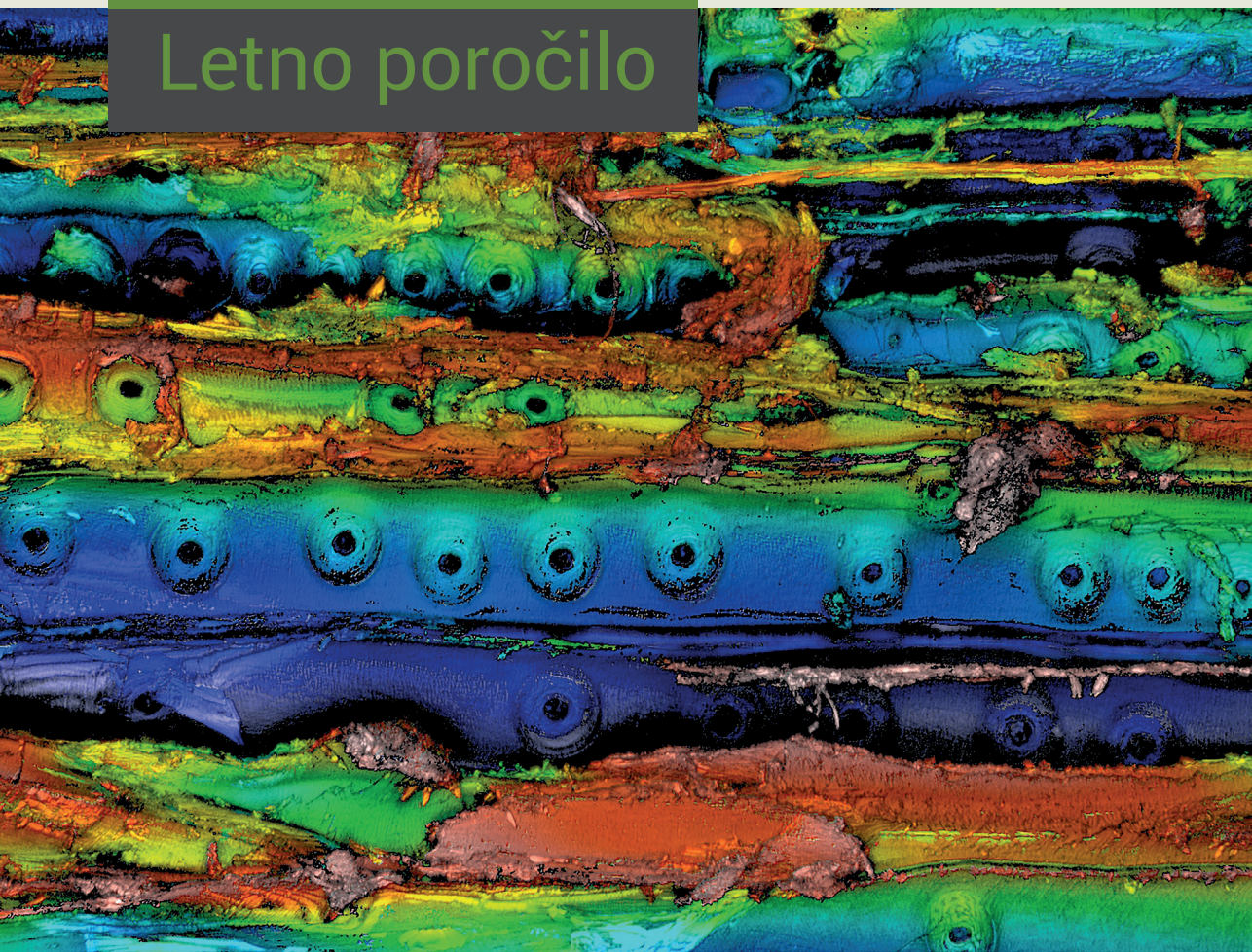


Annual Report

Letno poročilo



2020



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

2020



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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EVROPSKA UNIJA
EVROPSKI SKLAD ZA
REGIONALNI RAZVOJ

Cover photo / Naslovna fotografija
Faksawat Poohphajai, Anna Sandak, Jakub Sandak:
A microscopic image of pine sapwood roughness
Mikroskopski posnetek hrapavosti beljave borovine

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What a year! It has certainly been one we will all remember. Although it was challenging, InnoRenew CoE's team turned it into a success!

This report summarizes our activities, results and impacts. When I considered what to highlight in this foreword, a friend's words came to my mind. After reading our 2019 annual report, he said: "You are doing so much, you should make a sustainability report."

We didn't focus on a structured sustainability report for 2020, but we still contributed considerably to the UN's Sustainable Development Goals. As we fight climate change, use of renewable materials in the built environment is more important than ever. This means construction of InnoRenew CoE's new home should be emphasized as a major activity in 2020.

As the whole world faced challenges and was left wondering how the pandemic will influence the economy and society, InnoRenew CoE teamed up with construction companies VG5 d.o.o. and Marles Hiše Maribor d.o.o., along with auditor Projekt Nova Gorica d.d. and suprauditor Poplus d.o.o., to begin construction on Slovenia's largest wooden building. There is much more than anticipation of our new home that makes me pleased and thankful. It is also the pending fulfillment of our belief and vision that the built environment should follow restorative environmental and ergonomic design principles in order to create well-being, tackle climate change and make buildings better for the people who use them.

Design and construction of InnoRenew CoE's building was integrated into our research activities. We have made a life cycle assessment of the building and communicated its findings to scientific audiences and the general public. We have committed to monitor the construction of our building and document and share the knowledge gained to demonstrate the performance and comfort of wooden buildings.

Having done a life cycle assessment, and to stand by our commitment to offset the carbon footprint of our building, we will plant 3,000 oak trees in and around Izola, Slovenia. Our building isn't constructed with oak, but Istrian oak was the main building material during Venetian times and is now all too rare in local forests. We want to remind society of the oak tree's cultural importance and that Slovenian Istria is – and has been – an important economic partner in the European economy. We hope this action will pique the public and industry's interest in order to help the continued growth of our relationship with these regional partners.

There were so many other successes that deserve to be highlighted this year. However, I know that you will recognize the dedication, talent and spirit of InnoRenew CoE's team as you read through this report. I will end by simply saying this: Our InnoRenew CoE team has proven that nothing can stop us!

Kakšno leto! Zagotovo si ga bomo vsi zapomnili. A čeprav je bilo zahtevno, se je za InnoRenew CoE uspešno izteklo – po zaslugi naše ekipe!

Letno poročilo prinaša povzetke naših aktivnosti, rezultatov in učinkov. Ko sem razmišljala, kaj poudariti v uvodnem besedilu, so mi prišle na misel besede mojega prijatelja. Potem ko je prebral naše lansko poročilo, mi je rekel: »Toliko delate, da bi lahko pripravili tudi posebno poročilo o trajnostnosti.«

Posebna poročila o trajnostnosti za leto 2020 sicer nismo pripravili, smo pa k ciljem trajnostnega razvoja vseeno veliko prispevali. Ker se borimo proti podnebnim spremembam, je uporaba obnovljivih materialov v grajenem okolju postala pomembnejša kot kdaj koli prej. Gradnjo novega doma InnoRenew CoE bi zato morali postaviti na prvo mesto med našimi dejavnostmi v letu 2020.

Ko se je ves svet soočal z izzivi in se spraševal, kako bo pandemija vplivala na gospodarstvo in družbo, se je InnoRenew CoE povezal z gradbenima podjetjema VG5 in Marles hiše Maribor ter s podjetjema Projekt Nova Gorica in Proplus za izvajanje nadzora oziroma supernadzora ter začel gradnjo največje lesene stavbe v Sloveniji. Pri tem nisem zadovoljna in hvaležna le zato, ker se načrti o našem novem domu uresničujejo. To je namreč tudi izpolnitev našega prepričanja in vizije, da mora grajeno okolje slediti restoriativnim okoljskim in ergonomskim načelom oblikovanja, da bi lahko omogočili dobro počutje, se spopadli s podnebnimi spremembami in izboljšali stavbe za ljudi, ki jih uporabljajo.

Oblikovanje in gradnja stavbe InnoRenew CoE sta bila integralni del naše raziskovalne dejavnosti. Naredili smo oceno življenjskega cikla stavbe in jo predstavili znanstveni in širši javnosti. Posvetili smo se monitoringu konstrukcije naše stavbe ter dokumentiranju in izmenjevanju pridobljenega znanja, da bi pojasnili učinkovitost in udobje lesenih stavb.

Ker smo naredili oceno življenjskega cikla in hočemo izpolniti zavezo za izravnavo ogljičnega odtisa stavbe, bomo v Izoli in okolici posadili 3000 istrskih hrastov. Naša stavba sicer ni zgrajena iz hrasta, toda istrski hrast je bil glavni gradbeni material v beneških časih, zdaj pa je ta drevesna vrsta v tukajšnjih gozdovih preredka. Družbo bi s tem radi spomnili na kulturni pomen hrasta in na to, da je danes – in da je bila nekoč – slovenska Istra pomemben gospodarski partner evropskega gospodarstva. Upamo, da bo ta akcija vzbudila zanimanje javnosti in industrije in prispevala h krepitvi naših odnosov z okoljskim prebivalstvom in gospodarstvom.

Številni drugi letošnji uspehi bi si prav tako zaslužili, da jih osvetlim. Vendar vem, da boste med branjem tega poročila prepoznali predanost, talent in duh naše celotne ekipe. Za konec naj preprosto rečem: ekipa InnoRenew CoE je dokazala, da nas nič ne more ustaviti!

Dr. Andreja Kutnar



Reflecting on 2020 has been challenging – much like the course of the year itself. It's hard to think of this year in any way without some connection to the COVID-19 pandemic, and perhaps we shouldn't try. The pandemic has affected so many people in so many different ways. At InnoRenew CoE, we felt the impact directly as some of our team members were afflicted or supported family members who were. We were fortunate, and everyone recovered. Our hearts break for the loss others have experienced, and I'm quite sure we don't yet grasp the pandemic's full effect. Nonetheless, our team accomplished a lot in 2020.

We completed more project work, published more papers, innovated our communications, updated our ICT systems, and added talented new members to our team. Those accomplishments, in light of the

pandemic, are astonishing. We had limited access to lab equipment, partner visits, and,

perhaps our most valuable asset, each other. The capacity for our team to contribute to the success of the institute during this period should not be undervalued. Regardless of any other measurable variable, simply continuing through such a challenging year is a success in and of itself.

Our capacity to continue was visible in many ways, most notably in the support shown for each other. Our InnoRenew CoE colleagues created new venues for sharing their experiences and discussing how the pandemic was affecting them; how they were responding to it; and generally trying to find the bright spots. We saw this through internal communications where our team shared photographs of private outdoor adventures and their "new" offices, news stories, and reactions. Some of those stories were gathered, refined, and shared outside the institute as well. We shared these experiences, I think, in order to support others, provide solidarity within our community, and help each other out in some small way.

No matter how we measure success this year, I know our accomplishments are valuable – to science, to our community, to ourselves. Everyone at InnoRenew CoE has much to be proud of, including their own perseverance and adaptability. That our team managed to accomplish so much in conventional outputs shows that not only did we manage to adapt to the pandemic but also found new ways to collaborate, support each other, and grow together.

While writing this, I have realized that it is our growth as a team that is perhaps the best indicator to assess InnoRenew CoE's success this year. But I don't know how to measure it; I only know that I see it in greater terms than publications, proposals, and events, and I'm immeasurably proud of the people who have contributed to it in so many different ways.

Premišljevanje o letu 2020 je pravi izziv – kot je bilo ne nazadnje leto samo. Teško je nanj pomisliti, ne da bi ga tako ali drugače povezali s pandemijo covid-19, in morda je tako tudi prav. Pandemija je vplivala na veliko ljudi, in to na različne načine. V InnoRenew CoE smo njene posledice občutili neposredno, saj so nekateri zaposleni ali njihovi družinski člani zboleli. Na srečo so vsi uspešno okrevali. Hudo nam je zaradi izgub, ki so jih doživeli drugi ljudje, in prepričan sem, da učinka pandemije še ne dojemamo v celoti.

Kljub vsemu pa je naša ekipa leta 2020 veliko dosegla. Dokončali smo več projektov, objavili več člankov, prenovili način komuniciranja, posodobili IKT-sistem in pridobili nove talente v naši ekipi. V luči pandemije so ti dosežki kar presenetljivi. Imeli smo omejen dostop do laboratorijske opreme, do obiskov naših partnerjev in do tistih, ki so morda še najbolj dragoceni, naših sodelavcev. Ne gre torej podcenjevati sposobnosti naše ekipe, ki je v tem obdobju prispevala k uspehu inštituta. Ne glede na katero koli drugo merljivo spremenljivko je že to, da gremo naprej, v tako zahtevnem letu samo po sebi uspeh.

Naša sposobnost take vztrajnosti je vidna na najrazličnejše načine, predvsem pa v medsebojni podpori. Sodelavci v InnoRenew CoE so ustvarili nova mesta za izmenjevanje svojih izkušenj in razpravljanje o tem, kako pandemija vpliva nanje, kako se nanjo odzivajo, in pri tem večinoma poskušali najti svetle točke. To smo lahko opazili v interni komunikaciji, kjer so naši zaposleni delili fotografije zasebnih dogodivščin na prostem in svojih »novih« pisarn, nove zgodbe in odzive. Nekaj izmed teh zgodb smo tudi zbrali, preoblikovali in jih delili z ljudmi zunaj našega inštituta. Mislim, da smo te izkušnje delili, da bi se medsebojno podpirali, bili solidarni z našo skupnostjo in pomagali drug drugemu.

Ne glede na to, kako merimo uspeh v letošnjem letu, sem prepričan, da so naši dosežki dragoceni – za znanost, za našo skupnost in za nas same. Vsak posameznik iz InnoRenew CoE ima veliko razlogov za to, da je nase ponosen, vključno z lastno vztrajnostjo in prilagodljivostjo. Da je naši ekipi uspelo doseči tako veliko tudi po konvencionalnih merilih, kaže na to, da se nismo zgolj prilagodili pandemiji, ampak da smo našli tudi nove načine sodelovanja, medsebojne podpore in skupne rasti.

Medtem ko sem to pisal, sem ugotovil, da je verjetno prav rast naše ekipe najboljši pokazatelj letošnjega uspeha. Kako bi to izmerili, sicer ne vem – vem le, da je pomembnejše od objav, projektov in dogodkov, in neizmerno sem ponosen na ljudi, ki so k temu prispevali na toliko različnih načinov.

Dr. Michael Burnard

Vision, mission, values

Vision

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).

Values

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.

Vizija, poslanstvo in vrednote

Vizija

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 z gled 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).

Vrednote

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 trajnostnosti 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 formally established on 15 February 2017 in accordance with provisions of Article 2 of 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 organizational structure consists of the Assembly of Founders, Executive Board, Director and Council of Experts. Living Laboratory InnoRenew is included as 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 (Fraunhofer 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

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

Director

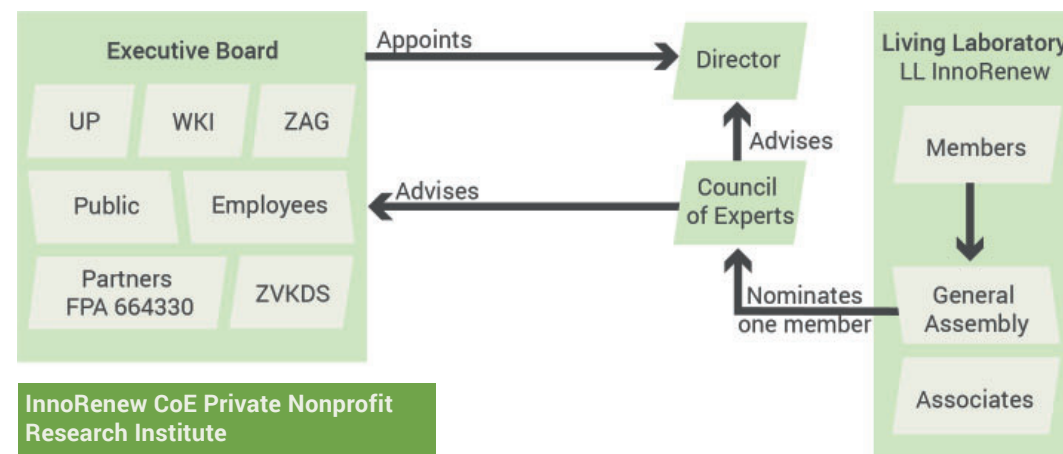
Prof. Andreja Kutnar, Ph.D.

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



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

Direktorica

Prof. dr. Andreja Kutnar

Namestnik direktorice

Doc. dr. Michael Burnard

Strokovni svet

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

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

Employees

In 2020, InnoRenew CoE's workforce grew by 16 with the addition of nine new scientists, six new support and business development positions and one new technician, which brought the total to 71 employees (54 scientists, 13 support and business development positions and four technicians).

InnoRenew CoE employees hail from 17 countries, including Belgium, Bosnia and Herzegovina, China, Croatia, the Czech Republic, Finland, France, Hungary, India, Italy, Norway, Pakistan, Poland, Spain, Sweden, Thailand and the United States. International employees make up 45 percent of the institute's total workforce.

In addition, 17 InnoRenew CoE employees are enrolled in doctoral programs. All are supported by the institute in their academic and early research careers.

Employees in 2020 Zaposleni v letu 2020

	Employee / Zaposleni	Position / Delovno mesto
BIH	Zijada Adembegović Hujdurović	Assistant researcher
PTA	Sidra Aslam	Assistant researcher
SLO	Alijana Batič	Project management - administrative support
SLO	Prof. Roberto Biloslavo, Ph.D.	Head of technology transfer unit
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 manager and language editor
SLO	Josip Dijanić	Technician
SLO	Mateja Erce	Assistant researcher
IND	Sudha Esakkimmuthu Esakkiammal, Ph.D.	Researcher
HUN	Fabian Gertrud	Information technology support
HUN	Edit Földvári-Nagy	Technician
ESP	Assist. Prof. Igor Gavrić, Ph.D.	Researcher
SLO	Oihana Goñi Gordobil, Ph.D.	Researcher
HUN	Rudi Grahek	Technician
CHN	László Hajdu	Assistant researcher
ESP	Lei Han	Assistant researcher
SLO	René Alexander Herrera Díaz, Ph.D.	Researcher
SLO	Niki Hrovatin	Assistant researcher

Zaposleni

V letu 2020 je InnoRenew CoE zaposlil 16 novih sodelavcev – devet na oddelku za raziskave, šest na oddelku za podporo in poslovni razvoj ter enega tehnika. Skupno število zaposlenih v letu 2020 je torej 71, od tega jih je 54 na oddelku za raziskave, 13 na oddelku za podporo in poslovni razvoj, štirje pa so tehniki.

