites with Smart properties for Advanced Sensing Applications	Jan Včelák (MC member), David B. DeVallance (MC member), Laetitia Marrot (MC substitute)
16	CA19134 Distributed Knowledge Graphs	MiKlós Krész (MC member), Balázs Dávid (MC substitute)
17	CA19117 Researcher Mental Health	Ana Slavec (MC member), Dean Lipovac (MC substitute)
18	CA19122 European Network For Gender Balance in Informatics	Balázs Dávid (MC member), Vesna Starman (MC substitute)
19	CA20139 Holistic Design of Taller Timber Buildings	Iztok Šušteršič (MC member, Chair candidate), Amy Simmons (Grant holder administrator)
20	CA20127 Waste biorefinery technologies for accelerating sustainable energy	Oihana Gordobil (MC member)

Individual memberships / Individualna članstva zaposlenih

InnoRenew CoE employees are individual members of 90 national and international organizations, which span the fields of wood science, wood technology, forestry, mathematics, kinesiology, education and research.

Zaposleni v InnoRenew CoE so člani 90 nacionalnih in mednarodnih združenj. Večina teh organizacij je s področij lesarstva, lesarske tehnologije, gozdarstva, matematike, kineziologije, izobraževanja in raziskovanja kot takega.

InnoRenew CoE employee memberships / Individualna članstva zaposlenih

	Organization / Združenje	Employee / Zaposleni	Membership / Članstvo
1	Young Academy of Europe	Andreja Kutnar	Montpellier, France
2	Society of Wood Science and Technology	Andreja Kutnar	Board Member
		Michael Burnard	Board Member
3	Society for Wood Science and Technology, Strategic Initiatives Committee	Matthew John Schwarzkopf, Jakub Sandak, David B. DeVallance, Václav Sebera, Anna Sandak, Amy Simmons	Member
		Short Term Scientific Mission for COST Action CA17128 Establishment of a Pan-European Network on the Sustainable Valorisation of Lignin	Stockholm, Sweeden
3	Wood & Fiber Science Journal	Andreja Kutnar	Editorial Board
4	InnovaWood	Michael Burnard	Vice president
5	International Society for Plant Spectroscopy (ISPS)	Anna Sandak	Member
6	IUFRO Officeholder	Erwin M. Schau	Coordinator of WP 5.12.01 - LCA of Forest Products
		Anna Sandak	Deputy of division 5.03.05 - Biological resistance of wood
7	International Research Group on Wood Protection (IRG)	Anna Sandak	Member, Communications Committee Member
		Veerapandian Ponnuchamy	Member
8	Network of Early-carrier Sustainable Scientist & Engineers (NESSE)	Anna Sandak	Member

	Organization / Združenje	Employee / Zaposleni	Membership / Članstvo
9	International Committee for Near Infrared Spectroscopy (ICNIRS)	Anna Sandak	Member of the Committee
		René Herrera Díaz	Member
10	Italian Society for Near Infrared Spectroscopy (SISNIR)	Anna Sandak	Member
		Jakub Sandak	Member
11	Research Society "Hungarian Operations Research Society"	Balázs Dávid	Member
		László Hajdu	Member
		Miklós Krész	Member
12	EU Environmental Footprint Technical Advisory Board; European Commission, Belgium	Erwin M. Schau	Member
13	Forest Products Society	Matthew Schwarzkopf	Member
		David B. DeVallance	Member, Past President
14	European Mechanics Society, contact person for MENDELU	Václav Sebera	Member
15	European Council of Doctoral Candidates and Junior Researchers (Eurodoc), Europe	Ana Slavec	WG Open Science Co-coordinator
16	Research Data Alliance, international association	Ana Slavec	Member
		Miklós Krész	Member
		René Herrera Díaz	Member
17	Association Young Academy (Mlada akademija), Slovenia	Ana Slavec	Supervisory Board Member
18	Slovenian Statistical Society, Slovenia	Ana Slavec	Member
19	International Wood Machining Seminar (IWMS)	Jakub Sandak	Member of Advisory Committee
20	WVU Student Forest Products Society Chapter	David B. DeVallance	Advisor
21	Slovenian Discrete and Applied Mathematics Society	Miklós Krész	Member

	Organization / Združenje	Employee / Zaposleni	Membership / Članstvo
22	Public Body of the Hungarian Academy of Sciences	Miklós Krész	Member
23	Slovenian Associations of Wood Science and Technology	Marica Mikuljan, Andreja Kutnar	Board Member
		Andreja Kutnar	Chairperson of National Support Group Slovenia
24	Forest Technology Platform	Črtomir Tavzes	Member of the Advisory Committee of the Forest-based sector
		Andreja Kutnar	Affiliated faculty member
25	Oregon State University, USA	Andreja Kutnar	Affiliated faculty member
26	Slovene chamber of architects (ZAPS), Slovenia	Eva Prelovšek Niemelä	Member
27	Finnish Association of Architects (SAFA), Finland	Aarne Johannes Niemelä	Member
28	EOSC FAIR Working Group, European Open Science Cloud	Ana Slavec	Member
29	The National Committee of Research Guarantors, REPRISE	Anna Sandak	Member
30	Slovenian Kinesiology Association	Darjan Smajla	Member
		Matic Sašek	Founding Member
31	Association of International Education Administrators (AIEA)	David B. DeVallance	Presidential Fellow
32	European Committee for Standardization (CEN) - Technical Committee 250	Igor Gavrić, Iztok Šušteršič	Member
33	Slovenian Institute for Standardization (SIST) national technical committee	Igor Gavrić, Iztok Šušteršič	Member

	Organization / Združenje	Employee / Zaposleni	Membership / Članstvo
34	International Society for the Measurement of Physical Behaviour	Kaja Kastelic	Member
35	ProPASS Early Career Researcher Network	Kaja Kastelic	Member
36	International Network of Time-use Epidemiologists, Victoria, Australia	Kaja Kastelic	Member
37	Sedentary Behaviour Research Network	Kaja Kastelic	Member
38	International Society of Behavioral Nutrition and Physical Activity	Kaja Kastelic	Member
39	Beta Gamma Sigma	Lea Primožič	Member
40	Association of Bonding Psychotherapists of Slovenia	Mateja Erce	Member
41	Slovenian network of EUMATHS-IN: European Service Network of Mathematics for Industry	Miklós Krész	Representative of the University of Primorska
42	Health Enhancing Physical Activity (HEPA Europe)	Nastja Podrekar	Member
43	International Society of Behavioral Nutrition and Physical Activity	Nastja Podrekar	Member
44	Royal Academy of Sciences Foundation of Spain	Oihana Gordobil	Member
45	Slovenian Acoustical Society	Rok Prislan	Secretary
46	Slovene network for Social Responsibility	Vesna Starman	Secretary
47	Association for Social Pedagogy	Vesna Starman	Member
48	Coatings	Rene Herrera Diaz	Guest Editor
		Anna Sandak	Guest Editor
49	Chemosensors	Anna Sandak	Topic Editor

	Organization / Združenje	Employee / Zaposleni	Membership / Članstvo
50	Interdisciplinary Perspectives on the Built Environment	Anna Sandak	Topic Editor
		Miklós Krész	Topic Editor
		Iztok Šušteršič	Topic Editor
51	Journal of Wood Material Science and Engineering	Andreja Kutnar	Co-Editor
52	Science and Technology Council of the Republic of Slovenia	Andreja Kutnar	Member
53	European Journal of Wood and Wood Products	Andreja Kutnar	Editorial Board
54	Slovenian President Borut Pahor's Consultative Committee for Climate Policy	Andreja Kutnar	Member
55	EURO - Association of European Operational Research Societies	Miklós Krész	Working Group member: EWG SSC, EWG DSO, EWG PATAT, EWG ECCO
56	Material Economy and Logistics Journal	Miklós Krész	Scientific Board member
57	The Social Chamber of Slovenia	Mateja Erce	Member
58	International Society of Bonding Psychotherapy	Mateja Erce	Member
59	Strategic Research and Innovation Partnership (SRIP)	Iztok Šušteršič	Member of Smart buildings and home with the woodchain and Head of timber constructions sector
60	Applied sciences	Nejc Šarabon	Guest Editor
61	Cosmetics	Oihana Gordobil	Guest Editor

	Organization / Združenje	Employee / Zaposleni	Membership / Članstvo
62	Crisis	Diego De Leo	Chief Editor
63	Drvena industrija : Znanstveno stručni časopis za pitanja drvene tehnologije	Jakub Sandak	Editorial Board
64	European Journal of Translational Myology	Nejc Šarabon	Editorial Board
65	Frontiers in human neuroscience	Nejc Šarabon	Editorial Board
66	Homo sporticus : naučno-stručni časopis iz oblasti sporta i tjelesnog odgoja	Nejc Šarabon	Editorial Board
67	Journal of sports science	Nejc Šarabon	Editorial Board
68	Montenegrin journal of sports science and medicine	Nejc Šarabon	Editorial Board
69	Symmetry	Nejc Šarabon	Guest Editor
70	Buildings	Igor Gavrić	Topic Editor
71	Italian Mechanical Technology Society (AITEM)	Tania Langella	Member
72	Dynamic EU building stock knowledge hub	Anna Sandak	BuiltHub Stakeholder
73	Journal of Near Infrared Spectroscopy	Anna Sandak	Guest Editor
74	Alps-Adriatic Rectors Conference	David B. DeVallance	Scientific Committee and General Assembly Member
75	Polymers	Rene Herrera Diaz	Guest Editor
		Oihana Gordobil	
		David B. DeVallance	Topic Editor