V InnoRenew CoE je 45 odstotkov vseh zaposlenih tujcev, ki prihajajo iz 17 držav – Belgije, Bosne in Hercegovine, Češke, Finske, Francije, Hrvaške, Indije, Italije, Kitajske, Madžarske, Norveške, Pakistana, Poljske, Španije, Švedske, Tajske in ZDA.

V letu 2020 je bilo 17 zaposlenih v InnoRenew CoE vpisanih tudi na doktorski študij. Inštitut si namreč prizadeva podpirati svoje zaposlene na začetku njihovih akademskih in raziskovalnih poti.

Employee / Zaposleni	Position / Delovno mesto	
Miladin Jokić	Technician	SLO
Kaja Kastelic	Assistant researcher	SLO
David Kodarin	Assistant project manager	SLO
Barbara Kotrle	Administrative support	HUN
Assoc. Prof. Miklós Krész, Ph.D.	Research group leader - information and computer technologies	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	SLO
Nastja Podrekar	Assistant researcher	IND
Veerapandian Ponnuchamy, Ph.D.	Researcher	THA / SWE
Faksawat Poohphajai	Assistant researcher	SLO
Eva Prelovšek Niemelä	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
Assist. Prof. Anna Sandak, Ph.D.	Research group leader - wood modification	

	Employee / Zaposleni	Position / Delovno mesto
POL		
SLO	Assist. Prof. Jakub Sandak, Ph.D.	Researcher
NOR	Matic Sašek	Assistant researcher
USA	Erwin M. Schau, Ph.D.	Researcher
CZE	Assoc. Prof. Matthew Schwarzkopf, Ph.D.	Researcher
USA	Assist. Prof. Václav Sebera, Ph.D.	Researcher
SLO	Amy Simmons	Assistant researcher
SLO / HRV	Ana Slavec, Ph.D.	Researcher and consulting statistician
SLO	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
CZE	Domen Vake	Information technology support
SLO	Jan Včelák, Ph.D.	Researcher
SLO	Alenka Volk	Project manager
SLO	Jure Žitnik	Assistant researcher

Employees enrolled in doctoral programs
Zaposleni vključeni v doktorske študijske programe

Employee / Zaposleni	Faculty and university / Fakulteta in univerza	
Sidra Aslam	Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Computer Science)	1
Mateja Erce	Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Renewable Materials for Healthy Built Environments)	2
László Hajdu	University of Szeged, Institute of Informatics	3
Lei Han	Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Renewable Materials for Healthy Built Environments)	4
Niki Hrovatin	Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Computer Science)	5
Kaja Kastelic	Faculty of Health Sciences, University of Primorska (Applied Kinesiology)	6
Dean Lipovac	Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Renewable Materials for Healthy Built Environments)	7
Tim Mavrič	Faculty of Humanities, University of Primorska (Management of Cultural Assets and Archives)	8
Jaka Pečnik	Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Renewable Materials for Healthy Built Environments)	9
Nastja Podrekar	Faculty of Health Sciences, University of Primorska (Applied Kinesiology)	10
Faksawat Poohphajai	Chemical Engineering, Aalto University	11
Lea Primožič	Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Renewable Materials for Healthy Built Environments)	12
Nežka Sajinčič	Faculty of Education, University of Primorska (Educational Sciences)	13
Matic Sašek	Faculty of Health Sciences, University of Primorska (Prevention for Health)	14
Vesna Starman	Faculty of Education, University of Primorska (Educational Sciences)	15
Aleksandar Tošič	Faculty of Mathematics, Natural Sciences and Information Technologies, University of Primorska (Computer Science)	16
Jure Žitnik	Faculty of Health Sciences, University of Primorska (Applied Kinesiology)	17

Research

In 2020, InnoRenew CoE employed 54 researchers and assistant researchers, 46 of whom worked within one of the five research groups created upon the institute's 2017 establishment. The eight researchers and assistant researchers who worked outside of a group covered fields that included analytical chemistry, biotechnological wood modification, statistics, education, innovation management, international collaboration and science communication.

Each group covered its own range of fields and, at the same time, was interconnected across the institution. In several projects, researchers from different fields were involved. Groups have been upgraded over time by new projects and strengthened teams, such as visiting researchers that have joined as permanent members.

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.

Dr. Nejc Šarabon
Image: InnoRenew CoE

Raziskave

Inštitut trenutno zaposluje 54 raziskovalcev in raziskovalnih asistentov, od teh jih je 46 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. Tudi vsaka izmed skupin pokriva svoj krog področij, obenem pa se med seboj stikajo in prepletajo, zato pri nekaterih projektih hkrati sodeluje več raziskovalcev z različnih področij.

Ob ustanovitvi inštituta InnoRenew CoE leta 2017 je bilo zasnovanih pet raziskovalnih skupin, ki so se nadgrajevale tako s pridobivanjem novih projektov kot z okrepljenimi ekipami, pri čemer se stalnim članom pogosto pridružijo še gostujoči raziskovalci.

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.



Dr. Anna Sandak
Image: InnoRenew CoE

**Sustainable Building with Renewable Materials /
Trajnostna gradnja z obnovljivimi materiali**



Dr. Iztok Šušteršič
Image: InnoRenew CoE

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.

**Renewable Materials Composites /
Kompoziti iz obnovljivih materialov**



Dr. David B. DeVallance
Image: InnoRenew CoE

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.



Dr. Miklós Krész
Image: InnoRenew CoE

**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.

In 2020, InnoRenew CoE executed 35 projects (four under InnoRenew CoE's coordination), 24 of which were financed by the Slovenian Research Agency: seven basic projects, one postdoctoral project and 16 bilateral projects (four with the United States, two with Austria, two with Bosnia and Herzegovina, two with Norway, one with Denmark, one with Estonia, one with Finland, one with Italy, one with Lithuania and one with Turkey).

In addition, one project was financed by the European Union - 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; one project was funded by the European Union - European Social Fund with the Republic of Slovenia's Ministry of Education, Science and Sport and Public Scholarship, Development, Disability and Maintenance Fund of the Republic of Slovenia (completed in July 2020); one project was funded by the European Union - Horizon 2020, Marie Skłodowska-Curie Individual Fellowships; two projects were funded by the European Union - Erasmus+; two projects were funded by the European Union - ForestValue and three projects were funded by the European Union - Horizon 2020.

All projects acquired by InnoRenew CoE in 2020 are presented below, and the table that follows lists all continuing projects that were previously achieved.



Autonomic edge computing for air quality monitoring

Buildings with intelligent sensor systems that can report the performance status of their elements to optimize energy consumption and maintenance, as well as inform future building design, are important for reaching environmental, material, and energy impact reduction goals. Equipping buildings with wireless sensor networks (WSNs) contributes to these goals and improves the well-being of building users. A drastic evolution in embedded devices has driven researchers to reconsider the typical cloud-based approach and distribute data and processes (back) to the network – a concept called edge (or fog) computing. Edge computing provides optimized network usage, dynamic network configuration and data management; it also enables distributed on-site data processing, low latency response to network changes and independence from cloud providers. In this project, edge computing solutions will be explored that take advantage of a new generation of WSN devices, reducing the global environmental cost of such equipment.

InnoRenew CoE project activities: InnoRenew CoE will investigate ways to merge theoretical tools (graph and infection models), technologies (semantic web services, distributed ledger technology) and distributed data mining that may help to design and implement dynamic self-configuring networks. The work will be demonstrated with four pilots in Slovenia and abroad.

PROJECT LEADER:

Michael Mrissa, PhD

PERIOD:

01.09.2020 - 31.08.2023

FINANCING:

Slovenian Research Agency (ARRS)

COORDINATOR:

InnoRenew CoE (Slovenia)

PARTNERS:

UP FAMNIT (Slovenia); Institute for the Protection of Cultural Heritage of Slovenia (Slovenia)

V letu 2020 je InnoRenew CoE izvajal 35 projektov (štiri kot koordinator), od tega jih 24 financira Javna agencija za raziskovalno dejavnost RS (ARRS), in sicer sedem temeljnih projektov, en podoktorski projekt in 16 bilateralnih projektov (štiri z ZDA, po dva z Avstrijo, Bosno in Hercegovino ter Norveško in po enega z Italijo, Turčijo, Estonijo, Dansko, Litvo in Finsko).

Projekte InnoRenew CoE poleg tega financirajo: enega Evropski sklad za regionalni razvoj in Ministrstvo za izobraževanje, znanost in šport RS (MIZŠ), enega Ministrstvo za kmetijstvo, gozdarstvo in prehrano Republike Slovenije (MKGP), enega Evropska unija - Evropski socialni sklad (ESS), Ministrstvo za izobraževanje, znanost in šport RS ter Javni študentski, razvojni, invalidski in preživninski sklad RS (zaključil se je julija 2020), enega program Obzorje 2020 (Marie Skłodowska-Curie Individual Fellowships), dva program Erasmus+, dva program ForestValue in tri program Obzorje 2020.

V nadaljevanju so predstavljeni vsi projekti, pridobljeni v letu 2020, v tabeli pa še projekti, katerih aktivnosti so potekale tudi letos, a so bili pridobljeni v prejšnjih letih.

Avtonomno računalništvo na robu za spremljanje kakovosti zraka

Zgradbe, opremljene z brezžičnimi senzorski omrežji (Wireless Sensor Networks – WSN), ki lahko poročajo o statusu svojih elementov, da bi optimizirale porabo energije, počutje uporabnikov, vzdrževanje in prihodnje oblikovanje stavbe, prispevajo k dobremu počutju njenih uporabnikov, obenem pa tudi k zmanjševanju okoljskih, materialnih in energetskih vplivov stavb, kar je eden od ciljev trajnostnega razvoja. Naraščajoče vključevanje senzorjev v vgradne naprave je raziskovalce spodbudilo k novemu premisleku o tipičnih pristopih, ki temeljijo na oblračnih storitvah, in o distribuciji podatkov in procesov po omrežjih – konceptu, imenovanem računalništvo na robu (edge computing) ali računalništvo v megli (fog computing). Rešitve, ki jih omogoča računalništvo na robu, predstavljajo številne prednosti. Optimizirajo uporabo omrežja, omogočajo dinamično konfiguracijo omrežja in kratke odzivne čase omrežja v primeru sprememb, pospešujejo upravljanje podatkov, ponujajo možnost za porazdeljeno obdelavo podatkov na kraju samem in ohranjajo neodvisnost od ponudnikov oblakov. Pri tem projektu se raziskovalci posvečajo modelu računalništva na robu, da bi odkrili rešitve, ki izkoriščajo prednosti nove generacije naprav WSN, in zmanjšali globalne okoljske stroške take opreme.

Glavne dejavnosti InnoRenew CoE pri projektu: InnoRenew CoE bo proučil načine za združitev teoretičnih orodij (grafe in modele okužb), tehnologij (semantične spletne storitve, tehnologijo porazdeljenih knjig – DLT) in razdeljenega podatkovnega rudarjenja, ki lahko pomagajo pri načrtovanju in izvedbi dinamičnih samokonfiguracijskih omrežij.

VODJA PROJEKTA: dr. Michael Mrissa

TRAJANJE: 1. 9. 2020 – 31. 8. 2023

FINANCIRANJE: Javna agencija za raziskovalno dejavnost Republike Slovenije (ARRS)

KOORDINATOR PROJEKTA: InnoRenew CoE (Slovenija)

PARTNERJI: UP FAMNIT (Slovenija); Javni zavod Republike Slovenije za varstvo kulturne dediščine (Slovenija)



Optimization problems of the residual biomass value chain

Dealing with agricultural residues can present significant extra costs to farmers as these residues are usually processed on the field either by burning or mulching. Meanwhile, recent growth of the bio-based industrial sector can provide an alternative use for these materials. Development of an efficient supply chain would be beneficial for both farmers and industries. Basic research will be carried out looking into the value chain of residual biomass, and possible optimization questions will be studied and identified. Selected problems will be explored and modelled in more detail, and solution algorithms will be developed to solve them. Models and algorithms will not only consider basic theoretical aspects of the problems but also application-oriented characteristics that will be studied in more detail. Dealing with these characteristics is important as we intend these algorithms to be applicable in a real-life scenario.

InnoRenew CoE project activities: InnoRenew CoE will analyse the industrial problem and the selection of the problem set to be studied, will specify the basic model for the selected problem, and will develop the artificial instance sets for testing the solution methods.

PROJECT LEADER:

Jakub Michal Sandak, PhD

PERIOD:

01.01.2020 - 31.12.2021

FINANCING:

Slovenian Research Agency (ARRS)

PARTNERS:

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

Izzivi pri optimizaciji verige vrednosti ostankov biomas

Obnavljanje kmetijskih ostankov lahko kmetom prinese precejšnje dodatne stroške, saj jih običajno predelujejo na polju s sežiganjem ali mulčenjem. Industrijski sektor, ki temelji na biotskih virih, pa bi zaradi nedavne rasti lahko zagotovil alternativno uporabo teh materialov. Tako kmetom kot industriji bi lahko koristil razvoj učinkovite dobavne verige. Pri projektu bodo izvedene temeljne raziskave, v okviru katerih se bodo pregledale vrednostne verige ostankov biomas in proučila ter opredelila morebitna vprašanja optimizacije. Izbrani problemi bodo podrobneje raziskani in modelirani, razviti bodo tudi algoritmi za njihovo reševanje. Modeli in algoritmi ne bodo upoštevali le osnovnih teoretičnih vidikov problemov, temveč bodo podrobneje proučene tudi aplikativne značilnosti. Upoštevanje teh značilnosti je pomembno za zagotavljanje učinkovite rabe rezultatov v praksi.

Glavne dejavnosti InnoRenew CoE pri projektu: InnoRenew CoE bo skrbel za analizo industrijskega problema in izbiro množice problemov ter specifikacijo osnovnega modela izbranega problema in pripravo umetnih primerov, ki bodo uporabljeni za testiranje rešitev.

VODJA PROJEKTA: dr. Jakub Michal Sandak

TRAJANJE: 1. 1. 2020 – 31. 12. 2021

FINANCIRANJE: Javna agencija za raziskovalno dejavnost Republike Slovenije (ARRS)

PARTNERJI: InnoRenew CoE (Slovenija); Tehniška univerza na Dunaju (Technische Universität Wien) (Avstrija)

Combining indoor environmental quality with human movement science to improve school quality

Students spend much of their time in classrooms with variable indoor conditions, and their physical activity is often restricted to limited periods. Classroom design factors, such as material selection and layout, contribute to psychophysiological well-being and safety. Likewise, classroom furniture design and its fit to pupils' changing bodies, in combination with opportunities to be active, can affect students' musculoskeletal health. Improving these factors should lead to happier, healthier and higher performing students and teachers. Addressing these issues wholistically requires interdisciplinary collaboration. This bilateral project will combine the expertise of involved researchers in ongoing and future research related to healthy built environments that addresses occupant well-being in buildings, with a focus on schools and school pupils.

InnoRenew CoE project activities: InnoRenew CoE will help to develop learning content and forms related to aspects of ergonomics and environmental health.



PROJECT LEADER:

Nejc Šarabon, PhD

PERIOD:

01.11.2020 - 31.10.2022

FINANCING:

Slovenian Research Agency (ARRS)

PARTNERS:

InnoRenew CoE (Slovenia); Norwegian University of Life Sciences (Norway)

Združitev kakovosti notranjega grajenega okolja in znanosti o gibanju z namenom celostne izboljšave šole

Učenci preživijo večino šolskega časa v učilnicah, v katerih se bivalni pogoji spreminjajo, telesne dejavnosti pa so običajno skrčene na omejena časovna obdobja. Na dobro psihofiziološko počutje in varnost pomembno vplivajo oblikovalski dejavniki, kot so uporabljeni materiali in notranja razdelitev prostora v učilnicah. Tako tudi dejavniki, kot so oblikovanje šolskega pohištva, njegovo prilagajanje telesnim meram učencev in možnost, da učenec vstane od mize in tako poskrbi za gibanje, vplivajo na mišično-skeletno zdravje učencev. Če bi te dejavnike izboljšali, bi prispevali tudi k večjemu zadovoljstvu in boljšemu zdravju ter uspehu učencev in učiteljev. Celosten pristop k tem izboljšavam zahteva interdisciplinarno sodelovanje. Bilateralni projekt bo zato povezal znanje in veščine vključenih raziskovalcev pri tekočih in bodočih raziskavah o zdravju in bivanju v notranjem grajenem okolju, osredotočenih na zdravje učencev v šolah.

Glavne dejavnosti InnoRenew CoE pri projektu: InnoRenew CoE bo pomagal pri razvoju učnih vsebin in modelov, povezanih z ergonomijo in vidiki zdravega okolja.

VODJA PROJEKTA: dr. Nejc Šarabon

TRAJANJE: 1. 11. 2020 – 31. 10. 2022

FINANCIRANJE: Javna agencija za raziskovalno dejavnost Republike Slovenije (ARRS)

PARTNERJI: InnoRenew CoE (Slovenija); Univerza za vede o znanosti na Norveškem (Norges miljø- og biovitenskapelige universitet – NMBU) (Norveška)



Enhanced Wood Properties of Low-Grade Timber Through Densification Coupled with Natural, Plant-Based Polymers

In this project, peracetic acid, dioxirane and hydrogen peroxide will be used as catalysts to target unsaturated fatty acids in vegetable oils to form polymerized oils for use in natural wood protection. Catalysts for oil polymerization can reduce wood's mechanical strength; however, this limitation offers an opportunity for moving past the state of the art with respect to plant oil polymerization in combination with thermal-hydro-mechanical (THM) treatments designed to increase wood's mechanical properties. By combining these two treatments, this research aims to overcome the shortcomings in both. Results should indicate improved value for low-grade wood in both participating countries and an effective and natural method for wood protection. The objective is to develop a methodology for treating densified poplar wood with epoxidized plant oils and assessing their performance, specifically dimensional stability, mechanical properties and leaching potential. Slovenian and Turkish research groups will valorize low-value wood, increase applications for consumer goods and offer an environmentally friendly alternative to synthetic resins.

InnoRenew CoE project activities: InnoRenew CoE is responsible for impregnation of poplar wood specimens with modified oils. Impregnated specimens will be densified using a THM treatment designed to polymerize the oil impregnant. THM treatment will be optimized for each oil by altering pressing parameters. InnoRenew CoE will also assess specimen performance.

PROJECT LEADER:

Matthew Schwarzkopf, PhD

PERIOD:

01.07.2020 - 30.06.2023

FINANCING:

Slovenian Research Agency (ARRS)

PARTNERS:

InnoRenew CoE (Slovenia); Karadeniz Technical University (Turkey)

Izboljšanje lastnosti nizkokakovostnega lesa z zgoščevanjem in uporabo naravnih polimerov

Pri projektu bodo nenasičene maščobne kisline v naravnih oljih, namenjenih zaščiti lesa, z uporabo peracetne kisline, dioksirena ali vodikovega peroksida kot katalizatorjev prisilili v polimerizacijo. Katalizatorji pri polimerizaciji olj lahko zmanjšajo mehansko trdnost lesa, to pa lahko odpravimo z uporabo najsodobnejše tehnologije polimerizacije naravnih olj v kombinaciji s termo-hidro-mehansko (THM) obdelavo lesa. S kombinacijo obeh obdelovalnih metod se lahko preseže njune posamezne pomanjkljivosti. Postopek bi lahko prinesel povečanje vrednosti manj kakovostnega lesa v obeh sodelujočih državah oziroma učinkovito in naravno zaščito lesa. Cilj projekta je razviti metodologijo za obdelavo zgoščenega topolovega lesa z epoksidnimi naravnimi olji in ovrednotiti njihovo učinkovitost, natančneje, njihovo dimenzijsko stabilnost, njihovo učinkovitost, natančneje, njihovo dimenzijsko stabilnost, mehanske lastnosti in možnost izpiranja. Slovenska in turška raziskovalna skupina bosta razvili metodologijo in izdelek, s katerima se bo ovrednotilo les nižje vrednosti, spodbudilo uporabo tega lesa pri izdelavi potrošniških dobrin in poskrbelo za okolju prijazno alternativo sintetičnim smolam.

Glavne dejavnosti InnoRenew CoE pri projektu: InnoRenew CoE skrbi za impregnacijo vzorcev topolovega lesa z modificiranimi olji. Impregnirane vzorce bodo zgotili s postopkom obdelave THM za doseganje polimerizacije impregnirane olja. Postopek obdelave THM bo s spreminjanjem parametrov stiskanja optimiziran za vsako posamezno skupino olja. InnoRenew CoE je poleg tega zadolžen, da ovrednoti učinkovitost.

VODJA PROJEKTA: dr. Matthew Schwarzkopf

TRAJANJE: 1. 7. 2020 – 30. 6. 2023

FINANCIRANJE: Javna agencija za raziskovalno dejavnost Republike Slovenije (ARRS)

PARTNERJI: InnoRenew CoE (Slovenija); Tehniška Univerza Karadeniz (Karadeniz Teknik Üniversitesi – KTÜ) (Turčija)

FAÇADE bio-Carbon based anti UV coating to prevent DEterioration of wooden buildings (FAÇADE)

Façades, which play a crucial role in building safety, comfort and aesthetics, are in constant interaction with the outside environment. Ultraviolet (UV) solar radiation absorbed by lignin initiates the wood weathering process; therefore, it is crucial to limit weathering effects that can lead to wooden façade deterioration by using coatings to protect their surface. UV absorbers enhance wood durability by absorbing incident radiation and converting it into heat, which is then dissipated. Bio-carbon obtained from thermal decomposition of organic materials at elevated temperatures is a potential UV stabilizer thanks to its combined effects of physical screen, UV absorbance and radical trap. The FAÇADE project proposes to develop a competitive, sustainable bio-sourced anti-UV coating to protect wooden façades using bio-carbon as a UV-stabilizer. The FAÇADE project is expected to provide breakthroughs for advancing the use of bio-carbon in new applications and prove a fundamental understanding of the UV protection mechanisms of nanoscale carbon particles.

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



PROJECT LEADER:

Laetitia Marrot, PhD

PERIOD:

01.04.2020 - 31.03.2022

FINANCING:

EU, Horizon 2020 - Marie Skłodowska-Curie Action Individual Fellowship

COORDINATOR:

InnoRenew CoE (Slovenia)

Fasadni premaz z UV-zaščito na osnovi bioogljika, ki zavira razgradnjo lesenih stavb (FAÇADE)

Fasade, ki so ključnega pomena za varnost, udobje in estetiko stavb, so nenehno v stiku z zunanjim okoljem. Ultravijolično (UV) sevanje, ki ga absorbira lignin, sproži staranje lesa, zato je izjemno pomembno, da uporabimo premaze, ki ščitijo leseno površino, in tako omejimo vremenski vpliv na fasade. Bioogljik, ki ga pridobimo s termično razgradnjo organskih materialov pri povišanih temperaturah, je eden od možnih UV-stabilizatorjev, saj omogoča kombinacijo fizične zaščite in vpijanja UV-žarkov. Namen projekta FAÇADE je razvijanje konkurenčnih trajnostnih premazov z UV-zaščito za lesene fasade, ki bodo temeljili na uporabi bioogljika. Rezultati projekta bodo predvidoma prelomni, saj naj bi z novim razumevanjem vloge ogljikovih delcev na nanoravni pri mehanizmu zaščite pred UV-žarki prinesli nova spoznanja glede uporabe bioogljika.

Glavne dejavnosti InnoRenew CoE pri projektu: Projekt je kot individualno štipendijo Marie Skłodowske-Curie pridobila dr. Laetitia Marrot pod mentorstvom dr. Davida B. DeVallance in v okviru raziskovalne skupine InnoRenew CoE Kompoziti iz obnovljivih materialov. Pod okriljem projekta bo dr. Marrotova ob znanstvenem delu tudi mentorirala mlade raziskovalce, organizirala dogodke in vodila projekte.

VODJA PROJEKTA: dr. Laetitia Marrot

TRAJANJE: 1. 4. 2020 – 31. 3. 2022

FINANCIRANJE: EU, Obzorje 2020 – H2020-MSCA-IF-2019 Marie Skłodowska-Curie Action Individual Fellowships (Standard European Fellowships)

KOORDINATOR PROJEKTA: InnoRenew CoE (Slovenija)



DESIGN for all methods to cREate age-friendly housing (DESIRE)

The number of people over 65 in Europe is expected to grow 28.5 percent by 2050. According to the World Health Organization (WHO), physical and social environments are key determinants of whether people can remain healthy, independent and autonomous long into their old age, which makes housing is an important factor in active and healthy ageing. However, a large part of the EU's housing stock has not been designed to accommodate the needs of older people. D4All is a tool that ensures accessibility, well-being and health (physical and mental) for older adults and enables conscious use of the needs analysis as required by end-user involvement (i.e., human-centered design). DESIRE aims to provide building industry and home furnishings sector professionals with tools and skills to integrate D4All methods in the design process to create or adapt age-friendly housing for the well-being, comfort and autonomy of older adults or dependents at home. In addition, the project will use restorative environmental and ergonomic design (REED) in order to detect interactions between humans and the built environment.

PROJECT LEADER:

Nejc Šarabon, PhD

PERIOD:

01.12.2020 - 30.11.2022

FINANCING:

EU, Erasmus +

COORDINATOR:

Slovak University of Technology in Bratislava (Slovakia)

PARTNERS:

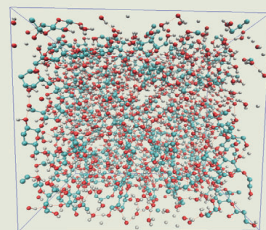
Institute of Ethnology Slovak Academy of Sciences (Slovakia); Asociacion Empresarial de Investigacion Centro Tecnologico del Mueble la Madera de la Region de Murcia (Spain); SHINE2EUROPE, LDA (Portugal); InnoRenew CoE (Slovenia)

InnoRenew CoE project activities: InnoRenew CoE will contribute its knowledge of REED. In the project's educational materials development phase, InnoRenew CoE researchers will address the subject of physical and mental health in the built environment. In addition, InnoRenew CoE researchers will work on methodology and ensure that the developed educational program is systematically and thoroughly verified.

Understanding hygroscopic properties of wood through multiscale modelling (HYGRO-WOOD)

Wood is an anisotropic material that has a strong tendency to absorb water, which causes changes to its mechanical properties, dimensional stability, durability and physical and chemical properties. Multiscale modeling can capture moisture-induced wood at a resolution down to the atomic level. HYGRO-WOOD will use state-of-the-art multiscale techniques, including density functional theory (DFT), molecular dynamics (MD) and computational fluid dynamics (CFD), to investigate wood's thickest cell layer (secondary cell wall [S2]) and understand its hygroscopic and mechanical behavior from atomic to molecular and continuum scale. Moisture sorption and desorption process models will be developed and compared with experimental adsorption process. Hydrogen bond information within a polymer matrix will be elucidated in order to demonstrate how variation of moisture content changes the hydrogen bond pattern between wood components. The overall goal is to investigate the underlying mechanism of water molecules influencing properties such as hygroscopic swelling and mechanical weakening of wood, which can be upscaled to continuum modeling to provide material properties.

InnoRenew CoE project activities: InnoRenew CoE will help in construction of an MD model consisting of crystalline cellulose, non-crystalline hemicellulose and lignin and investigate the understanding of moisture response behavior in separate wood component systems. Researchers will work on construction of integrated S2 layer with wood components and study different hydration levels to analyze hydromechanical properties.



PROJECT LEADER:

Veerapandian Ponnuchamy, PhD

PERIOD:

01.11.2020 - 31.10.2022

FINANCING:

Slovenian Research Agency (ARRS)

PARTNERS:

InnoRenew CoE (Slovenia); Lithuanian Energy Institute (Lithuania)

Metode univerzalnega oblikovanja starostnikom prijaznih bivanjskih prostorov (DESIRE)

Število ljudi, starih nad 65 let, naj bi do leta 2050 v Evropi naraslo na 28,5 odstotka. Po podatkih Svetovne zdravstvene organizacije sta fizično in socialno okolje ključna dejavnika, ki vplivata na to, ali so ljudje še dolgo v starosti zdravi, neodvisni in samostojni. Bivanjski prostor je zato pomemben dejavnik, pa vendar številna stanovanja v EU niso zasnovana tako, da bi ustrezala potrebam starejših. D4All je priznano orodje za zagotavljanje dostopnosti, dobrega počutja, fizičnega in duševnega zdravja starejših, ki omogoča oblikovanje ljudem prijaznih bivanjskih prostorov (Human-Centered Design). Cilj projekta je zagotoviti strokovnjakom v gradbeni in pohištveni industriji orodja in veščine, s katerimi bi metodo D4All lahko uporabili kot sestavni del vseh procesov oblikovanja. Tako bi lahko ustvarili ali prilagodili starostnikom bivanjske prostore, ki bi omogočali dobro počutje, udobje in samostojnost starejših oseb na njihovem domu. Projekt bo poleg tega temeljil na restorativnem in ergonomskem okoljskem oblikovanju (REED), na podlagi katerega bi sledili interakcijam med ljudmi in grajenim okoljem.

Glavne dejavnosti InnoRenew CoE pri projektu: InnoRenew CoE bo prispeval predvsem znanje s področja REED. V fazi razvoja izobraževalnih gradiv bodo raziskovalci iz InnoRenew CoE obravnavali fizično in duševno zdravje v grajenem okolju. Raziskovalci iz InnoRenew CoE se bodo poleg tega posvetili metodologiji in poskrbeli, da se uporabniška vrednost razvitega izobraževalnega programa sistematično in temeljito preveri.

VODJA PROJEKTA: dr. Nejc Šarabon

TRAJANJE: 1. 12. 2020 – 30. 11. 2022

FINANCIRANJE: EU, Erasmus +

KOORDINATOR PROJEKTA: Tehniška univerza v Bratislavi (Slovenská technická univerzita v Bratislave – STU) (Slovaška)

PARTNERJI: Inštitut za etnologijo in socialno antropologijo Slovaške akademije znanosti (Ústavetnológie a sociálnej antropológie Slovenskej akadémie vied) (Slovaška); Asociación Empresarial Centro Tecnológico del Mueble y la Madera de la Región de Murcia (Španija); SHINE2Europe, Lda (Portugalska); InnoRenew CoE (Slovenija)

Razumevanje higroskopskih lastnosti lesa skozi večnivojsko modeliranje (HYGRO-WOOD)

Les je zelo razširjen in trajnostni gradbeni material ter eden od najpogostejših materialov, ki se uporabljajo v vsakdanjem življenju. Je anizotropen material, ki je zelo nagnjen k absorpciji vode, kar povzroča spreminjanje njegovih mehanskih lastnosti, dimenzijske stabilnosti in trajnosti, vpliva pa tudi na njegove fizikalne in kemijske lastnosti. Z večnivojskim modeliranjem lahko vlažnost lesa analiziramo vse do atomskega nivoja. Da bi proučili najdebelejšo celično plast lesa (sekundarna celična stena [S2]) in razumeli higroskopsko ter mehansko obnašanje tako v atomskem kot molekularnem in kontinuumskem merilu, bodo raziskovalci pri projektu HYGRO-WOOD uporabili najsodobnejše večdimenzijske tehnike, vključno s teorijo funkcionalne gostote (density functional theory – DFT), molekularno dinamiko (MD) in računalniško dinamiko tekočin (computational fluid dynamics – CFD). Razvili bodo procesne modele sorpcije in desorpcije vlage in jih primerjali z eksperimentalnim adsorpcijskim procesom. Osvetlili bodo informacijo vodikovih vezi znotraj polimerne matrice, da bi prikazali, kako variabilnost vsebine vlage spreminja vzorec vodikovih vezi med lesnimi komponentami. Splošni cilj študije je raziskati osnovni mehanizem vodnih molekul, ki vplivajo na lastnosti lesa, kot je higroskopsko nabrekanje in mehanska slabitev, in ki ga lahko nadgradimo v kontinuumsko modeliranje, da bi poskrbeli za lastnosti materialov.

Glavne dejavnosti InnoRenew CoE pri projektu: Raziskovalci InnoRenew CoE bodo pomagali pri izdelavi MD modela, sestavljenega iz kristalinične celuloze, nekristalinične hemiceluloze in lignina, in proučevali razumevanje odzivnega obnašanja na vlago v ločenih sistemih lesenih komponent. Sodelovali bodo tudi pri izdelavi integrirane plasti S2 z lesnimi komponentami in raziskovali različne ravni hidratacije za analizo hidromehanskih lastnosti.

VODJA PROJEKTA: dr. Veerapandian Ponnuchamy

TRAJANJE: 1. 11. 2020 – 31. 10. 2022

FINANCIRANJE: Javna agencija za raziskovalno dejavnost Republike Slovenije (ARRS)

PARTNERJI: InnoRenew CoE (Slovenija); Lietuvos energetikos institutas (Litva)



Innovation activities of Austrian and Slovenian companies in the wood-value chain

In this bilateral project, we will compare innovation activities of Slovenian and Austrian companies in the forest sector based on available secondary data. A comparative analysis will enable us to better explain the reasons for lagging Slovenian companies. Another success factor in this sector is the ownership and management structure of companies. The analysis of selected case studies will help us understand the relationship between these structures and success of the company. One of the research cases will be a study of beekeepers from the innovation adoption and diffusion perspective that will focus on development of future scenarios in the context of economic, environmental and social challenges. This will include the study of innovation driven by climate change. In addition to cost-benefit analysis, sustainability impact assessment and other quantitative simulation models will be developed.

InnoRenew CoE project activities: InnoRenew CoE will prepare a data management plan and offer methodological and statistical support for data collection and analysis for the whole project. Research activities will include review of the literature on innovation in the forest sector, a qualitative study of Austrian and Slovenian companies in the forest sector and a life cycle assessment.

PROJECT LEADER:

Ana Slavec, PhD

PERIOD:

01.01.2020 - 31.12.2021

FINANCING:

Slovenian Research Agency (ARRS)

PARTNERS:

InnoRenew CoE (Slovenia);
Institute of System Sciences,
Innovation and Sustainability
Research, University of Graz
(Austria)

Inovacijske aktivnosti avstrijskih in slovenskih podjetij v gozdno-lesni verigi vrednosti

V okviru tega bilateralnega projekta bomo razširili sekundarno analizo podatkov CIS in primerjali inovacijske dejavnosti slovenskih in avstrijskih podjetij v panogi. Dobili bomo dostop do podatkov CIS za Avstrijo in izvedli enake analize, kot smo jih za Slovenijo. Primerjalna analiza nam bo omogočila, da bolje pojasnimo razloge za zaostajanje slovenskih podjetij. Drugi dejavnik uspeha v panogi je lastniška in upravljavska struktura podjetij. Analiza izbranih študij primera nam bo pomagala razumeti odnos med temi strukturami in uspehom podjetja. Eden od raziskovalnih primerov bo tudi študija čebelarjev z vidika sprejemanja inovacij in njihove širitve, ki se bo posvetila razvoju prihodnjih scenarijev v okviru gospodarskih, okoljskih in socialnih izzivov. To bo vključevalo študijo inovacij, ki jih poganjajo podnebne spremembe. Poleg analize stroškov in koristi bo izvedena tudi presoja vplivov na trajnostnost in drugi kvantitativni simulacijski modeli.

Glavne dejavnosti InnoRenew CoE pri projektu: InnoRenew bo pripravil načrt upravljanja podatkov in nudil metodološko in statistično podporo pri zbiranju in analizi podatkov. Raziskovalne dejavnosti bodo vključevale pregled literature o inovacijah v gozdnem sektorju, kvalitativno raziskavo avstrijskih in slovenskih podjetij v tem sektorju ter študijo z metodo ocenjevanja življenjskega cikla.

VODJA PROJEKTA: dr. Ana Slavec

TRAJANJE: 1. 1. 2020 – 31. 12. 2021

FINANCIRANJE: Javna agencija za raziskovalno dejavnost Republike Slovenije (ARRS)

PARTNERJI: InnoRenew CoE (Slovenija);

Institut za sistemske znanosti, inovacije in raziskave trajnostnega razvoja, Univerza v Gradcu (Institut für Systemwissenschaften, Innovations- und Nachhaltigkeitsforschung, Universität Graz) (Avstrija)

Development of new practices for forest property management and strengthening of all its functions

This project addresses forest management on small farms. Professionally defined silviculture plans (SCP) serve as tools and guidelines for forest management. SCPs are prepared for individual areas as implementation plans with defined measures for a specific forest or part of it. Small forest owners implement SCPs to a lesser extent and without considering multipurpose forest management concepts or all forest functions. In most cases, small forest owners do not know the data included in the SCP, nor do they know how to find it; furthermore, they do not have the appropriate knowledge to implement the measures envisaged by the SCP. This project will develop practices for improving the management of small forest estates, which will be combined in the documents' forest establishment plans. These plans will be formulated at an individual farm level and in such a way that SCP objectives will be transferred from the strategic level to the implementation level. The project's main goal is to prepare and pilot forest holding plans for the four involved farms.