	Organization / Združenje	Employee / Zaposleni	Membership / Članstvo
76	Applied sciences	Igor Gavrić	Topic Editor
		Erwin M. Schau	Chef Guest Editor
77	Sustainability	Eva Prelovšek Niemelä	Assistant Guest Editor
78	Scientific and Business Committee of the Life Cycle Management Conference	Erwin M. Schau	Member
79	VDI – The Association of German Engineers	Erwin M. Schau	Member
80	Noflyclimatesci.org	Václav Sebera	Member
81	Czech Climate Litigation	Václav Sebera	Member
82	Labour union ReVision	Václav Sebera	Chief
83	Technical Advances in Plant Science (specialty section of Frontiers in Plant Science).	Anna Sandak	Review Editor
84	Slovene chamber of engineers	Iztok Šušteršič	Member
85	Forest	Rene Herrera Diaz	Guest Editor
86	Maderas Ciencia y Tecnología Journal	Rene Herrera Diaz	Co-Editor
87	International Society of Physical Activity for Health	Kaja Kastelic	Member
88	Koper Regional Museum	Tim Mavrič	Member of Council of the Institute
89	Alternative Infrastructure for Gender Equality in Academic Institutions	Amy Simmons	Member
90	International Academy of Wood Science	Andreja Kutnar	Member

Teaching

Thirty-one InnoRenew CoE employees had teaching assignments at six higher education faculties during the 2020-2021 academic year for courses that spanned the fields of wood science, computer science, renewable materials, sustainability, research and scientific writing, kinesiology, ergonomics and data science.

InnoRenew CoE employee teaching assignments for academic year 2020-2021 / Pedagoška dejavnost zaposlenih v InnoRenew CoE v študijskem letu 2020/21

University / Univerza	Faculty / Fakulteta	Employee / Zaposleni	Academic rank / Akademski naziv	Course(s) / Ime predmetov
University of Primorska	Faculty of Mathematics, Natural Sciences and Information Technologies	Miklós Krész	Associate professor	Data Science Seminar; Selected Topics in Theoretical Computer Science; Mining Massive Data; Design and Analysis of Experiments; Renewable Materials and Healthy Built Environments
		Aleksandar Tošić	Teaching	Programming 1 and 3
		Igor Gavrić	Assistant professor	Wood Design and Structural Analysis
		Iztok Šušteršič	Assistant professor	Wood Design and Structural Analysis; Renewable Materials for Healthy Built Environments; Preparation of doctoral disposition - seminar; The built environment and role of engineering; Holistic design of contemporary timber buildings
		Dean Lipovac	Assistant	Qualitative Research
		Matthew Schwarzkopf	Associate professor	Wood Science and Technology; Wood Composites; Selected topics in wood science and technology; Selected topics in the characterisation of renewable materials; Sustainable built environments study programme coordinator
		Michael Mrissa	Full professor	Data Engineering and Distributed Information Systems
		Balázs Dávid	Assistant	Formal Languages and Computability; Mining Massive Data
		László Hajdu	Assistant	Programming 2
		Diego De Leo	Full professor	Selected Biopsychological Topics in English
		Ana Slavec	Assistant with PhD	Statistics

Poučevanje

V študijskem letu 2020/21 je bilo 31 zaposlenih v InnoRenew CoE vključenih v pedagoško delo na šestih fakultetah pri predmetih s področij lesarstva, računalništva, obnovljivih materialov, trajnostnosti, raziskovalnega in znanstvenega pisanja, kineziologije, ergonomije in podatkovne znanosti.

University / Univerza	Faculty / Fakulteta	Employee / Zaposleni	Academic rank / Akademski naziv	Course(s) / Ime predmetov
University of Primorska	Faculty of Mathematics, Natural Sciences and Information Technologies	Andreja Kutnar	Full professor	Wood science and technology; Sustainable and restorative environments; Modern history of sustainable architecture; Forest management and wood processing; Renewable resources; Environmental technologies; Preparation of doctoral disposition - seminar
		David B. DeVallance	Associate professor	Renewable Materials for Healthy Built Environments; Wood Composites; Forest Products Marketing; Building Energy Simulation
		Jakub Sandak	Associate professor	Renewable Materials for Healthy Built Environments; Non-destructive testing of wood
		Anna Sandak	Associate professor	Renewable Materials for Healthy Built Environments; Non-destructive testing of wood; lectures related to spectroscopy; Energy refurbishment of buildings
		Veerapandian Ponnuchamy	Researcher	Renewable Materials for Healthy Built Environments; Preparation of the doctoral disposition
		Oihana Gordobil	Associate researcher	Renewable Materials for Healthy Built Environments; Preparation of the doctoral disposition
		René Herrera Díaz	Researcher	Renewable Materials for Healthy Built Environments; Preparation of the doctoral disposition
		Jaka Pečnik	Lab assistant	Renewable and Wood-based Materials in Construction
		Niki Hrovatin	Assistant	Computer practicum, Programming 1
		Sidra Aslam	Assistant	Data Engineering and Distributed Information Systems
		Laetitia Marrot	Assistant with PhD	Plant fibres for composite applications
		Rok Prislan	Assistant professor	Physics

University of Primorska

Faculty of Health Sciences

University / Univerza	Faculty / Fakulteta	Employee / Zaposleni	Academic rank / Akademski naziv	Course(s) / Ime predmetov
		Nastja Podrekar	Assistant	Research and innovation; Ergonomics; Cardio-respiratory physiotherapy
		Darjan Smajla	Assistant professor	Exercise therapy, Kinesiometrics, Applied Biomechanics, Prevention and Rehabilitation of lower limb injuries
		Nejc Šarabon	Full professor	Kinesiometrics; Gymnastics; Prevention and rehabilitation of upper limb in sport; Basics of exercise physiology; Exercise therapy; Applied biomechanics; Innovation and development; Endurance training; Individual Research Work; Modern Perspectives in the Applied Kinesiology; Project Research Work; Interdisciplinary aspects of prevention in health; Development of inovative products based on kinesiology science; Research of sedentary behavior and physical inactivity; Design of evidence-based injury prevention programs in sport
		Jure Žitnik	Assistant	Basics of exercise physiology; Exercise physiology; Environmental Physiology; Exercise for chronic non-communicable diseases - internistic aspect; Methodology in research; Introduction to research; Research methods
		Kaja Kastelic	External collaborator	Physical activity for health, Ergonomics

University / Univerza	Faculty / Fakulteta	Employee / Zaposleni	Academic rank / Akademski naziv	Course(s) / Ime predmetov
Gdańsk University of Technology	Faculty of Mechanical Engineering	Jakub Sandak	Visiting professor	Non-destructive testing of wood
Mendel University in Brno	Faculty of Forestry and Wood Technology	Václav Sebera	Research assistant	Physical and Mechanical Properties of Wood; Introduction to Image Processing Design of Constructions Using Finite Element Method Mechanics of Composites (PhD course)
Czech Technical University in Prague	Faculty of Electrical Engineering	Jan Včelák	Assistant professor	Technologies for SmartCities; Data Acquisition and Transfer
Jagiellonian University in Krakow	Faculty of Chemistry	Anna Sandak	Associate professor	Wood and derived products – selected topics in modification, performance and characterisation

InnoRenew CoE hosted 28 international visitors in 2021. Eighteen visits were for five days or less, and ten visits were for a longer period. International visitors came from fourteen countries, including Austria, the Czech Republic, Estonia, France, Finland, Germany, Hungary, Lithuania, Montenegro, Poland, Sweden, Slovakia, Switzerland and the United States.

InnoRenew CoE international visitors in 2021 (1-5 days) / Obiskovalci InnoRenew CoE iz tujine (1–5 dni) v letu 2021

	Guest / Gost	Affiliation / Organizacija	Country / Država	Period / Čas obiska
1	Tobias Stern	University of Graz	Austria	08.07.2021-09.07.2021
2	Rapahela Hellmayr	University of Natural Resources and Life Sciences (BOKU)	Austria	03.08.2021
3	Oleksandr Prystopiuk	Department of Experimental Physics, Comenius University in Bratislava	Slovakia	12.08.2021-14.08.2021
4	Wolfgang Kantner	Metadynea	Austria	30.08.2021-01.09.2021
5	Felix Drexler	Metadynea	Austria	30.08.2021-01.09.2021
6	Christoph Gabler	Metadynea	Austria	30.08.2021-01.09.2021
7	Mariapaola Riggio	Oregon State University	United States	30.08.2021-03.09.2021
8	Peter Niemz	University of Applied Science Biel	Switzerland	30.08.2021-03.09.2021
9	Peter Hajek	Czech Technical University in Prague	Czech Republic	31.08.2021-03.09.2021
10	Milan Vatovec	Simpson Gumpertz & Heger, Inc.	United States	31.08.2021-03.09.2021
11	Laura Alakukku	University of Helsinki	Finland	09.09.2021-10.09.2021
12	Bohumil Kasal	Fraunhofer WKI	Germany	20.09.2021-24.09.2021
13	Kazimierz Orłowski	Gdańsk University of Technology	Poland	10.10.2021-14.10.2021
14	Jaan Kers	Tallinn University of Technology	Estonia	15.11.2021-17.11.2021
15	Percy Alao	Tallinn University of Technology	Estonia	15.11.2021-17.11.2021
16	Heikko Kallakas	Tallinn University of Technology	Estonia	15.11.2021-17.11.2021
17	Tiit Lukk	Tallinn University of Technology	Estonia	15.11.2021-17.11.2021
18	Maria Kulp	Tallinn University of Technology	Estonia	15.11.2021-17.11.2021