InnoRenew CoE project activities: InnoRenew CoE is responsible for sustainable development and renewable materials education, forest owner communication and promotion of integration into wood processing chains. Additionally, new, innovative solutions and possibilities for the use of wood will be explored.



PROJECT LEADER:

Stritih, svetovanje za trajnostni razvoj, d.o.o. / Črtomir Tavzes, PhD (for InnoRenew CoE)

PERIOD:

09.07.2020 - 09.07.2022

FINANCING:

Republic of Slovenia Ministry of Agriculture, Forestry and Food

PARTNERS:

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)

Razvoj novih praks za upravljanje gozdnih posesti in krepitev vseh njegovih funkcij

Projekt obravnava področje upravljanja z gozdom na manjših kmetijskih gospodarstvih. Strokovne podlage za upravljanje z gozdom so opredeljene v gozdnogojitvenih načrtih (GGN), ki se uporabljajo kot pripomoček in smernice pri upravljanju z gozdom. Za posamezna območja so GGN pripravljene kot izvedbeni načrti z opredeljenimi ukrepi, predvidenimi za določen gozd ali del gozda. Manjši lastniki gozdov GGN večinoma izvajajo le v manjši meri in brez upoštevanja koncepta večnamenskosti gospodarjenja z gozdom oziroma upoštevanja vseh funkcij gozda. Podatkov, ki jih vključuje GGN, ti lastniki večinoma ne poznajo niti jih ne znajo poiskati. Poleg tega tudi nimajo ustreznega znanja za izvajanje ukrepov, ki jih GGN predvideva. Aktivnosti projekta bodo usmerjene v razvoj praks za izboljšanje gospodarjenja z majhnimi gozdnimi posestvi, ki bodo nato zbrane v dokumentu Načrti gozdnih posesti. Načrti bodo oblikovani na ravni posamezne kmetije, pri čemer se bo cilje in ukrepe GGN s strateške ravni preneslo na izvedbeno raven, torej v prakso lastnikov malih gozdnih posesti. Glavni cilj projekta je pripraviti načrte za štiri gozdne posesti vključenih kmetij in pripravljene načrte tudi pilotno izvesti.

Glavne dejavnosti InnoRenew CoE pri projektu: Dejavnosti InnoRenew CoE bodo namenjene izobraževanju s področja trajnostnega razvoja in obnovljivih materialov, informiranju lastnikov gozdov in spodbujanju povezovanja, vključevanja v lesno-predelovalne verige ter iskanja novih, inovativnih rešitev in možnosti uporabe lesa.

VODJA PROJEKTA: Stritih, svetovanje za trajnostni razvoj, d.o.o. / dr. Črtomir Tavzes, (for InnoRenew CoE)

TRAJANJE: 9. 7. 2020 – 9. 7. 2022

FINANCIRANJE: Ministrstvo za kmetijstvo, gozdarstvo in prehrano Republike Slovenije

PARTNERJI: InnoRenew CoE; Kmetija Volk; Šolski Center Postojna; Kmetija Jernejevi; kmetija Žustnovi;

Marko Mahne – Nosilec dopolnilne dejavnosti na kmetiji; Kmetija Morelj; Izobraževanje, Tamara Urbančič, s. p.; Društvo lastnikov gozdov Vrhe-Vremščica (Slovenija)



Reducing occupant stress through improved indoor environmental quality and the use of renewable materials indoors

This project will build a long-term collaborative relationship between both institutions based on mutual research objectives and complementary activities and expertise. Accordingly, project objectives are to transfer knowledge on the background and methodologies applied at each organisation to enhance ongoing research projects through mutual visits; extend each other's network of collaborators on the topic; identify and investigate common and newly merged research questions through ongoing and future research projects; prepare at least two joint publications between the teams; and share project results beyond the academic sphere (i.e., disseminate findings to industry, architects, designers).

InnoRenew CoE project activities: This project focuses on enhancing current and future complementary research related to occupant stress and well-being in buildings. Researchers from each organization will visit the partner institute and maintain regular dialogue about ongoing work to identify strengths and weaknesses in each other's work. This exchange will enhance each partners' work with capabilities and knowledge from the other partner to achieve stronger research evidence that will help to guide building designers, managers and owners in space optimization to improve occupant well-being, especially through stress reduction. The main vehicle for these improvements is increasing and optimizing the use of visible wood indoors.

PROJECT LEADER:

Michael David Burnard, PhD

PERIOD:

01.11.2020 - 31.10.2022

FINANCING:

Slovenian Research Agency (ARRS)

PARTNERS:

InnoRenew CoE (Slovenia); Natural Resources Institute Finland (Finland)

Izboljšana kakovost notranjega okolja in uporaba obnovljivih materialov v notranjih prostorih za zmanjšanje stresa pri uporabnikih stavb

Splošni cilj projekta je vzpostavitev dolgoročnega sodelovanja med obema ustanovama, ki temelji na skupnih raziskovalnih ciljih, komplementarnih dejavnostih in strokovnem znanju ter prijateljskih odnosih. V skladu s tem so tudi posamični cilji projekta: prenos znanja na podlagi in metodah, ki jih ustanovi uporabljata, da bi z medsebojnimi obiski izboljšali tekoče raziskovalne projekte; razširjanje raziskovalne mreže obeh ustanov na obravnavanem področju; opredelitev in obravnavanje skupnih in novih povezanih raziskovalnih vprašanj na podlagi sedanjih in prihodnjih raziskovalnih projektov; priprava najmanj dveh skupnih objav in širjenje rezultatov projekta zunaj akademske sfere (tj. širjenje ugotovitev v industrijo, med arhitekto, oblikovalce itd.).

Glavne dejavnosti InnoRenew CoE pri projektu: Projekt je namenjen izboljšanju obstoječih in nadaljnjih raziskav, povezanih s stresom in dobrim počutjem uporabnikov stavb. Raziskovalci iz obeh organizacij se bodo obiskovali in ohranjali redno komunikacijo o tekočem delu, da bi lažje prepoznali prednosti in slabosti svojega dela. Cilj teh izmenjav je deliti znanje med partnerskima ustanovama in tako ustvariti boljšo bazo raziskovalnih dokazov, ki bodo oblikovalcem, upravljavcem in lastnikom stavb pomagali optimizirati prostor glede na njegov vpliv na počutje uporabnikov, zlasti na zmanjšanje stresa. To pa bodo dosegli predvsem na podlagi večje in učinkovitejše rabe lesa v notranjih prostorih.

VODJA PROJEKTA: dr. Michael David Burnard

TRAJANJE: 1. 11. 2020 – 31. 10. 2022

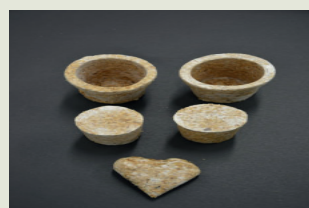
FINANCIRANJE: Javna agencija za raziskovalno dejavnost Republike Slovenije (ARRS)

PARTNERJI: InnoRenew CoE (Slovenija); Inštitut za naravne vire Finske (Luonnonvarakeskus) (Finska)

Valorisation of hemp by-products for composite applications

Industrial hemp (*Cannabis sativa* L.), is an annual crop that requires low input to cultivate, fitting it into sustainable farming systems. The hemp plant is quite versatile as all parts can be used for different applications. In Slovenia and Estonia, cannabidiol (CBD) oil is the main product harvested from hemp, and the remaining plant material ends up as low-value products or waste. This project proposes new ways to value hemp residues from Slovenian and Estonian industries. Fibers and shives will be considered separately, due to their distinct properties, in order to target different applications in the composite industry and provide value beyond CBD oil for producers. Besides increasing scientific knowledge in the fields of natural fibers, renewable composites and taxonomic kingdom, strong collaboration between the Slovenian and Estonian institutes will be initiated, extending the involvement of young researchers in international projects.

InnoRenew CoE project activities: InnoRenew CoE researchers will develop two major products: thermoplastic composites using hemp fibers as a reinforcement and mycelium composites using hemp shives as a substrate. In addition, formulations and manufacturing processes for these materials will be customized, and the mechanical properties of both bio-based composites will be measured for data collection and analysis for the whole project.



PROJECT LEADER:

David B. DeVallance, PhD

PERIOD:

01.11.2020 - 31.10.2022

FINANCING:

Slovenian Research Agency (ARRS)

PARTNERS:

InnoRenew CoE (Slovenia); Tallinn University of Technology (Estonia)

Dodajanje vrednosti stranskim proizvodom predelave konoplje z uporabo v kompozitih

Industrijska konoplja (*Cannabis sativa* L.) je enoletnica, ki ustreza trajnostnim sistemom kmetovanja, za njeno pridelavo pa zadostuje majhen vložek. Poleg tega je vsestranska rastlina, saj so za različne namene uporabni vsi njeni deli. V Sloveniji in Estoniji je glavni proizvod, pridobljen iz konoplje, olje kanabidiola (CBD), iz preostalih delov rastline pa proizvajajo izdelke z nizko vrednostjo ali odpadke. Projekt se posveča novemu vrednotenju ostankov konoplje v slovenski in estonski industriji. Konopljna vlakna in drobir bodo zaradi različnih lastnosti obravnavali ločeno, da bi omogočili drugačne uporabe v proizvodnji kompozitov in proizvajalcem (mimo olja CBD) zagotovili dodano vrednost. Poleg poglobljanja metodološkega znanja na področjih naravnih vlaken, obnovljivih kompozitov in taksonomije je cilj projekta spodbuditi trajno sodelovanje med slovenskimi in estonskimi inštituti ter razširiti vključevanje mladih raziskovalcev v mednarodne projekte.

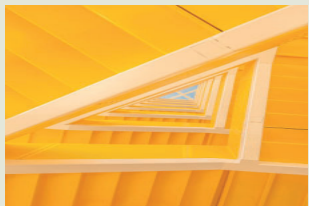
Glavne dejavnosti InnoRenew CoE pri projektu: Raziskovalci InnoRenew CoE bodo pri tem projektu razvili dva glavna izdelka: termoplastične kompozite, pri katerih bodo konopljna vlakna uporabili za ojačitev, in micelijske kompozite, pri katerih bodo konopljin drobir uporabili za podlago. Poleg tega bodo prilagodili oblikovanje in proizvodne procese teh materialov ter izmerili njihove mehanske lastnosti.

VODJA PROJEKTA: dr. David B. DeVallance

TRAJANJE: 1. 11. 2020 – 31. 10. 2022

FINANCIRANJE: Javna agencija za raziskovalno dejavnost Republike Slovenije (ARRS)

PARTNERJI: InnoRenew CoE (Slovenija); Tehniška univerza v Talinu (Tehnikaülikool) (Estonija)



Influence of doweled connection on the dynamic response of tall timber buildings

The project's first aim is to perform a series of tests on doweled connections – like the connections used in the Mjøstårnet tall timber building in Norway. A modified non-standard loading protocol will be employed to better simulate wind loading conditions and investigate low displacement damping, followed by a standardized protocol that will be used to further derive the full hysteresis parameters needed for seismic design. Experimental results will then be used as input for the assembly of a finite element model (FEM) of the Mjøstårnet building. This full building model will be calibrated to both our new connection testing results and the in-situ testing of the building with ambient and force vibration. Nonlinear FEM will be employed to assess the overall parameters that were used (and, in some cases, assumed) to design the building in the first place – information that will be extremely important for building design code assessment and eventual modification. The model will also be used for simulation of hypothetical seismic loads. This project will demonstrate up to which peak ground acceleration, such a top-heavy building design, could still be used in a seismic location, which is of great importance if the building's concept were to be replicated in a seismically active area.

InnoRenew CoE project activities: InnoRenew CoE researchers will perform doweled connection experimental testing. Experimental results will be used as input for connection modelling of the 18-storey Mjøstårnet building in Norway, which uses a truss system to resist horizontal loads. Possibilities to replicate the Mjøstårnet building's concept in other, seismically active places will be investigated.

PROJECT LEADER:
Iztok Šušteršič, PhD
PERIOD:
01.11.2020 - 10.31.2022
FINANCING:
Slovenian Research Agency (ARRS)
PARTNERS:
InnoRenew CoE (Slovenia);
Norwegian University of Science
and Technology (Norway)

Vpliv mozničenih spojev na globalni dinamični odziv visokih lesenih objektov

Prvi cilj projekta je izvesti serijo eksperimentalnih preiskav mozničenih spojev - takšnih, kot so uporabljeni na visoki stavbi Mjøstårnet na Norveškem. Pri raziskavah bodo uporabili modificiran nestandardni protokol obremenjevanja, s katerim bodo bolje simulirali obtežbo vetra in preučili dušenje pri majhnih pomikih. Sledil bo standardni protokol obremenjevanja, ki se uporablja za ovrednotenje histereznih parametrov pri protipotresnem projektiranju. Eksperimentalni rezultati bodo služili kot vhodni podatek za izvedbo modela končnih elementov (FEM) stavbe Mjøstårnet. Model bo kalibriran tako glede na odziv rezultatov spojev kot tudi na in situ meritve stavbe z ambientalnimi in vsiljenimi vibracijami. Nelinearni FEM bo tako uporabljen za oceno parametrov, ki so bili upoštevani (včasih ocenjeni) pri projektiranju stavbe – te informacije bodo izjemno koristne za oceno projektantskih standardov in njihovo morebitno dopolnitev. Model bo uporabljen tudi za simulacije hipotetične potresne obtežbe. Raziskovalci bodo pokazali, kakšne pospeške tal lahko zgradba z veliko težo na vrhu na potresni lokaciji še prenese, kar bo zelo pomembno v primeru, če bi se odločili njen koncept uporabiti na potresno aktivnih območjih.

Glavne dejavnosti InnoRenew CoE pri projektu: Raziskovalci InnoRenew CoE bodo preizkusili mozničene spoje. Rezultati preizkusa bodo služili kot vhodni podatki za modeliranje končnih elementov 18-nadstropne stavbe Mjøstårnet na Norveškem, ki uporablja sistem ogrodja za odpornost na vodoravne obremenitve. Z raziskavo bodo preverili možnost ponovitve koncepta take stavbe na drugih potresno aktivnih mestih.

VODJA PROJEKTA: dr. Iztok Šušteršič
TRAJANJE: 1. 11. 2020 – 31. 10. 2022
FINANCIRANJE: Javna agencija za raziskovalno dejavnost Republike Slovenije (ARRS)
PARTNERJI: InnoRenew CoE (Slovenija); Univerza za znanost in tehnologijo na Norveškem (Norges teknisk-naturvitenskaplige universitet - NTNU) (Norveška)

Comparison of sound field characterization methods

The diffuse sound field is an important idealized field in acoustics for standardized acoustic measurements, simple predictions and a broad range of theoretical derivations. Surprisingly, there is no general agreement about the definition of the diffuse sound field, its quantification or characterization. This research project compares two sound field characterization methods related to the diffuse sound field, impulse response sensitivity and plane wave decomposition. These methods have been developed by InnoRenew CoE and Technical University of Denmark research groups, and comparison will be done on both a theoretical and experimental level.

InnoRenew CoE project activities: InnoRenew CoE's researchers will lead the theoretical and experimental part of the project. The common theoretical ground for both experimental sound field characterization approaches will be determined, and the experimental validation procedure will be specified. The both impulse response sensitivity and the plane wave decomposition measurements will be carried out under laboratory conditions.



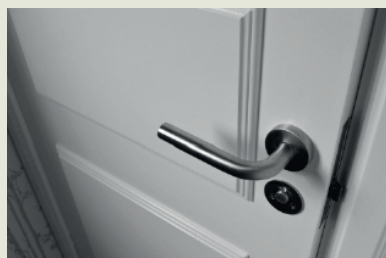
PROJECT LEADER:
Rok Prislan, PhD
PERIOD:
01.11.2020 - 31.10.2022
FINANCING:
Slovenian Research Agency (ARRS)
PARTNERS:
InnoRenew CoE (Slovenia);
Technical University of Denmark
(Denmark)

Primerjava metod eksperimentalne validacije zvočnega polja

Difuzno zvočno polje je pomembno idealizirano polje v akustiki in se uporablja pri standardiziranih merilnih postopkih, računskih napovedih ter v širokem naboru teoretskih izpeljav. Presenetljivo je torej, da ni splošnega soglasja stroke glede definicije difuznega zvočnega polja, njegovega ovrednotenja in kategorizacije kot tudi ne pravega razumevanja, katere so ključne karakteristike površin v prostoru, ki povzročijo, da se vzpostavi difuzno polje. Raziskovalni projekt se osredotoča na primerjavo dveh metod za karakterizacijo zvočnega polja, povezanih z difuznim zvočnim poljem – občutljivosti na impulzni odziv in razgradnje ravnega vala. Metodi so razvile raziskovalne skupine iz InnoRenew CoE in Tehniške univerze na Danskem (DTU), njuni primerjavi pa bodo izvedli tako na teoretični kot na eksperimentalni ravni.

Glavne dejavnosti InnoRenew CoE pri projektu: Raziskovalci iz InnoRenew CoE bodo vodili teoretični in eksperimentalni del projekta. Določili bodo skupno teoretično podlago za oba eksperimentalna pristopa h karakterizaciji zvočnega polja in postopek eksperimentalne validacije. Meritve občutljivosti na impulzni odziv in meritve razgradnje ravnega vala bodo izvedli v laboratorijskih pogojih.

VODJA PROJEKTA: dr. Rok Prislan
TRAJANJE: 1. 11. 2020 – 31. 10. 2022
FINANCIRANJE: Javna agencija za raziskovalno dejavnost Republike Slovenije (ARRS)
PARTNERJI: InnoRenew CoE (Slovenija); Tehniška univerza na Danskem (Danmarks Tekniske Universitet – DTU) (Danska)



Functionality and Environmental Suitability of the Door Closure System (FOUSIJA)

Due to scarcity of many raw materials, it is important to improve products and industrial processes in order to manage resources in the context of an environmental assessment that is in line with principles of the circular economy. Businesses need to balance environmental considerations and economic parameters to better align themselves with market needs that are changing according to social and political contexts. Research in this area should include environmental and socio-economic assessment of different products and processes as well as use of ICT and project management, including the business model for proposed solutions. Titus d.o.o. manufactures soft-closing systems for various applications (furniture, household appliances and other consumer goods). To ensure high quality standards, a small proportion of the cabinet hardware is discarded, which means a significant cost and environmental impact due to scale in mass production. The company wants to establish a business model that would offer an optimal solution to this problem while taking all major economic and environmental impacts into account. Dismantling discarded products into individual components for possible reuse as raw material or sale of disassembled components for new products can be an additional source of income and contribute to the reduction of production costs.