InnoRenew CoE je v letu 2021 gostil 28 obiskovalcev iz tujine. Od tega je bilo 18 obiskov krajših, 10 pa daljših od šest dni. Tuji obiskovalci so prišli iz 14 različnih držav – iz Avstrije, Češke, Črne gore, Estonije, Francije, Finske, Litve, Madžarske, Nemčije, Poljske, Slovaške, Švice, Švedske in ZDA.

InnoRenew CoE international visitors in 2021 (6+ days) / Obiskovalci InnoRenew CoE iz tujine (več kot 6 dni) v letu 2021

	Guest / Gost	Affiliation / Organizacija	Country / Država	Period / Čas obiska
1	Viktor Bukovszki	ABUD company	Hungary	01.05.2021-31.05.2021
2	Morandise Rubini	University of Pau and the Adour Region	France	17.05.2021-17.08.2021
3	Vit Janovsky	University Centre for Energy Efficient Buildings	Czech Republic	01.06.2021-30.09.2021
4	Elsa Duret	Institute of Analytical Sciences and Physico-Chemistry for Environment and Materials (IPREM) at the University of Pau and Pays de l'Adour (UPPA)	France	14.08.2021-28.08.2021
5	Eduardo Robles Barrios	Institute of Analytical Sciences and Physico-Chemistry for Environment and Materials (IPREM) at the University of Pau and Pays de l'Adour (UPPA)	France	14.08.2021-28.08.2021
6	Radenka Krsmanović Whiffen	University of Donja Gorica	Montenegro	18.08.2021-25.08.2021
7	Dick Sandberg	Luleå University of Technology	Sweden	23.08.2021-31.08.2021
8	Duncan Mayes	Lignutech Oy	Finland	31.08.2021-08.09.2021
9	Ritva Toivonen	University of Helsinki	Finland	31.08.2021-10.09.2021
10	Gediminas Skarbalius	Lithuanian Energy Institute	Lithuania	17.10.2021-31.10.2021

InnoRenew CoE's actions towards environmental, economic and social impacts

Sustainability is at the core of InnoRenew CoE's values, principles and activities. The institute works on research and innovation in the field of renewable materials and healthy built environments; therefore, sustainability and related topics are of great importance and InnoRenew CoE's researchers strive to make an impact environmentally, socially and economically.

Environment

In 2021, InnoRenew CoE continued its work on 36 research projects that contribute to sustainable development and the circular economy (see the table of projects on page 42). For example, the "Reverse logistics network of residual wood biomass" project investigates the optimization of supply chains considering environmental impact and energy cost with special attention to the field of reverse logistics, where raw materials can partly come from recycled sources instead of being used as energy resources. Also, the "Wood and wood products over a lifetime" (WOOLF) project explores the development of wooden structural and window systems to enable the construction of multistory modular wooden buildings.

InnoRenew CoE researchers published 319 scientific papers related to the topic of sustainability. The full list of publications can be found on page 132.

Further activities aimed at protecting the environment included:

- Collaboration with the Municipality of Izola, Slovenia Forest Service, Komunala Izola as well as Slovenia's Ministry of Agriculture, Forestry and Food and Ministry of Education, Science and Sport to finish planting 3,000 oak trees in Izola to contribute to the environmental protection and mitigation of climate change for society's sustainable development. The 3,000 oak trees will grow 1450 cubic meters of wood in 200 years, storing 2647 tons of carbon dioxide.

Aktivnosti InnoRenew CoE, ki vplivajo na okolje, družbo in gospodarstvo

Trajnostnost je ena ključnih vrednot, načel in aktivnosti inštituta. InnoRenew CoE se ukvarja z raziskavami in inovacijami na področju obnovljivih materialov in zdravega grajenega okolja in prav zato so teme, povezane s trajnostnostjo, za inštitut zelo pomembne. Z aktivnostmi v inštitutu si zaposleni prizadevajo pozitivno vplivati na vse vidike trajnostnosti: okoljski, družbeni in ekonomski.