InnoRenew CoE project activities: InnoRenew CoE experts will help students conduct a recycled material and secondhand market review for Titus. With their findings, they will design an environmental evaluation model based on life cycle thinking for the circularity of selected products. They will prepare a mathematical (geometric) model for the prediction of door openings in furniture and household appliances as well as software for graphically displaying door openings in furniture and household appliances in 3D. They will also draft a sustainable business model for handling Titus products that cannot be used due to quality requirement.

PROJECT LEADER:

University of Primorska, Faculty of Mathematics, Natural Sciences and Information Technologies (UP FAMNIT) / Erwin M. Schau, PhD (for InnoRenew CoE)

PERIOD:

01.03.2020 - 31.07.2020

FINANCING:

European Union - European Cohesion Fund; Republic of Slovenia Ministry of Education, Science and Sport; and the Public Scholarship, Development, Disability and Maintenance Fund of the Republic of Slovenia

PARTNERS:

Titus, d. o. o., Dekani (Slovenia); InnoRenew CoE (Slovenia); UP FAMNIT students (4) from Computer Science and Informatics (graduate student), Bioinformatics (undergraduate student), Data Science (graduate student), Nature Conservancy (graduate student); UP Faculty of Management student (1) from Sustainable Development Management (graduate student); UP Faculty of Health Sciences student (1) from Kinesiology (postgraduate); working mentors Danijel Kozlovič (Titus d.o.o., Dekani) and Erwin M. Schau, PhD (InnoRenew CoE); pedagogical mentors Assoc. prof. Jernej Vičič, PhD (UP FAMNIT) and Assoc. prof. Andreja Kutnar, PhD (UP FAMNIT)

Funkcionalnost in Okoljska Ustreznost Sistemov zapiranja vrat (FOUSIJA)

Zaradi pomanjkanja nekaterih surovin je za proizvode in industrijske procese zelo pomembno boljše upravljanje z viri ob sočasni okoljski presoji, ki je v skladu z načeli krožnega gospodarstva. Podjetja morajo uravnotežiti okoljske vidike in gospodarske parametre ter se bolje uskladiti s potrebami trga, ki se spreminjajo glede na družbeno razpoloženje in politični okvir. Raziskave na tem področju morajo zato vključevati okoljsko in družbenoekonomsko presojo različnih izdelkov in procesov, uporabo IKT in vodenje projektov, vključno s poslovnim modelom za predlagane rešitve. V podjetju Titus proizvajajo sisteme za mehko zapiranje za različne uporabe (pri pohištvu, beli tehniki in ostalem potrošniškem blagu). Zaradi zagotavljanja visokih standardov kakovosti manjši del okovja izločijo v izmet, kar zaradi masovne proizvodnje predstavlja znaten strošek in vpliv na okolje. Podjetje zato želi vzpostaviti poslovni model, ki bi bi ponujal optimalno rešitev za to težavo, hkrati pa zajemal vse pomembnejše ekonomske in okoljske vplive. Razstavljanje izločenih izdelkov na posamezne komponente ter morebitna ponovna uporaba ali prodaja razstavljenih komponent za surovino lahko pomenijo dodaten vir zaslužka oziroma zmanjšanje proizvodnih stroškov.

Glavne dejavnosti InnoRenew CoE pri projektu: Strokovnjaki iz InnoRenew CoE bodo opravili pregled trga z ostanki ter odpadki podjetja Titus. Na podlagi ugotovitev bodo oblikovali model za okoljsko vrednotenje in izdelali analizo LCA za razgradnjo izbranih izdelkov. Pripravili bodo matematični (geometrični) model za napoved odpiranja vrat pri pohištvu in gospodinjstvih napravah ter programsko opremo za grafični prikaz odpiranja vrat pri pohištvu in gospodinjstvih napravah v prostoru, poleg tega pa tudi osnutek trajnostnega poslovnega modela za ravnanje z izdelki podjetja Titus, ki jih pri nadzoru kakovosti določijo za neustrezne.

VODJA PROJEKTA: Univerza na Primorskem, Fakulteta za matematiko, naravoslovje in informacijske tehnologije (UP FAMNIT) / dr. Erwin M. Schau (za InnoRenew CoE)

TRAJANJE: 1. 3. 2020 – 31. 7. 2020

FINANCIRANJE: Evropska unija – Evropski socialni sklad (ESS), Ministrstvo za izobraževanje, znanost in šport RS in Javni študentski, razvojni, invalidski in preživninski sklad RS

PARTNERJI: Titus, d. o. o., Dekani (Slovenija); InnoRenew CoE (Slovenija); študenti – štiri študenti UP FAMNIT (po en študent podiplomskega študijskega programa Računalništvo in informatika, dodiplomskega študijskega programa Bioinformatika, podiplomskega študijskega programa Podatkovna znanost, podiplomskega študijskega programa Varstvo narave), en študent UP FM (podiplomskega študijskega programa Management trajnostnega razvoja), en študent UP FVZ (podiplomskega študijskega programa Aplikativna kineziologija); delovna mentorja Danijel Kozlovič (Titus, d. o. o., Dekani), dr. Erwin M. Schau (InnoRenew CoE); pedagoška mentorja izr. prof. dr. Jernej Vičič (UP FAMNIT), izr. prof. dr. Andreja Kutnar (UP FAMNIT)



Graph Theory and Combinatorial Scientific Computing

This project will identify problems related to Combinatorial Scientific Computing in connection with graph theory. Optimization graph algorithms will be designed and implemented for solving these problems on massively parallel computers. A special focus of the research will be connecting applications and theory. Applications will come from various fields including combinatorial chemistry, system biology, market and portfolio analysis, engineering, the social sciences, biomaterialomics and applied mathematics. Although the project will have both theoretical and applied components, they will support each other. Applications will contain important practical problems (those typically simpler than problems in full generality), and theoretical research will attempt to yield results that can be applied to develop effective massively parallel procedures.

InnoRenew CoE project activities: The InnoRenew CoE team will develop scalable graph analytics methods that can be used for relevant applications such as computational biomaterialomics, optimization of sustainable buildings and circular economy markets. Developed methods will be evaluated on real data.

PROJECT LEADER:

Faculty of Computer and Information Science, University of Ljubljana / Miklós Krész, PhD (for InnoRenew CoE)

PERIOD:

01.01.2021 - 31.12.2023

FINANCING:

Slovenian Research Agency (ARRS)

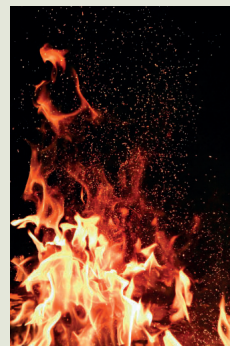
PARTNERS:

Faculty of Computer and Information Science, University of Ljubljana (Slovenia); InnoRenew CoE (Slovenia); Jožef Stefan Institute (Slovenia); Alfréd Rényi Institute of Mathematics (Hungary)

NOvel ModificatiOn tReatments to improvE wood resistance against FiRE (NOMOREFiRE)

NOMOREFiRE aims to improve wood resistance against fire through innovative surface modification treatments that replace harmful elements with natural or renewable compounds with lower toxicity. NOMOREFiRE will explore efficient wood surface pre-treatments in order to improve the applied solutions' retention and adhesion, extend service life and reduce final products' environmental impact. Performance of the coating products synthesized with tannin, treated lignin and inorganic nanoparticles, as well as the effect of short-term thermomechanical densification and low-temperature plasma treatments, will be evaluated by thermogravimetric analysis, flame-fire standard measurements and correlation of quality parameters with analytical data from modern non-destructive methods, specifically hyperspectral imaging and spectroscopy.

InnoRenew CoE project activities: InnoRenew CoE will prepare and characterize wood samples, formulate protective products, work on wood surface pre-treatments, apply novel protective treatments and characterize wood pre-treatment-coating interactions. After evaluating the coatings' thermal and fireproofing properties, InnoRenew CoE will make a comprehensive analysis of the whole process and product performance by modern, non-destructive methods and then exploit and disseminate results.



PROJECT LEADER:

René Alexander Herrera Díaz, PhD

PERIOD:

01.01.2021 - 31.12.2022

FINANCING:

Slovenian Research Agency (ARRS) - PHC Proteus program

PARTNERS:

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)

Teorija grafov in kombinatorično znanstveno računalništvo

Glavni cilj projekta je opredeliti probleme, ki nastajajo pri kombinatoričnem znanstvenem računalništvu v povezavi s teorijo grafov, in jih v računalniških z visoko vzporednostjo rešiti z oblikovanjem in implementiranjem algoritmov za optimizacijo grafov. Projekt se bo posebej posvetil povezovanju uporabnosti in teorije. Uporaba se navezuje na različna področja, kot so kombinatorna kemija, sistemska biologija, analiza trga, gradbeništvo, družboslovje, biomateriomika in uporabna matematika. Aplikativni in teoretični del projekta se bosta medsebojno dopolnjevala, saj so pri uporabi prisotni najpomembnejši dejanski problemi, teoretske raziskave pa obetajo rezultate, na podlagi katerih bi lahko razvili učinkovite postopke z visoko vzporednostjo.

Glavne dejavnosti InnoRenew CoE pri projektu: Raziskovalci v InnoRenew CoE bodo razvijali skalabilne metode za analizo grafov, ki bi jih lahko uporabili na ustreznih področjih, kot so računalniška biomateriomika, optimizacija trajnostne gradnje in trg krožnega gospodarstva. Razvite metode bodo ovrednotili na podlagi resničnih podatkov.

VODJA PROJEKTA: Fakulteta za računalništvo in informatiko, Univerza v Ljubljani /

dr. Miklós Krész (za InnoRenew CoE)

TRAJANJE: 1. 1. 2021 – 31. 12. 2023

FINANCIRANJE: Javna agencija za raziskovalno dejavnost Republike Slovenije (ARRS)

PARTNERJI: Fakulteta za računalništvo in informatiko, Univerza v Ljubljani (Slovenija); InnoRenew CoE (Slovenija); Institut »Jožef Stefan« (Slovenija); Inštitut za matematiko Alfréd Rényi (Rényi Alfréd Matematikai Kutatóintézet) (Madžarska)

Novi pristopi modifikacije lesa za izboljšanje odpornosti lesa proti požaru (NOMOREFiRE)

Namen projekta NOMOREFiRE je izboljšati odpornost lesa proti ognju z inovativnimi postopki površinske modifikacije, pri katerih škodljive prvine nadomestijo manj strupene naravne ali obnovljive sestavine. Projekt bo proučili učinkovito predhodno obdelavo površine lesa, da bi izboljšali uporabljene rešitve ter pripomogli k podaljšanju življenjske dobe in manjšemu vplivu končnih izdelkov na okolje. Učinkovitost zaščitnih izdelkov (premazni izdelki, sintetizirani s taninom, obdelani lignin in anorganski nanodelci) ter učinek predhodne obdelave lesene površine (kratkotrajna termomehanska zgostitev in obdelava z nizko temperaturo v plazmi) bosta ocenjena s termogravimetrično analizo, standardnimi meritvami plamenskega ognja ter korelacijo med kakovostnimi parametri in analitičnimi podatki, pridobljenimi s sodobnimi nedestruktivnimi metodami (hiperspektralnim slikanjem in spektroskopijo).

Glavne dejavnosti InnoRenew CoE pri projektu: InnoRenew CoE bo sodeloval pri pripravljanju in karakterizaciji vzorcev lesa, oblikovanju zaščitnih izdelkov, predhodnih obdelavah površin vzorcev lesa, uporabi novih zaščitnih postopkov ter karakterizaciji interakcij med predhodno obdelavo in prevleko lesa. Po oceni toplotnih in protipožarnih lastnosti prevleke bo InnoRenew CoE s sodobnimi nedestruktivnimi metodami izdelal celovito analizo postopka in učinkovitosti izdelka. Med projektom bo InnoRenew CoE poskrbel tudi za ozaveščanje javnosti in promocijo.

VODJA PROJEKTA: dr. René Alexander Herrera Díaz

TRAJANJE: 1. 1. 2021 – 31. 12. 2022

FINANCIRANJE: Javna agencija za raziskovalno dejavnost Republike Slovenije (ARRS) – Program PHC Proteus

PARTNERJI: InnoRenew CoE (Slovenija); Inštitut IPREM (Institut des Sciences Analytiques et de Physico-Chimie pour l'Environnement et les Matériaux – IPREM) na Univerzi v Pauu in Adourju (Université de Pau et des Pays de l'Adour) (Francija)

1	<p>Title / Naslov: Seismic analysis of tall timber buildings, BI-US/19-21-014</p> <p>Leader / Vodja: Iztok Šušteršič</p> <p>Period / Trajanje: 01.10.2019 - 30.09.2021</p> <p>Financing / Financiranje: Slovenian Research Agency (ARRS)</p> <p>Partners / Partnerji: InnoRenew CoE, Colorado School of Mines, Golden, CO</p>
2	<p>Title / Naslov: Design of multifunctional polysaccharide composite nanoparticles for deacidification, strength improvement and prevention of microbial attack of historical cellulose-based artifacts, J4-1764 ©</p> <p>Leader / Vodja: Mohan Tamilselvan (University of Maribor) / Matthew John Schwarzkopf (for InnoRenew CoE)</p> <p>Period / Trajanje: 01.07.2019 - 30.06.2022</p> <p>Financing / Financiranje: Slovenian Research Agency (ARRS)</p> <p>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</p>
3	<p>Title / Naslov: Strategies for improvement of energy efficiency of residential buildings through retrofitting, BI/BA-19-20-030</p> <p>Leader / Vodja: Anna Malgorzata Sandak</p> <p>Period / Trajanje: 15.01.2019 - 31.12.2021</p> <p>Financing / Financiranje: Slovenian Research Agency (ARRS)</p> <p>Partners / Partnerji: InnoRenew CoE; Faculty of Architecture, Civil Engineering and Geodesy, University of Banja Luka</p>
4	<p>Title / Naslov: Perceptions of, competencies, capacities and possibilities for the implementation of environment- and human health-friendly living environments, BI/BA-19-20-021</p> <p>Leader / Vodja: Andreja Kutnar</p> <p>Period / Trajanje: 15.01.2019 - 31.12.2021</p> <p>Financing / Financiranje: Slovenian Research Agency (ARRS)</p> <p>Partners / Partnerji: InnoRenew CoE, Institute for Protection and Ecology of the Republic of Srpska</p>
5	<p>Title / Naslov: Selective extraction of high value molecules from forest products processing residues in the speciality chemicals sector, J4-1767 ©</p> <p>Leader / Vodja: Andreja Kutnar</p> <p>Period / Trajanje: 01.07.2019 - 30.06.2022</p> <p>Financing / Financiranje: Slovenian Research Agency (ARRS)</p> <p>Partners / Partnerji: InnoRenew CoE (coordinator); Institut "Jožef Stefan"; ARHEL projektiranje inženiring d.o.o.; University of Ljubljana, Faculty of Pharmacy; University of Primorska, Andrej Marušič Institute</p>
6	<p>Title / Naslov: Spectroscopy and multivariate data analysis for quality control of modified wood, BI-IT/18-20-007</p> <p>Leader / Vodja: Anna Malgorzata Sandak</p> <p>Period / Trajanje: 01.09.2018 - 31.08.2021</p> <p>Financing / Financiranje: Slovenian Research Agency (ARRS)</p> <p>Partners / Partnerji: InnoRenew CoE, University of Modena and Reggio Emilia</p>

7	<p>Title / Naslov: Perception and performance assessment in bio-based architecture, BI-US/18-20-054</p> <p>Leader / Vodja: Anna Sandak Malgorzata</p> <p>Period / Trajanje: 01.10.2018 - 30.09.2020</p> <p>Financing / Financiranje: Slovenian Research Agency (ARRS)</p> <p>Partners / Partnerji: InnoRenew CoE; Oregon State University, Department of Wood Science and Engineering</p>
8	<p>Title / Naslov: Synchrotron-based analysis of densified wood impregnated with curing resins, BI-US/18-20-014</p> <p>Leader / Vodja: Matthew John Schwarzkopf</p> <p>Period / Trajanje: 01.10.2018 - 30.09.2020</p> <p>Financing / Financiranje: Slovenian Research Agency (ARRS)</p> <p>Partners / Partnerji: InnoRenew CoE, Forest Products Laboratory</p>
9	<p>Title / Naslov: Protection of bronze monuments in the changing environment, J7-9404</p> <p>Leader / Vodja: Ropret Polonca/ Jakub Sandak (for InnoRenew CoE)</p> <p>Period / Trajanje: 01.07.2018 - 30.06.2021</p> <p>Financing / Financiranje: Slovenian Research Agency (ARRS)</p> <p>Partners / Partnerji: Institute for the protection of Cultural Heritage of Slovenia (coordinator), InnoRenew CoE, Slovenian National Building and Civil Engineering Institute</p>
10	<p>Title / Naslov: Traversability of vertex-transitive graphs, J1-9110</p> <p>Leader / Vodja: Klavdija Kutnar / Kresz Miklos (for InnoRenew CoE)</p> <p>Period / Trajanje: 01.07.2018 - 30.06.2021</p> <p>Financing / Financiranje: Slovenian Research Agency (ARRS)</p> <p>Partners / Partnerji: University of Primorska, Andrej Marušič Institute (coordinator); InnoRenew CoE; University of Primorska, Faculty of Mathematics, Natural Sciences and Information Technologies; University of Ljubljana, Faculty of Education</p>
11	<p>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, Grant No.: 792050</p> <p>Leader / Vodja: Teknologisk Institut (DTI) (Denmark) / Matthew John Schwarzkopf (for InnoRenew CoE)</p> <p>Period / Trajanje: 01.05.2018 - 30.04.2021</p> <p>Financing / Financiranje: EU, Horizon 2020 - Bio-based Industries JU</p> <p>Partners / Partnerji: Teknologisk Institut DTI (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 SI, Tate & Lyle</p>
12	<p>Title / Naslov: Using questionnaires to measure attitudes and behaviours of buildings users, Z5-1879 (B)</p> <p>Leader / Vodja: Ana Slavec</p> <p>Period / Trajanje: 01.07.2019 - 30.06.2021</p> <p>Financing / Financiranje: Slovenian Research Agency (ARRS)</p> <p>Partners / Partnerji: InnoRenew CoE</p>

13

Title / Naslov: Boosting a novel and innovative tRAining approaCh of Key Enabling Technologies (BRACKET), 2018-1-HR01-KA202-047493

Leader / Vodja: Institut za razvoj i međunarodne odnose, Croatia /David Brian DeVallance (for InnoRenew CoE)

Period / Trajanje: 01.11.2018 - 30.04.2021

Financing / Financiranje: EU, Erasmus+

Partners / Partnerji: Institut Za Razvoj I Medunarodne Odnose (coordinator), Danmar Computers sp z o.o., Technologiko Ekpedeftiko Idryma Thessalias, Asociacion Empresarial De Investigacion Centro, Tecnológico Del MuebleyLa Madera De La Region De Murcia, Biedriba Eurofortis, Ljudska univerza Rogaška Slatina, Innorenew CoE

14

Title / Naslov: Pilots for Healthy and Active Ageing - Pharaon Scuola superiore di studi universitari e di perfezionamento

Leader / Vodja: Sant'Anna (Italy) / Michael David Burnard (for InnoRenew CoE)

Period / Trajanje: 01.12.2019 - 31.11.2023

Financing / Financiranje: EU, Horizon 2020

Partners / Partnerji: Sant'Anna (Coordinator), Hewlett Packard Italiana SRL, Fondenzone Casa Sollievo della Sofferenza, UP Umana Persone, CO-ROBOTICS SRL, Orthokey Italia SRL, Asociacion Empresarial de Investigacion Centro Tecnológico del Mueblay La Madera de La Region de Murcia, ServicioMurciano de Salud, Universidad Politecnica De Cartagena, My EnergiaOner SI, 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 Ipss, 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, Nacionalni Institut Za Javno Zdravje, Dom Upokojencev Izola - Casa del Pensionato Isola, Ericsson Nikola Tesla D.D., Ascora GmbH, Stellar 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, Druzba za Informacijsko Tehnologijo, Doo, Sentab Estonia Ou, Tallinna Tehnikaukool, Din Deutsches Institut Fuer Normung E.V., Uninfo - Associazione di Normazione Informatica

15

Title / Naslov: Underpinning the vital role of the forest-based sector in the Circular Bio-Economy - WoodCircus, Grant No.: 820892

Leader / Vodja: Teknologian tutkimuskeskus VTT Oy (Finland) / Michael David Burnard (for InnoRenew CoE)

Period / Trajanje: 01.11.2018 - 31.10.2021

Financing / Financiranje: EU, Horizon 2020

Partners / Partnerji: Teknologian tutkimuskeskus VTT Oy (coordinator), Institut TechnologiqueFCBA, the InnoRenew CoE, Nova-Institut GMBH, Fundacion Tecnalia Research & Innovation, Consorzio Del Mobile SCPA, ASBL, INNOVAWOOD, LUONNONVARAKESKUS, Sahateollisuus ry, AlfaNatura d.o.o., Asociación Baskegur, Consorzio Nazionale per la raccolta, il recupero e il riciclaggio degli imballaggi di legno - Rilegno, EGOIN SA, SAIB, Forest-Based Sector Technology Platform, European Panel Federation AISBL, Veolia France

Title / Naslov: Dynamic Response of Tall Timber Buildings under Service Load - DynaTTB

Leader / Vodja: RISE/ Research Institute of Sweden/ Iztok Šušteršič (for InnoRenew CoE)

Period / Trajanje: 01.03.2019 - 28.02.2022

Financing / Financiranje: European Union - ForestValue Research Programme & Ministry of Education, Science and Sport

Partners / Partnerji: RISE Research Institute of Sweden (coordinator), NTNU Norwegian University of Science and Technology, University of Exeter, University of Ljubljana, the 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

16

Title / Naslov: CLICK DESIGN delivering fingertip knowledge to enable service life performance specification of wood

Leader / Vodja: BRE (UK)/Jakub Sandak (for InnoRenew CoE)

Period / Trajanje: 01.03.2019 - 28.02.2022

Financing / Financiranje: European Union - ForestValue Research Programme & Ministry of Education, Science and Sport

Partners / Partnerji: BRE Building Research Establishment (coordinator), University of Goettingen, Lund University, VTT Technical Research Centre of Finland, the Innorenew CoE, Institute Technological FCBA, Norwegian Institute of Bioeconomy Research NIBIO, Research Institute for the Biology of Insect (IRBI), FPInnovations, and the company Hygiène Office

17

Title / Naslov: Wood and wood products over a lifetime - WOOLF, P20.03520

Leader / Vodja: M SORA, trgovina in proizvodnja, d.d. / Iztok Šušteršič (for InnoRenew CoE)

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) & Ministry of Education, Science and Sport

Partners / Partnerji: M SORA, trgovina in proizvodnja d.d. (principal consortium partner), Gozdarski inštitut Slovenije, 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, InnoRenew CoE

18

Title / Naslov: Wood chip technology for livestock heavy use areas to improve water quality, BI-US/19-21-114

Leader / Vodja: David Brian 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, Burlington, Vermont

19

Title / Naslov: Optimisation for sustainable supply chains, N1-0093

Leader / Vodja: Andreja Kutnar (for InnoRenew CoE) and Tamas Kis (for Institute for Computer Science and Control, Hungarian Academy of Sciences)

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

20

Grant applications

In 2020, InnoRenew CoE submitted 70 proposals. The total budget of all submitted proposals was €11,301,772.61. Currently, there are 20 pending proposals (six national, 14 international) with a potential budget for InnoRenew CoE of €4,950,621.12. For the remainder, there were 29 unsuccessful proposals (total of €6,056,325.49) and 21 successful proposals (total of €286,397.00) for InnoRenew CoE in 2020. Additionally, from grants submitted in 2019, InnoRenew CoE obtained one Horizon 2020 Marie Skłodowska-Curie Action individual fellowship (€150,040.32), two ARRS grants for bilateral cooperation with Austria (€6,250.00) and one ARRS grant for bilateral cooperation with Turkey (€6,800.00).

National

Forty-one proposals were submitted to national calls for a total budget of €2,174,545.48. From this, 39 proposals were submitted to the Slovenian Research Agency (ARRS). Most of these proposals involved basic and bilateral projects. Two postdoctoral project proposals and one open publications were submitted. In addition, InnoRenew CoE applied for reimbursement of eight projects submitted to Horizon 2020, and all were successful.

Two proposals were submitted as development projects: one to the Ministry of Agriculture, Forestry and Food and one to the Ministry of the Environment and Spatial Planning.

International

There were 29 international funding applications submitted for a total budget of €9,127,227.13. Nineteen of these applications were submitted to Horizon 2020, eight of which listed InnoRenew CoE as the coordinator including three Marie Skłodowska-Curie Actions. Other applications were submitted to the Erasmus+ program (three), different COST Action funding (four), IUFRO-EFi Young Scientists Initiative (one) and European Social Innovation competition (one).

Prijave na razpise

V letu 2020 je InnoRenew CoE na razpise prijavil 70 projektov. Skupna vrednost vseh oddanih vlog znaša 11.301.772,61 EUR. V evalvaciji je še 20 prijav (šest nacionalnih in 14 mednarodnih) v vrednosti 4.950.621,12 EUR za InnoRenew CoE. Devetindvajset prijav (v vrednosti 6.056.325,49 EUR) je bilo za InnoRenew CoE v letu 2020 neuspešnih, 21 predlogov pa je bilo odobrenih, in sicer v vrednosti 286.397 EUR.

Poleg tega je InnoRenew CoE iz projektnih prijav, oddanih v letu 2019, pridobil eno akcijo Marie Skłodowska-Curie Obzorja 2020 (150.040,32 EUR), dva bilateralna projekta ARRS z Avstrijo (6250 EUR)

Prijave na nacionalne razpise

Na slovenske razpise je bilo vloženih 41 predlogov za financiranje (v skupni vrednosti 2.174.545,48 EUR), od tega jih je bilo 39 vloženih na Javno agencijo za raziskovalno dejavnost RS (ARRS). Med prijavami na ARRS so prevladovale vloge za osnovne projekte, sledile so vloge za bilateralne projekte. Oddane so bile tudi dve prijavi za podoktorski projekt in ena prijava za odprte publikacije. Poleg tega je InnoRenew CoE zaprosil za povračilo stroškov za osem projektov, predloženih programu Obzorje 2020, in vsi so bili uspešni.

Preostala dva predloga za financiranje sta bila oddana kot razvojna projekta, in sicer eden na Ministrstvo za okolje in prostor in drugi na Ministrstvo za kmetijstvo, gozdarstvo in prehrano.

Prijave na mednarodne razpise

Raziskovalci InnoRenew CoE so prijavili 29 mednarodnih projektov (njihova skupna vrednost je 9.127.227,13 EUR). Devetnajst je bilo prijav na razpise v okviru programa Obzorje 2020. Pri osmih od njih je InnoRenew CoE zastopan kot koordinator projekta, vključno s prijavami na tri akcije Marie Skłodowska-Curie (MSCA). Poleg tega so bile tri prijave oddane na razpis v okviru programa Erasmus+, štiri na različne razpise akcije COST, ena prijava na IUFRO-EFi Young Scientists Initiative in ena prijava na tekmovanje European Social Innovation competition.

Infrastructure and laboratory equipment

Infrastructure

In 2020, construction of the InnoRenew CoE buildings in Izola, Slovenia, was carried out as planned.



1 Construction pit excavation
Izkop gradbene jame



2 Underlayment concrete under the basement
Podložni sloj betona pod kletno ploščo



3 Concrete floor slabs in the basement
and columns

Betonska talna plošča v kleti in stebri



4 Concrete slabs above the basement
Betonska plošča nad kletjo



5 Laboratories on the ground floor
Laboratoriji v pritličju



6 Lift shaft construction
Gradnja jaška za dvigalo



7 Installation of wooden walls and panels (1)
Montaža lesenih sten in plošč (1)



8 Installation of wooden walls and panels (2)
Montaža lesenih sten in plošč (2)

Infrastruktura in laboratorijska oprema

Infrastruktura

Izgradnja stavbnega kompleksa InnoRenew CoE v Izoli je v letu 2020 potekala po načrtu.



Installation of wooden walls and panels (3)
Montaža lesenih sten in plošč (3)

9



Installation of wooden walls and panels (4)
Montaža lesenih sten in plošč (4)

10



Completion of the building's
wooden assembly (1)
Zaključek montaže lesenega
dela objekta (1)

13



Completion of the building's
wooden assembly (2)
Zaključek montaže lesenega
dela objekta (2)

14



Installation of windows (1)
Montaža oken (1)

11



Installation of windows (2)
Montaža oken (2)

12



Steam barriers on the main roof
Parna zapora na glavni strehi

15



Moisture measurement in wooden
construction (1)
Meritve vlage v leseni konstrukciji (1)

16



Moisture measurement in wooden construction
Meritve vlage v leseni konstrukciji (2)

17



Installation of the main staircase (1)
Montaža glavnega stopnišča (1)

18



Installation of the main staircase (4)
Montaža glavnega stopnišča (4)

21



Completion of the building's wooden
roof window beams (1)
Zaključek montaže lesenih nosilcev
strešnega okna (1)

22



Installation of the main staircase (2)
Montaža glavnega stopnišča (2)

19



Installation of the main staircase (3)
Montaža glavnega stopnišča (3)

20



Completion of the building's wooden
roof window beams (2)
Zaključek montaže lesenih nosilcev
strešnega okna (2)

23



Installation of sensors for monitoring humidity
in wooden walls and façades
Montaža senzorjev za monitoring vlage
lesenih sten in fasade

24



Execution of concrete ceilings for ground floor laboratories
Izvedba betonskih stropov pritličnih laboratorijev

25



Sewer installation in the garage
Montaža kanalizacije v garaži

26



Start of construction for the second building
Začetek gradnje drugega objekta

29



First building at the beginning of December 2020
Prvi objekt, začetek decembra 2020

30



Installation of gypsum board partition walls
Montaža predelnih sten iz mavcnokartonskih plošč

27



Installation of ventilation and electricity
Montaža inštalacij (prezračevanje, elektrika)

28



Implementation of analysis and collection for wood waste generated at the construction site
Izvajanje analize in zbiranja odpadnega lesa, nastalega na gradbišču

31

Photos:
Eva Prelovšek Niemelä,
Aarne Niemelä

Fotografije:
Eva Prelovšek Niemelä,
Aarne Niemelä

Laboratory equipment

The investment project "Renewable Materials and Healthy Environments Research and Innovation Centre of Excellence" represents an investment in construction of infrastructure as well as 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 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 2020, 4 different softwares were purchased and 26 pieces of laboratory equipment for research use. In total 30 pieces of equipment was bought, including 4 items for the woodworking lab, 5 items for acoustics lab, 8 items for the characterization lab, 4 items for the human health in the built environment lab, 5 items for the renewable material composites lab, 2 items for physical testing and 2 items for microscopy lab.

Laboratory equipment purchased through the InnoRenew project in 2020
Laboratorijska oprema, pridobljena leta 2020 v okviru projekta InnoRenew

	Equipment / Oprema	Model / Model	Laboratory / Laboratorij
1	Cloud Platform for Education, Promotion, and Motivation in the field of Ergonomics (Software)	Version 2020	Human Health
2	Multi-Function Device for Built Environment	Ahlborn, B&K Precision and Almemo noise dosimeters	Human Health
3	3D Piezoelectric force plates	KISTLER Multicomponent Force Plate Type 9287C (two 900x600 mm plates)	Human Health
4	Isometric bilateral knee dynamometer		Human Health
5	Plasma unit	Roplass RPS40 Plus plasma unit	Composites
6	Pressure-Vacum Impregnation Vessel	Kambič VP-420	Composites
7	Injection molding machine	Thermo Scientific™ HAAKE™ Minijet Pro Piston Injection Molding System	Composites
8	Extruder	Thermo Scientific™ HAAKE™ Rheomex PTW 16 OS	Composites
9	Fire Safety Devices for Storage of liquids	EN32.196.120	Composites
10	Microtome Linear	WSL NR.8078 SCHENKUNG DAPPLES	Microscopy
11	Cross section holder kit	Leica EM TIC 3X Triple Ion Beam Milling System	Microscopy
12	3D Laser Scanner	Trimble X7	Physical Testing
13	Shaker - Long stroke	APS 400 ELECTRO-SEIS	Physical Testing
14	Contact Angle Tensiometer	Attension Theta Flex Auto 4 equipped with 3D Topography Module	Characterization
15	Termogravimetric Analyzer 801	Leco TGA801	Characterization

Laboratorijska oprema

Investicijski projekt »Center odličnosti za raziskave in inovacije na področju obnovljivih materialov in zdravega bivanjskega okolja« 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 2020 je bilo pridobljenih nekaj kosov različne programske opreme (štiri) in 26 kosov laboratorijske opreme, namenjene raziskovanju. Skupaj torej 30 kosov opreme in neopredmetene opreme, od tega štiri za mizarstvo delavnico, pet za laboratorij za akustiko, osem za laboratorij za karakterizacijo, štiri za laboratorij za raziskovanje zdravja ljudi, pet za laboratorij za kompozite, dva za laboratorij za fizikalno testiranje in dva za laboratorij za mikroskopiranje.

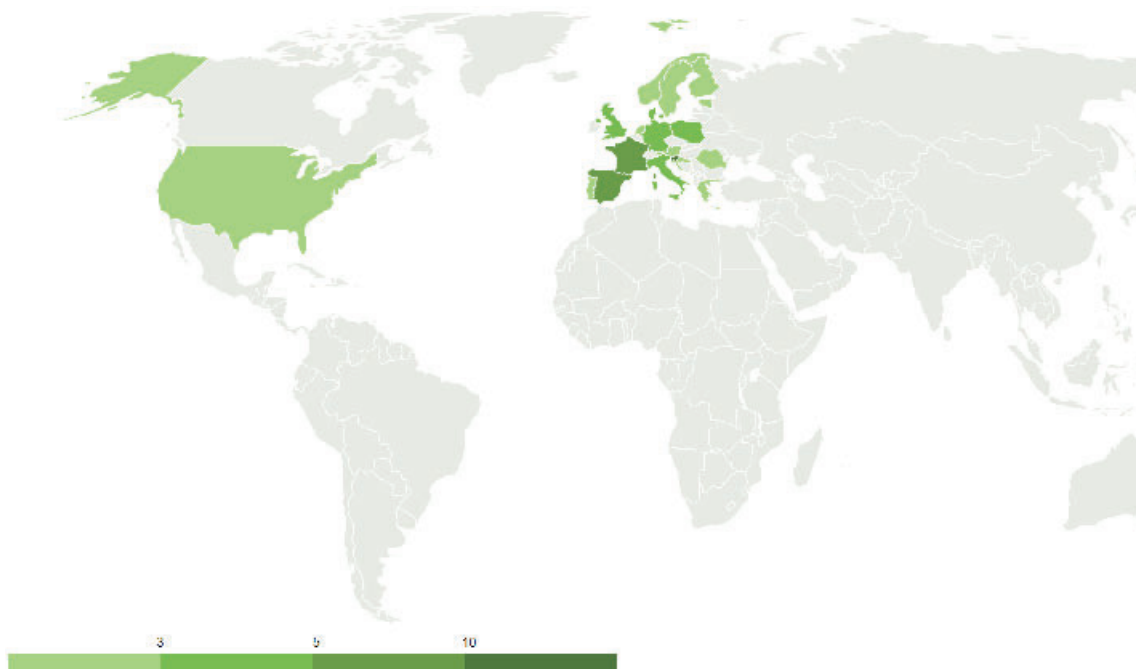
Equipment / Oprema	Model / Model	Laboratory / Laboratorij	
Elemental Analyzer CHNS/O	Thermo Scientific™ FlashSmart™ Elemental Analyzer	Characterization	16
PH Meter	Thermo Scientific™ Orion™ Versa-Star Pro™ meter with IS-68X591206-B-VSTAR pH/LogR module	Characterization	17
LCR Meter	B&K Precision Bench LCR Meter Model 895	Characterization	18
DC Voltage supplies	Keithley 2230G Multi-Channel Programmable DC Power Supply	Characterization	19
EigenVector - License with 2 year maintenance (Software)	PLS_Toolbox 8.8 and MIA_Toolbox 3.0	Characterization	20
AutoCAD (2 pieces) - Lease license for 3 years (Software)	Autodesk AutoCAD 2020	Characterization	21
Acoustic camera	Brüel & Kjær BK Connect Acoustic Camera Type 9712; Brüel & Kjær Sliced Wheel Array WA-1558-W	Acoustics	22
Building and architectural acoustic measurement set	mh acoustics em32 Eigenmike microphone array; Genelec 8020D/7380A 64/96 channel HOA reproduction system; Neuman KU 100 dummy head microphone; DPA 6060 binaural microphones; NTi Audio XL2 Audio and Acoustic Analyzer; NTi Audio DS3 Dodecahedron Speaker; NTi Audio TalkBox; NTi Audio TM3 Tapping Machine	Acoustics	23
Structural dynamics measurement system	Brüel & Kjær Piezoelectric CCLD Accelerometer Type 4507; Brüel & Kjær Modal Exciter Type 4825; Brüel & Kjær Modal Sledge Hammer Type 8208; Polytec PDV-100 Portable Digital Vibrometer	Acoustics	24
Set for acoustic (dynamic) material testing	Brüel & Kjær Transmission Loss Tube Kit Type 4206-T	Acoustics	25
Software for room acoustics and sound insulation simulation	ODEON Room Acoustics Software V15, Auditorium, with COMSOL Acoustic module, AMFG EASE Standard+AURA, AMFG SOUND FLOW	Acoustics	26
Chamber - Standard Climatic 50L	Kambič, KK-50 CH	Workshop and Machine Shop	27
Chamber - Low Temperature Climatic 1000L	Kambič, KK-1000 CHLT	Workshop and Machine Shop	28
Mill - Grinders	FRITSCH Power Cutting Mill PULVERISETTE 25; FRITSCH Universal Cutting Mill PULVERISETTE 19	Workshop and Machine Shop	29
Mill - Planetary	FRITSCH Planetary Mill PULVERISETTE 5 premium line	Workshop and Machine Shop	30

Industrial collaboration

In 2020, InnoRenew CoE collaborated with 76 partners from industry via projects or directly. More than a third were from Slovenia and a large number were from Spain, France and Italy. Most industry partners operated within the wood, information technology and agricultural sectors. There were 20 direct industrial collaborators, which is a significant increase from 2019.