Okoljski vidik

V letu 2021 je raziskovalni inštitut InnoRenew CoE nadaljeval z delom na 36 raziskovalnih projektih, ki prispevajo k trajnostnem razvoju in krožnem gospodarstvu (glej preglednico projektov na strani 42). Med temi je na primer projekt »Povratna logistika biomase lesnih ostankov« s poudarkom na okoljskih vplivih in stroških energije. Posebna pozornost je namenjena področju obratne logistike, kjer surovine za proizvodnjo deloma pridobimo s pomočjo recikliranja. Ali pa projekt »Les in leseni izdelki v življenjski dobi (WOOLF)«, kjer razvijajo lesene konstrukcije in okenske sisteme, ki omogočajo gradnjo večnadstropnih modularnih lesenih objektov.

Raziskovalci v InnoRenew CoE so objavili 319 znanstvenih člankov na temo trajnosti. Celoten seznam objav je na strani 132.

Ostale aktivnosti, s katerimi v InnoRenew CoE prispevajo k varovanju okolja so:

- Sodelovanje z Občino Izola, Zavodom za gozdove Slovenije, javnim podjetjem Komunala Izola, Ministrstvom za kmetijstvo, gozdarstvo in prehrano in Ministrstvom za izobraževanje, znanost in šport za zaključek sajenja 3000 hrastovih dreves v Izoli. S tem je inštitut prispeval k varovanju okolja in blažitvi podnebnih sprememb za trajnostni razvoj družbe. S sajenjem 3000 hrastov bo v 200 letih zraslo 1450 kubičnih metrov lesa in shranilo 2647 ton ogljikovega dioksida.



Planting 3,000 oak trees in Izola /
Sajenje 3000 hrastovih dreves v Izoli

- Construction of the new InnoRenew CoE building, the largest wooden building in Slovenia, built from natural, renewable materials and designed based on sustainable building principles and restorative environmental and ergonomic design (REED), which emphasizes the use of natural materials to create ergonomic, accessible, adaptable and sustainable buildings.



InnoRenew CoE building /
Stavba InnoRenew CoE

- Zaključek gradnje nove stavbe InnoRenew CoE, ki je tudi največja lesena stavba v Sloveniji. Zgrajena je iz naravnih in obnovljivih materialov, zasnovana pa je bila na načelih sodobne trajnostne gradnje in restorativnega okoljskega in ergonomskega oblikovanje (REED), ki temelji na uporabi naravnih virov in ustvarjanju ergonomsko oblikovane, dostopne, prilagodljive in trajnostne gradnje.

InnoRenew CoE's 2021 activities ensured that social sustainability was not neglected:

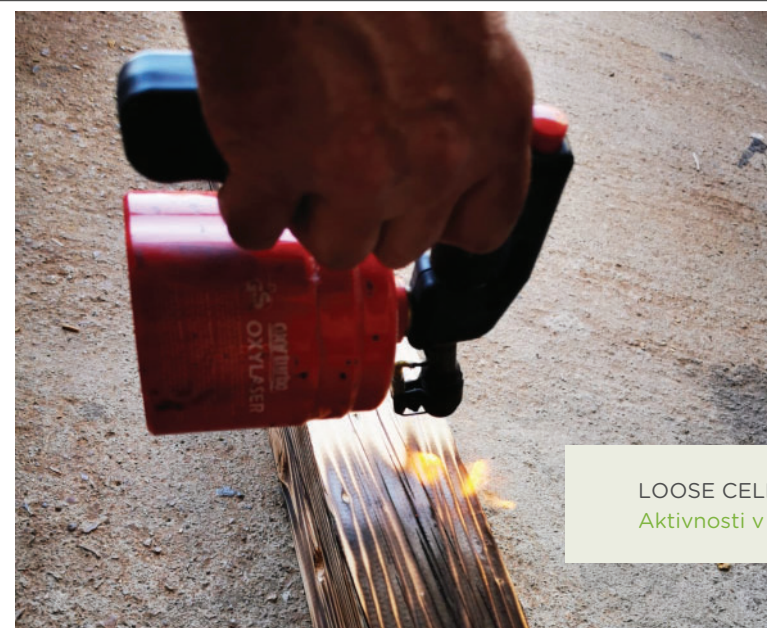
- Completed and adopted InnoRenew CoE's Gender Equality Plan and further integrated the gender dimension into the institute's research.
- Evaluated for Slovenia's 2021 Business Excellence Award; recognized by EFQM with four stars (EFQM++++ certificate).
- Promoted wood with the "Let's explore wood" youth workshops and collaborated on a documentary about woodworking professions geared to a young audience.
- Developed solutions for the elderly; for example, Pharaon project activities and smart solutions like the smart floor system.
- Promoted a healthy and safe working environment with dedicated internal regulations and organized meetings and discussions about healthier lifestyles for employees.
- Offered possibilities for employees to attend professional trainings and workshops to assist their professional and personal development (see tables on page 92).
- Organized weekly meetings to share the institute's activities, research projects and special topics.
- Used and promoted the use of online channels for internal communication between all employees and encouraged their social interactions.