InnoRenew CoE added two additional research projects with industrial partners in 2020, namely "Functionality and Environmental Suitability of the Door Closure System (FOUSIJA)" and "Development of new practices for forest property management and strengthening of all its functions", both in collaboration with Slovenian companies.

Locations of InnoRenew CoE Industrial partners. Image InnoRenew CoE
Lokacije Industrijskih partnerjev InnoRenew CoE. Foto: InnoRenew CoE



Sodelovanje z industrijo

V letu 2020 je InnoRenew CoE sodeloval s 76 industrijskimi partnerji, bodisi neposredno ali preko konzorcijskih projektov. Več kot tretjina vseh industrijskih partnerjev je bila iz Slovenije, največ mednarodnih industrijskih partnerjev pa iz Španije, Francije in Italije. Z 20 industrijskimi partnerji je InnoRenew CoE sodeloval neposredno, kar je znatno povečanje v primerjavi z letom 2019. Večina industrijskih partnerjev iz leta 2020 deluje na področjih lesarstva, IKT ali kmetijstva.

Poleg že obstoječih raziskovalnih projektov je InnoRenew CoE v letu 2020 pridobil še dva nova raziskovalna industrijska projekta z industrijskimi partnerji iz Slovenije. To sta projekta Funkcionalnost in Okoljska Ustreznost Sistemov zapiranJA vrat - FOUSIJA ter Razvoj novih praks za upravljanje gozdnih posesti in krepitev vseh njegovih funkcij.



Industrial partners
Industrijski partnerji

	Industrial partner / Industrijski partner	Country / Država	Type of collaboration / Vrsta sodelovanja	Sector / Področje
1				
2	Arhel D.O.O.	Slovenia	National	Technology
3	Kmetija Jernejevi	Slovenia	National	Agriculture
4	Kmetija Volk	Slovenia	National	Agriculture
5	Kmetija Žustovi	Slovenia	National	Agriculture
6	L-Tek D.O.O.	Slovenia	National	Manufacturing
7	M Sora D.D.	Slovenia	National	Wood
8	Marko Mahne - Nosilec Dopolnilne Dejavnosti Na Kmetiji	Slovenia	National	Agriculture
9	Morelj, Proizvodnja In Razvoj, D.O.O.	Slovenia	National	Manufacturing
10	Rem D.O.O.	Slovenia	National	Manufacturing
11	Stritih D.O.O.	Slovenia	National	Consulting
12	Tamara Urbančič S.P.	Slovenia	National	Education
13	Titus D.O.O. Dekani	Slovenia	National	Manufacturing
14	Xlab D.O.O.	Slovenia	National	ICT
15	Ericsson Nikola Tesla D.D.	Croatia	International	ICT
16	Agro Business Park As	Denmark	International	Agriculture
17	Emmelev As	Denmark	International	Chemical
18	Tailorzyme Aps	Denmark	International	Agriculture
19	Sentab Estonia Ou	Estonia	International	ICT
20	Sahateollisuus Ry	Finland	International	Wood
21	Arbonis	France	International	Construction
22	Domalys Sas	France	International	Consulting
23	Eiffage Immobilier Sud Ouest	France	International	Services
24	Galeo	France	International	Construction
25	Hygiene Office	France	International	Biotechnology
26	Veolia Propre	France	International	Energy
27	Vertech Group	France	International	Consulting
28	Ascora Gmbh	Germany	International	ICT
29	Gea Westfalia Separator Group Gmbh	Germany	International	Services
30	Mars Gmbh	Germany	International	Food
	Chimar Hellas Ae	Greece	International	Wood

Industrial partner / Industrijski partner	Country / Država	Type of collaboration / Vrsta sodelovanja	Sector / Področje	
				31
Co-Robotics Srl	Italy	International	ICT	32
Hewlett Packard Italiana Srl	Italy	International	ICT	33
Orthokey Italia Srl	Italy	International	Health	34
Saib S.P.A.	Italy	International	Wood	35
Adsysco Bv	Netherlands	International	Consulting	36
Maastricht Instruments Bv	Netherlands	International	Technology	37
Moelven Limtre As	Norway	International	Wood	38
Sweco Norge As	Norway	International	Chemical	39
Danmar Computers	Poland	International	ICT	40
Glintt Healthcare Solutions Sa	Poland	International	Consulting	41
Alfa Natura D.O.O.	Slovenia	International	Wood	42
Franka Marzi S.P.	Slovenia	International	Food	43
Jelovica, D.O.O.	Slovenia	International	Wood	44
Senlab D.O.O.	Slovenia	International	ICT	45
Anecoop Sociedad Cooperativa	Spain	International	Agriculture	46
Egoín Sa	Spain	International	Wood	47
Eurizon Sl	Spain	International	Agriculture	48
Indra Sistemas Sa	Spain	International	Logistics	49
My Energia Oner Sl	Spain	International	Energy	50
Natac Biotech Sl	Spain	International	Food	51
Olivar De Segura	Spain	International	Food	52
Robotnik Automation Sll	Spain	International	Robotics	53
Moelven Toreboda Ab	Sweden	International	Wood	54
G. C. Hahn And Company Limited	United Kingdom	International	Food	55
Information Catalyst For Enterprise Ltd	United Kingdom	International	ICT	56
Smith And Wallwork Engineers Ltd	United Kingdom	International	Construction	57
Metadynea Austria Gmbh	Austria	Direct Collaboration	Chemicals	58
Monton Mms D.O.O.	Croatia	Direct Collaboration	Investment	59
Fiberdom Oy	Finland	Direct Collaboration	Wood	60
Feniks Zakład Produkcji Mebli Sp.Zo.O.	Poland	Direct Collaboration	Manufacturing	61
Mardom Pro	Poland	Direct Collaboration	Manufacturing	62
Kronospan Trading Srl	Romania	Direct Collaboration	Wood	

	Industrial partner / Industrijski partner	Country / Država	Type of collaboration / Vrsta sodelovanja	Sector / Področje
63	Epr D.O.O.	Slovenia	Direct Collaboration	Communication
64	Frtica, D.O.O.	Slovenia	Direct Collaboration	Food
65	Lesarski Grozd	Slovenia	Direct Collaboration	Wood
66	Lesnina Mg Oprema, D.D., Ljubljana	Slovenia	Direct Collaboration	Engineering
67	Lumar Ig D.O.O.	Slovenia	Direct Collaboration	Civil Engineering
68	Monetic D.O.O.	Slovenia	Direct Collaboration	Real Estate
69	Navitas D.O.O.	Slovenia	Direct Collaboration	Civil Engineering
70	Prinsis D.O.O.	Slovenia	Direct Collaboration	Electrical Systems
71	Riko Hiše D.O.O.	Slovenia	Direct Collaboration	Civil Engineering
72	Rtv Slovenija	Slovenia	Direct Collaboration	Media
73	Spirit Slovenija, Javna Agencija	Slovenia	Direct Collaboration	Service
74	Vg5 D.O.O.	Slovenia	Direct Collaboration	Civil Engineering
75	Prescouter	United States of America	Direct Collaboration	Consulting
76	VELUX A/S	Denmark	Direct Collaboration	Window producer

Living Lab InnoRenew

Živi laboratorij InnoRenew

In 2020, Living Lab InnoRenew had 116 members from 29 countries (57 SMEs, 50 educational or research institutes, five regional development agencies and four individuals).

Living Lab InnoRenew offers activities and services according to membership status: gold, silver or associate. Currently, Living Lab InnoRenew has ten gold members, two silver members and 104 associates.

Ob koncu leta 2020 ima Živi laboratorij InnoRenew 116 članov iz 29 držav. Od teh je 57 nacionalnih in mednarodnih malih in srednje velikih podjetij, 50 nacionalnih in mednarodnih izobraževalnih ustanov in raziskovalnih organizacij, pet regionalnih razvojnih agencij in štirje zainteresirani posamezniki.

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 deset zlatih članov in dva srebrna, drugi pa so pridruženi člani.



RRA LUR



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Events

In 2020, event organization was marked by the COVID-19 pandemic. Nevertheless, InnoRenew CoE successfully organized and co-organized 14 events, including workshops, meetings, 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 2020
Dogodki, ki jih je organiziral InnoRenew CoE v letu 2020

	Event / Dogodek	Type / Vrsta dogodka	Location / Lokacija	Date / Datum
1	Research data management for renewable materials and products	Workshop	Koper, Slovenia	09.01.2020
2	Partners meeting	Presentation and progress report	Koper, Slovenia	13.01.2020
3	InnoRenew CoE anniversary	Ceremony	Izola, Slovenia	12.02.2020
4	University of Maribor new infrastructure	Ceremony	Maribor, Slovenia	02.03.2020
5	Second periodic review by the European Commission	Presentation and review	Online	08.06.2020
6	Predicting service life performance of timber structures: Durability and aesthetics	Workshop	Online and Koper, Slovenia	17.06.2020
7	Representatives from the Republic of Slovenia's Ministry of Education, Science and Sport	Presentation and tour	Koper and Izola, Slovenia	19.06.2020
8	Frames of Science	Exhibition	Online and Izola, Slovenia	10.07.2020 - 30.07.2020
9	Society of Wood Science and Technology (SWST) 63rd International Convention	International conference	Online	12.07.2020 - 15.07.2020
10	InnoRenew CoE complex groundbreaking	Ceremony	Izola, Slovenia	17.07.2020
11	InnoRenew CoE International Conference 2020: Integrating sustainability and health in buildings through renewable materials	International conference	Online and Izola, Slovenia	03.09.2020
12	Charm of Wood in Koper	Exhibition	Koper, Slovenia	08.09.2020
13	Partners meeting	Presentation and progress report	Online and Koper, Slovenia	14.09.2020
14	Living Lab: Presentation of InnoRenew CoE's laboratories	Living Lab	Online	18.12.2020

Organizirani dogodki

V letu 2020 je na organizacijo dogodkov močno vplival potek pandemije covid-19. Kljub temu je InnoRenew CoE uspešno organiziral in soorganiziral 14 dogodkov, med katerimi so bili delavnice, srečanja, posebne prireditve, razstave, slovesnosti projektnih partnerjev in dve mednarodni konferenci. Nekaj dogodkov je potekalo v živo, nekaj po spletu in nekaj s kombinacijo obojega.

On 12 February 2020, we celebrated our third anniversary with a special event, where a letter of intent was signed for planting 3000 oak trees in Izola, Slovenia, and thus committing to the principles of sustainable development and sustainable management of natural resources. The event was attended by Ministry representatives Dr. Aleksandra Pivec, at that time Minister of Agriculture, Forestry and Food, Dr. Jernej Pikalo, at that time Minister of Education, Science and Sport, and by the Mayor of the Municipality of Izola, Danilo Markočič.

InnoRenew CoE je 12. februarja 2020 praznoval svojo tretjo obletnico obstoja s posebnim dogodkom – s podpisom pisma o nameri posaditve 3000 dreves v Izoli. Inštitut se je s tem še bolj zavezal načelom trajnostnega razvoja in trajnostnega upravljanja z naravnimi viri. Dogodka so se udeležili tudi dr. Aleksandra Pivec, takratna ministrica za kmetijstvo, gozdarstvo in prehrano, dr. Jernej Pikalo, takratni minister za izobraževanje, znanost in šport, ter izolski župan Danilo Markočič.



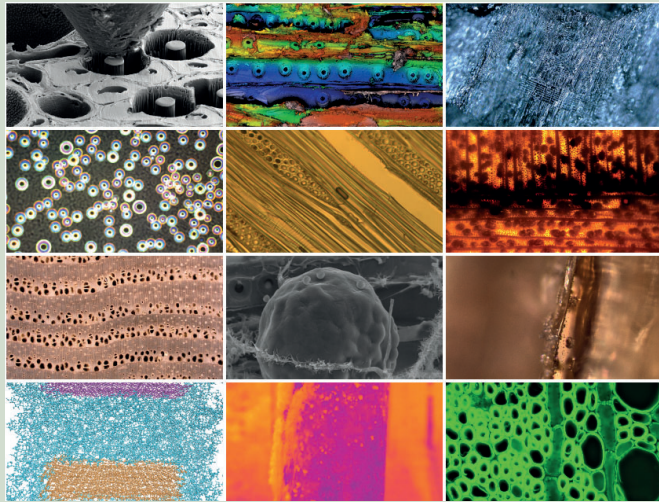
Ceremony for the intent of planting 3000 oak trees in different areas of Izola, Slovenia. From left to right: Dr. Jernej Štromajer, Danilo Markočič, Dr. Jernej Pikalo, Dr. Andreja Kutnar, Dr. Aleksandra Pivec, Zlatko Ficko and Denis Bele. Image: Alen Ježovnik

Dogodek ob nameri posaditve 3000 hrastov na različnih lokacijah v Izoli. Na fotografiji z leve: dr. Jernej Štromajer, Danilo Markočič, dr. Andreja Kutnar, dr. Aleksandra Pivec, Zlatko Ficko in Denis Bele. Foto: Alen Ježovnik

“ We are aware that for construction of our new building in Izola, we will use a lot of wood, precisely 870 cubic meters, but we are also aware that in sustainably managed forests, such as Slovenian forests, in one year enough trees will grow so that we could build almost 3000 such buildings.

Zavedamo se, da se bo za gradnjo naše nove stavbe porabilo 870 kubičnih metrov lesa, in vemo tudi, da bo v slovenskih gozdovih, s katerimi se trajnostno gospodarimo, v enem letu zrastle toliko dreves, da bi lahko zgradili še skoraj 3000 takih stavb.

Dr. Andreja Kutnar
InnoRenew CoE director
direktorica InnoRenew CoE



Exhibited pictorial moments from research on wood and other renewable materials. Image: InnoRenew CoE

Razstavljeni posnetki, narejeni med raziskavami lesa in drugih obnovljivih materialov. Foto: InnoRenew CoE

We also organized the first edition of Frames of Science, which was exhibited outdoors in July in Izola, Slovenia; at the same time, it was published online where voting for favourite images took place.

Prvič smo organizirali tudi razstavo Okviri znanosti, ki je bila na ogled v mesecu juliju na prostem v Izoli in hkrati na spletni strani, kjer je bilo možno za najljubše fotografije tudi glasovati.

InnoRenew CoE's exhibition "Frames of Science" shows images and drawings related to wood and other renewable materials research. Researchers document phases of their scientific work and experimental results with images and drawings, with astonishing structures, compositions and colours that can easily be seen as art. The exhibition is thus entering science through this aesthetic door and leaves reflection on the relationship between science and art entirely up to the viewer. The picture that received the most votes is the cover photo of this annual report.

Razstava Okviri znanosti prikazuje gradivo, povezano z lesom in drugimi obnovljivimi materiali. Različne stopnje raziskav in rezultate eksperimentov raziskovalci pri svojem delu pogosto dokumentirajo s posnetki, ki imajo osupljive strukture, kompozicije in barve. Te podobe lahko marsikoga spominjajo na umetnost, zato razstava gledalce nagovarja k premisleku o razmerju med znanostjo in umetnostjo. Fotografija, ki je prejela največ glasov, je tudi naslovna fotografija tokratnega letnega poročila.

For the fourth 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 September 2020. 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 četrto leto zapored je InnoRenew CoE soorganiziral potujoči del razstave Čar lesa. Ta je bila na ogled v prostorih Univerze na Primorskem v mesecu septembru. Čar lesa že več kot desetletje promovira in spodbuja rabo lesa in lesenih izdelkov ter ozavešča o trajnostnem vidiku rabe tega naravnega materiala.



Some of the exhibited wooden products at the Charm of Wood 2020 traveling exhibition. Image: University of Primorska

Nekaj razstavljenih lesenih izdelkov na potujočem delu razstave Čar lesa 2020. Foto: Univerza na Primorskem

“ Even if the University of Primorska is the youngest and the smallest public university in Slovenia, wood science and sustainable construction represents important pillars of our development.

Kljub temu, da je Univerza na Primorskem najmlajša in najmanjša javna univerza v Sloveniji, predstavljata lesarstvo in trajnostna gradnja nosilna stebra našega razvoja.

”

Dr. Klavdija Kutnar

University of Primorska rector
rektorica Univerze na Primorskem



The ceremony was attended by (from the left) Dr. Jernej Štromajer, at that time Ministry of Education, Science and Sport state secretary, Dr. Andreja Kutnar, InnoRenew project leader, and Dr. Zdravko Kačič, University of Maribor rector. Image: University of Maribor

Dogodka so se udeležili tudi (z leve) dr. Jernej Štromajer, takratni državni sekretar Ministrstva za izobraževanje, znanost in šport, dr. Andreja Kutnar, vodja projekta InnoRenew in dr. Zdravko Kačič, rektor Univerze v Mariboru. Foto: Univerza v Mariboru

One of the InnoRenew project partners—University of Maribor—completed its infrastructure investments and organized official opening and presentation of new laboratories and equipment purchased with European funds from the Horizon 2020 programme, the European Regional Development Fund and co-financing from the Republic of Slovenia’s Ministry of Education, Science and Sport.

Univerza v Mariboru, eden od partnerjev projekta InnoRenew, je leta 2020 uspešno izpeljala investicijo v infrastrukturo. Ob tej priložnosti je organizirala uradno odprtje novih laboratorijev in opreme, pridobljene s sredstvi iz programa Obzorje 2020 in iz Evropskega sklada za regionalni razvoj ter s sofinanciranjem Republike Slovenije (Ministrstvo za izobraževanje, znanost in šport).