V letu 2021 so zaposleni z aktivnostmi inštituta prispevali tudi za razvoj družbenega vidika trajnosti:

- Zasnova in sprejem načrta za enakost spolov in dodatno vključevanje razsežnosti spola v raziskave inštituta.
- Ocenjevanje za pridobivanje priznanja Republike Slovenije za poslovno odličnost za leto 2021 in pridobitev certifikata s štirimi zvezdicami (EFQM++++).
- Promoviranje lesa in poklicev, povezanih z lesarstvom za mlajše, z dejavnostmi kot so delavnice Let's explore wood in sodelovanje pri pripravi dokumentarnih filmov s to tematiko.
- Razvoj bivanjskih rešitev za starejše, kot so na primer pametna tla ali aktivnosti projekta Pharaon.
- Promoviranje zdravega in varnega delovnega okolja, s posebnimi internimi pravilniki in z organiziranimi razpravami, posvečenimi zdravemu načinu življenja zaposlenih.
- Omogočanje udeležbe zaposlenih na izobraževanjih in delavnicah, za njihov strokovni in osebni razvoj (glej stran 92).
- Organiziranje tedenskih sestankov za obveščanje in razpravo o najnovejših dejavnostih inštituta, raziskovalnih projektih ali drugih temah.
- Uporaba in spodbujanje uporabe spletnih orodij za interno komunikacijo med vsemi zaposlenimi in s tem spodbujanje tudi njihovega družbenega in družabnega življenja.



Charm of Wood roundtable discussion /
Okrogla miza v okviru Čara lesa



LOOSE CELLS project activities /
Aktivnosti v projektu Proste celice

- Attended events, such as Charm of Wood and Slovenian Wood Days, to engage in broader discussions and connect with stakeholders.
- Maintained memberships in organizations and associations that contribute to sustainable development (see tables on page 111).
- Promoted and engaged the public in topics related to sustainability and created awareness and calls for action with the institute's presence in the media and social media (see graphic on page 91).
- Collaborated with the local community; for example developed a solution for the protection of bronze monuments, assisted in the renovation of Koper's Servite monastery and created the LOOSE CELLS - Innovating at the Crossfield of Art and Science project.
- Collaborated with policymakers; for example, prepared the "Fit for 55" strategy, a green public procurement, implementation plan for the Slovenian industrial strategy, became a New European Bauhaus partner and developed industry and policy guidance on supporting the role of the forest sector in the circular bioeconomy (WoodCircus project).

- Udeležba na dogodkih kot je Čar lesa ali Dnevi slovenskega lesarstva in vključevanje v širše družbene razprave z deležniki.
- Članstvo v organizacijah, ki prispevajo k trajnostnem razvoju (glej stran 111).
- Promoviranje in vključevanje javnosti v teme povezane s trajnostnostjo ter osveščanje in pozivanje k ukrepanju s prisotnostjo v medijih in na družbenih omrežjih (glej stran 91).
- Sodelovanje z lokalno skupnostjo in družbo, kot na primer razvijanje rešitve za zaščito bronastih spomenikov, ali obnova Servitskega samostana v Kopru ter ustvarjanje novih projektov, kot so Proste celice – Inoviranje v polju med umetnostjo in znanostjo.
- Sodelovanje z oblikovalci politik, na primer pri pripravi strategije Pripravljeni na 55 (Fit for 55), uredbe o zelenem javnem naročanju ali izvedbenem načrtu za slovensko industrijsko strategijo, partnerstvo v Novem evropskem Bauhausu in sodelovanje pri razvoju smernic za podporo vlogi lesarstva v krožni bioekonomiji za industrijo in odločevalce (projekt WoodCircus).

Economic

InnoRenew CoE works on research and development projects with industry through publicly financed projects and direct collaborations. The institute's 116 industrial partners in 2021 created new knowledge in the fields of wood modification, acoustics, environmental impacts and civil engineering. Researchers also trained companies within the framework of the KOCles 3.0 project.

Impacts from InnoRenew CoE's 2021 activities will be indicated in upcoming yearly reports.

Ekonomski vidik

InnoRenew CoE sodeluje z industrijo pri raziskovalnih in razvojnih projektih preko javno financiranih projektov in neposrednih sodelovanj. V letu 2021 so sodelovali z 116 industrijskimi partnerji, kar je prineslo nova znanja s področja modifikacije lesa, akustike, vplivov na okolje in gradbeništva. V okviru projekta KOCles 3.0 so raziskovalci inštituta izobraževali in usposabljali zaposlene iz številnih slovenskih podjetij, ki se pretežno ukvarjajo s predelavo lesa v najrazličnejše polizdelke in končne izdelke.

Učinki opisanih dejavnosti InnoRenew CoE v letu 2021 bodo navedene v prihodnjih letnih poročilih.

InnoRenew CoE employees publish with open access and make their publications available through the institute's Zenodo community.

In 2021, InnoRenew CoE researchers contributed to 319 scientific communications: 204 articles, 112 of which were original scientific articles, an increase of 22 from 2020; 11 review articles; four short scientific contributions; ten professional articles; one popular article; 66 conference contributions; 31 monographs, scientific or professional monograph chapters, front and back matter, master's and undergraduate theses and patent applications and patents; 38 public communications, including radio and television programs, invited lectures and unpublished conference contributions; and 46 secondary authorships, including as journal editors and thesis mentors.

InnoRenew CoE employee publications were cited (pure citations) 7714 times in Web of Science (6665 in 2020) and 10985 times in Scopus (4002 in 2020) last year.

Original scientific article / Izvirni znanstveni članek

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Zaposleni v InnoRenew CoE prispevke objavljajo v odprtem dostopu, shranjeni (in dostopni) pa so v spletni skupnosti inštituta v repozitoriju Zenodo.

Raziskovalci InnoRenew CoE so v letu 2021 prispevali 319 enot s področja znanstvenega komuniciranja. Te vključujejo: 204 člankov in drugih prispevkov, od tega 112 izvirnih znanstvenih člankov, kar je 22 več kot leta 2020; 11 preglednih znanstvenih člankov; štiri kratke znanstvene prispevke; deset strokovnih člankov; en poljudni članek in 66 konferenčnih prispevkov; 31 monografij, znanstvenih ali strokovnih sestavkov v monografijah, spremne besede in druga dela, kot so dodiplomska in magistrska dela, prijave patentov, patenti itd.; 38 radijskih in televizijskih nastopov, vabljenih predavanj in neobjavljenih konferenčnih prispevkov ter vabljenih konferenčnih predavanj; poleg tega pa še 46 del s sekundarnim avtorstvom (revijalni urednik, mentor pri zaključnih nalogah).

V letu 2021 so bile publikacije zaposlenih v InnoRenew CoE citirane (čisti citati) 7714-krat v Web of Science (leta 2020 pa 6665-krat) in 10985-krat (leta 2020 pa 4002-krat) v Scopusu.

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Revenue

InnoRenew CoE revenues totaled €3,913,201 in 2021. Of this, 45.21 percent was from the European Union's (EU) Horizon 2020 Framework Programme (H2020 Widespread-2-Teaming; #739574), 23.75 percent was from the Republic of Slovenia (investment funding from the Republic of Slovenia and the EU's European Regional Development Fund), 10.02 percent was from EU projects, 2.64 percent was from international projects, 11.39 percent was earned from market services, 0.53 percent was from international traveling grants (COST Actions), 0.43 percent was from national projects, 5.70 percent was funded by the Slovenian Research Agency (ARRS), 0.08 percent was from Living Lab InnoRenew activities and 0.25 percent was from other sources.

Investment into infrastructure was €9,437,171.

Prihodki

V letu 2021 je imel InnoRenew CoE 3.913.201 evrov prihodkov. Od tega je 45,21 odstotka prihodkov od okvirnega programa Evropske Unije Obzorje 2020 (H2020WIDESPREAD-2-Teaming; #739574), 23,75 odstotka od Republike Slovenije (Financiranje naložb Republike Slovenije in Evropske unije v okviru Evropskega sklada za regionalni razvoj), 10,02 odstotka od pridobljenih evropskih projektov, 2,64 odstotka od drugih mednarodnih projektov, 11,39 odstotka od izvajanja storitev na trgu, 0,53 odstotka od akcij COST, 0,43 odstotka od nacionalnih projektov, 5,70 odstotka od projektov ARRS, 0,08 odstotka od dejavnosti Živega laboratorija in 0,25 odstotka drugih prihodkov.

Za investicijo v infrastrukturo je InnoRenew CoE leta 2021 namenil 9.437.171 evrov.

Name / Naziv:

InnoRenew CoE Renewable Materials and Healthy Environments Research and Innovation Centre of Excellence

InnoRenew CoE Center odličnosti za raziskave in inovacije na področju obnovljivih materialov in zdravega bivanjskega okolja

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Regional Development Agency of the Ljubljana Urban Region (RRA LUR)
Pulp and Paper Institute (ICP)
Slovenian National Building and Civil Engineering Institute (ZAG)
Institute for the Protection of Cultural Heritage of Slovenia (ZVKDS)
National Institute of Public Health (NIJZ)
Zavod eOblak
University of Primorska (UP)
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InnoRenew CoE je zgrajen na podlagi trdnega sodelovanja med ustanovnimi partnerji in podpore projektnih partnerjev.

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Inštitut Fraunhofer Wilhelm-Klauditz (Fraunhofer WKI)
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