On 2 March 2020, the University of Maribor officially opened the doors of its new laboratory housing state-of-the-art equipment. Innovative materials from renewable sources will be developed here. These materials can then be used in engineering, wood and polymer industries.

Na Univerzi v Mariboru so 2. marca 2020 slovesno odprli nov raziskovalni laboratorij z vrhunsko opremo. V laboratoriju bodo razvijali inovativne materiale iz obnovljivih virov, ki jih uporabljajo predvsem na področjih gradbeništva ter lesne in polimerne industrije.

We organized also two international conferences. From 12-15 July 2020 InnoRenew CoE, in collaboration with University of Primorska, hosted the online Society of Wood Science and Technology (SWST) 63rd International Convention. The online convention brought together 656 registered participants from 58 countries.

InnoRenew CoE je organiziral tudi dve mednarodni konferenci. Od 12. do 15. julija 2020 je v sodelovanju z Univerzo na Primorskem gostil 63. mednarodni kongres združenja za znanost o lesu in tehnologijo SWST (The Society of Wood Science and Technology), ki je tokrat prvič potekal po spletu. Na kongres se je prijavilo 656 udeležencev iz 58 držav.



Opening ceremony of the online SWST conference. Image: University of Primorska

Prvi kongresni dan. Foto: Univerza na Primorskem

“ We didn’t get to meet with our distant friends and colleagues at Slovenia’s coast, but I think the conference went well. We made an impact by hosting a successful event and will get to hold the in-person conference in Slovenia in 2024.

Tokrat nam ni uspelo, da bi se srečali s prijatelji in kolegi z vsega sveta na slovenski obali, vseeno pa mislim, da je bil kongres uspešen. Naredili smo dober vtis, saj smo gostili kakovosten dogodek, s tem pa postavili temelje za srečanje v Sloveniji v živo, za kar bo priložnost že leta 2024. ”

Dr. Michael Burnard

InnoRenew CoE deputy director
namestnik direktorice InnoRenew CoE



The celebratory event ended with creation of a wooden tree, which symbolizes that the key to success is cooperation, partnerships and joint efforts for progress. From left to right: Zdravko Počivalšek, Dr. Andreja Kutnar, Dr. Simona Kustec and Danilo Markočič.
Image: University of Primorska

Dogodek se je zaključil s sestavljanjem lesenega drevesa, s katerim so na simbolni ravni prikazali, da je ključ za uspeh v sodelovanju, partnerstvih in skupnih prizadevanjih za napredek. Na fotografiji z leve: Zdravko Počivalšek, dr. Andreja Kutnar, dr. Simona Kustec in Danilo Markočič.
Foto: Univerza na Primorskem

On 17 July 2020, InnoRenew CoE celebrated the start of construction for the largest wooden building in Slovenia with a groundbreaking ceremony in Livade, Izola. Danilo Markočič, Municipality of Izola's mayor, Zdravko Počivalšek, Minister of Economic Development and Technology, and Dr. Simona Kustec, Minister of Education, Science and Sport, attended the celebratory event.

InnoRenew CoE je v izolskih Livadah 17. julija 2020 s slavnostnim dogodkom proslavil začetek gradnje novega stavbnega kompleksa inštituta, ki bo hkrati tudi največja lesena zgradba v Sloveniji. Dogodka so se udeležili tudi izolski župan Danilo Markočič, ministrica za znanost, izobraževanje in šport dr. Simona Kustec ter minister za gospodarski razvoj in tehnologijo Zdravko Počivalšek.

“ Our new wooden building will become a crossroads of efforts to transfer research knowledge into industrial practice as we will be able to effectively connect research and development, equipment and knowledge with the development capacities of the wood industry and other related industries in one place.

Naša nova lesena zgradba bo postala stičišče prizadevanj za prenos raziskovalnega znanja v industrijsko prakso, saj bomo lahko na enem mestu učinkovito povezali raziskovalno in razvojno opremo in znanje z razvojnimi kapacitetami lesne industrije in drugih z njo povezanih industrij.

Dr. Andreja Kutnar

InnoRenew CoE director
direktorica InnoRenew CoE

“ I am convinced that the InnoRenew CoE and their construction project is a good example of a lasting and sustainable breakthrough of the Slovenian economy. Slovenia can find its place under the sun only with knowledge and commitment to new, more advanced models of social and economic development.

Prepričan sem, da je raziskovalni in gradbeni projekt inštituta InnoRenew CoE dober primer trajnega in trajnostnega preboja slovenskega gospodarstva. Slovenija lahko najde svoje mesto pod soncem samo z znanjem in zavezanostjo novim, naprednejšim modelom družbenega in gospodarskega razvoja.

Zdravko Počivalšek

Minister of Economic Development and Technology
minister za gospodarski razvoj in tehnologijo

The InnoRenew CoE International Conference 2020, “Integrating sustainability and health in buildings through renewable materials”, was held both in-person and online on 3 September 2020. The conference hosted 32 speakers across three thematic sessions and a poster presentation; some speakers joined the conference in-person while others participated online. Carlo Battisti, President of Living Future Europe, was the keynote speaker. In his speech, he connected the concept of health, transparent living and the quiet revolution of materials.

Mednarodna konferenca InnoRenew CoE 2020 »Z obnovljivimi materiali do trajnostnih in zdravih zgradb« je potekala 3. septembra 2020 tako v živo kot po spletu. V treh sklopih konference in na predstavitvah posterjev je nastopilo 32 govornikov, nekateri so se konference udeležili osebno, nekaj pa se jih je pridružilo po spletu. Glavni govornik na konferenci je bil Carlo Battisti, predsednik organizacije Living Future Europe. V svojem govoru je povezal koncepte zdravja in transparentnega življenja ter tihe revolucije materialov.



InnoRenew CoE International Conference 2020, “Integrating sustainability and health in buildings through renewable materials”.
Image: Amy Simmons

Mednarodna konferenca InnoRenew CoE 2020 »Z obnovljivimi materiali do trajnostnih in zdravih zgradb«.
Foto: Amy Simmons

“ I am very happy to be part of this conference and to notice that there is an increasing emphasis on human health and an introduction of nature in inside/outside building environments.

Veseli me, da sem sodeloval na konferenci in da je pri gradnji vse večji poudarek na zdravju ljudi in vnašanju narave v notranje/zunanje okolje stavb.

Dean Lipovac

InnoRenew CoE assistant researcher
raziskovalni asistent v InnoRenew CoE

In 2020, two InnoRenew CoE employees received awards that recognized the quality and importance of their work.

Dr. Veerapandian Ponnuchamy, InnoRenew CoE researcher, was a recipient of the 2020 Ron Cockcroft Award (RCA) given by the International Research Group on Wood Protection (IRG).

Dr. Veerapandian Ponnuchamy, raziskovalec v InnoRenew CoE, je bil med prejemniki nagrade Ron Cockcroft Award 2020 (RCA), ki jo je podelila mednarodna raziskovalna skupina za zaščito lesa - The International Research Group on Wood Protection.

IRG51 Webinar
June 10-11, 2020

Ron Cockcroft Award recipients



Dr. Veerapandian Ponnuchamy receiving the 2020 RCA. Image: InnoRenew CoE

Dr. Veerapandian Ponnuchamy je prejel nagrado RCA 2020. Foto: InnoRenew CoE

Leta 2020 sta dva zaposlena na InnoRenew CoE prejela nagradi, ki dokazujeta kakovost in pomembnost njihunega dela.

Faksawat Poohphajai, InnoRenew CoE assistant researcher, received third place in the 63rd SWST International Convention's Student Poster Competition.

Faksawat Poohphajai, raziskovalna asistentka v InnoRenew CoE, je na študentskem tekmovanju za najboljše posterje, predstavljene na 63. mednarodnem kongresu SWST, zasedla tretje mesto.

Faksawat Poohphajai's poster, 63rd SWST International Convention. Image: Faksawat Poohphajai

Poster, ki ga je Faksawat Poohphajai predstavila na 63. mednarodnem kongresu SWST. Foto: Faksawat Poohphajai

Dissemination and outreach

Dissemination

In 2020, a year marked by virtual events, InnoRenew CoE employees attended and presented at 48 international conferences and 12 national conferences. In-person events took place in Slovenia, Italy and the United States.

InnoRenew CoE employee international conference participation in 2020
Udeležba zaposlenih na mednarodnih konferencah v letu 2020

	Employee / Zaposleni	Conference / Ime konference	Location / Lokacija	Date / Datum	
1	Iztok Šušteršič	CasaClima Congress	Bolzano, Italy	21.01.2020-22.01.2020	
2	David B. DeVallance	2020 AIEA Annual Conference	Washington, D.C., USA	16.02.2020-19.02.2020	
3	Amy Simmons, Elizabeth Dickinson, Lea Primožič	Content Marketing Conference CMC 2020	Online	21.04.2020	
4	Matthew Schwarzkopf	BBI JU Virtual Info Day 2020	Online	22.04.2020	
5	Michael Burnard	WoodCircus Virtual General Assembly	Online	26.04.2020	
6	David B. DeVallance	Brokerage Event: Boosting technology transfer in Central Europe	Online	07.05.2020	
7	Vesna Starman	2nd Pan-European Conference on Distance Teaching: Learning from Best Practice	Online	28.05.2020	
8	Veerapandian Ponnuchamy	1st Virtual Conference, "New directions for modeling nanocrystal catalysts"	Online	07.06.2020	
9	Vesna Starman	Simulation World 2020	Online	10.06.2020-11.06.2020	
10	Anna Sandak, Veerapandian Ponnuchamy	International Research Group on Wood Protection IRG 51	Online	10.06.2020-11.06.2020	
11	Kaja Kastelic	Prospective Physical Activity, Sitting and Sleep Consortium ProPASS 3rd Annual Meeting	Online	15.06.2020-16.06.2020	
12	Ana Slavec	Research Data and European Open Science Cloud	Online	18.06.2020	
13	Vesna Starman	3rd Pan-European Conference on Distance Teaching: Learning from Best Practice	Online	18.06.2020	
14	Kaja Kastelic	INTUE 2020 Annual General Meeting	Online	23.06.2020	

Razširjanje rezultatov in obveščanje

Razširjanje rezultatov

V letu 2020, v katerem so prevladovali dogodki, ki so potekali po spletu, so se zaposleni v InnoRenew CoE udeležili 48 mednarodnih in 12 nacionalnih konferenc. Dogodki, ki so potekali v živo, so bili organizirani v Sloveniji, Italiji in ZDA.

Employee / Zaposleni	Conference / Ime konference	Location / Lokacija	Date / Datum	
Michael Burnard, Matthew Schwarzkopf	InnovaWood General Assembly	Online	08.07.2020	15
Sidra Aslam, David B. DeVallance, Igor Gavrič, Eva Prelovšek Niemelä, Jakub Sandak, Erwin M. Schau, Václav Sebera, Michael Burnard, Laetitia Marrot, Jaka Pečnik, Dean Lipovac, Aarne Johannes Niemelä, Anna Sandak, Matthew Schwarzkopf, Faksawat Poohphajai, Vesna Starman, Andreja Kutnar, Gertrud Fabian, Lea Primožič, Amy Simmons, Elizabeth Dickinson, Tine Šukljan	SWST 2020 Virtual Convention	Online	12.07.2020-15.07.2020	16
Roberto Biloslavo	International Summit on Collaborative Experiences University-Industry Interaction Conference 2020	Online	13.07.2020	17
David B. DeVallance, Matthew Schwarzkopf	Forest Products Society 74th International Convention	Online	27.07.2020-31.07.2020	18
Vesna Starman	4th Pan-European Conference on Distance Teaching: Learning from Best Practice	Online	30.07.2020	19
László Hajdú, Miklós Krész	Modern Approaches in Data Engineering and Information System Design	Online	25.08.2020-28.08.2020	20
Vesna Starman	5th Pan-European Conference on Distance Teaching	Online	27.08.2020	21
Julija Uršič, Elizabeth Dickinson	European Conference of Science Journalism 2020 ECSJ 2020	Online	01.09.2020	22
Ana Slavec	EuroScience Open Forum ESOF	Trieste, Italy	05.09.2020	23
Kaja Kastelic	International Scientific and Professional Conference, "Health of the Working-Age Population"	Online	18.09.2020	24
László Hajdu, Miklós Krész	Budapest Data Forum	Online	22.09.2020	25

	Employee / Zaposleni	Conference / Ime konference	Location / Lokacija	Date / Datum
26	Aarne Johannes Niemelä, Anna Sandak, Balázs Dávid, Dean Lipovac, Erwin M. Schau, Eva Prelovšek Niemelä, Faksawat Poohphajai, Hana Remešová, Jaka Pečnik, Laetitia Marrot, Nastja Podrekar, Nežka Sajinčič, René Herrera Díaz, Tim Mavrič, Veerapandian Ponnuchamy, Amy Simmons, Andreja Kutnar, David Kodarin, Elizabeth Dickinson, Igor Gavrič, Jakub Sandak, Julija Uršič, Kelly Peeters, Lea Primožič, Marica Mikuljan, Michael Mrissa, Michael Burnard, Miklós Kresz, Miladin Jokić, Sidra Aslam, Vesna Starman	InnoRenew CoE International Conference 2020	Izola, Slovenia and Online	03.09.2020
27	Rok Prislan	29th International Electrotechnical and Computer Science Conference ERK 2020	Portorož, Slovenia	21.09.2020
28	Balázs Dávid	17th International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research CPAIOR 2020	Online	21.09.2020-24.09.2020
29	Andreja Kutnar, Vesna Starman, Lea Primožič	European Research and Innovation Days	Online	22.09.2020-24.09.2020
30	Jakub Sandak	International Forest Products Congress ORENKO 2020	Online	23.09.2020-26.09.2020
31	Laetitia Marrot	CONTESS Conference	Bressanone, Italy	25.09.2020-26.09.2020
32	Balázs Dávid, Miklós Krész	International Conference on Computational Logistics ICCL 2020	Online	29.09.2020-30.09.2020
33	Laetitia Marrot	13th International Technology Transfer Conference	Online	08.10.2020
34	Gertrud Fabian, Lea Primožič, Elizabeth Dickinson	Adobe MAX Conference	Online	20.10.2020-22.10.2020
35	Miklós Krész, Balázs Dávid	Neo4j Online Developer Expo and Summit NODES 2020	Online	22.10.2020
36	David B. DeVallance	Rectors' Conference on Mediterranean Perspective in the Next Decade	Online	23.10.2020
37	Črtomir Tavzes	17th Wood-Technology Conference	Online	30.10.2020
38	René Herrera Díaz, Anna Sandak	Wood & Fire Safety 2020	Online	02.11.2020-03.11.2020
39	Jakub Sandak	6th Professional Conference siBIM 2020	Online	03.11.2020-04.11.2020

Employee / Zaposleni	Conference / Ime konference	Location / Lokacija	Date / Datum	
Vesna Starman	Hundred Innovation Summit	Online	04.11.2020-06.11.2020	40
Roberto Biloslavo	COVID-19: Crisis management	Online	05.11.2020	41
Miklós Krész	GAMENET Online Day	Online	09.11.2020	42
Jakub Sandak, Ana Slavec, Matthew Schwarzkopf, Miklós Krész, Anna Sandak	Atmospheric Corrosion of Bronze: Beauty of art, science and cultural heritage care	Online	11.11.2020	43
Vesna Starman	International Conference Kreativna učna	Online	11.11.2020	44
Hana Remešová	Prague European Summit	Online	18.11.2020-19.11.2020	45
Miklós Krész, László Hajdu	BI Forum	Online	25.11.2020	46
Vesna Starman	International Expert Science Conference EDUvision	Online	03.12.2020-05.12.2020	47
Rok Prislan	e-forum ACUSTICUM 2020	Online	07.12.2020-11.12.2020	48

InnoRenew CoE employee national conference participation in 2020
Udeležba zaposlenih na nacionalnih konferencah v letu 2020

Employee / Zaposleni	Conference / Ime konference	Location / Lokacija	Date / Datum	
Elizabeth Dickinson, Amy Simmons	ARRS Science Communication Days 2020	Ljubljana, Slovenia	24.01.2020	1
Amy Simmons	Gender Equality Plan Design and Implementation	Ljubljana, Slovenia	05.03.2020-06.03.2020	2
Črtomir Tavzes, Marica Mikuljan	8th Development Day of Slovenia's Wood and Forestry Sector	Ljubljana, Slovenia	03.05.2020	3
Andreja Kutnar	Buildings and the Green Deal: Challenges and trends	Ljubljana, Slovenia	03.06.2020	4
Andreja Kutnar	Letter for Green Policy of Slovenian Tourism	Izola, Slovenia	10.07.2020	5
Andreja Kutnar, Črtomir Tavzes	Good Business Practices and Entering the Market of Slovenian Companies with Wooden Products	Celje, Slovenia	17.09.2020	6
Ana Slavec	International Symposium on Bronze	Online	11.10.2020	7
Julija Uršič	Slovene Society of Language Editors and Proofreaders Congress	Mala Nedelja	09.10.2020-10.10.2020	8
Ana Slavec	Network of Knowledge 2020	Online	25.11.2020	9

	Employee / Zaposleni	Conference / Ime konference	Location / Lokacija	Date / Datum
10	Jaka Pečnik, Iztok Šušteršič, Črtomir Tavzes	Wood Tech Talks	Online	12.10.2020
11	Iztok Šušteršič	Challenges and Opportunities for the Field: Circular, low carbon and smart buildings	Online	06.11.2020
12	Andreja Kutnar	Wood: Our green future	Online	11.11.2020

Outreach

Obveščanje

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 2020, 95 news items and four newsletters were prepared as well as 17 feature articles that were shared each Wednesday on social media under #WednesdayRead.

InnoRenew CoE za obveščanje slovenske in mednarodne javnosti uporablja številne kanale, vključno s svojo spletno stranjo (innorenew.eu). V letu 2020 je objavil 95 novic in štiri novičnike. Na družbenih omrežjih se poleg rednih novic pod ključnikom #WednesdayRead vsako sredo deli zanimiv daljši prispevek, objavljen na spletni strani InnoRenew CoE. V letu 2020 je bilo v vsaki od rubrik – V preseku, Drugi o nas in InnoRenew osebno – objavljenih 17 prispevkov.



InnoRenew in Person offers in-depth interviews with InnoRenew CoE employees and visiting researchers. Image: InnoRenew CoE

V rubriki InnoRenew osebno objavljamo intervjuje z zaposlenimi in gostujočimi raziskovalci. Foto: InnoRenew CoE

Others About Us presents interesting articles about InnoRenew CoE that were published in other media. Image: InnoRenew CoE

V rubriki Drugi o nas objavljamo prispevke o zanimivih odmevih na raziskave in dogodke InnoRenew CoE v različnih medijih. Foto: InnoRenew CoE



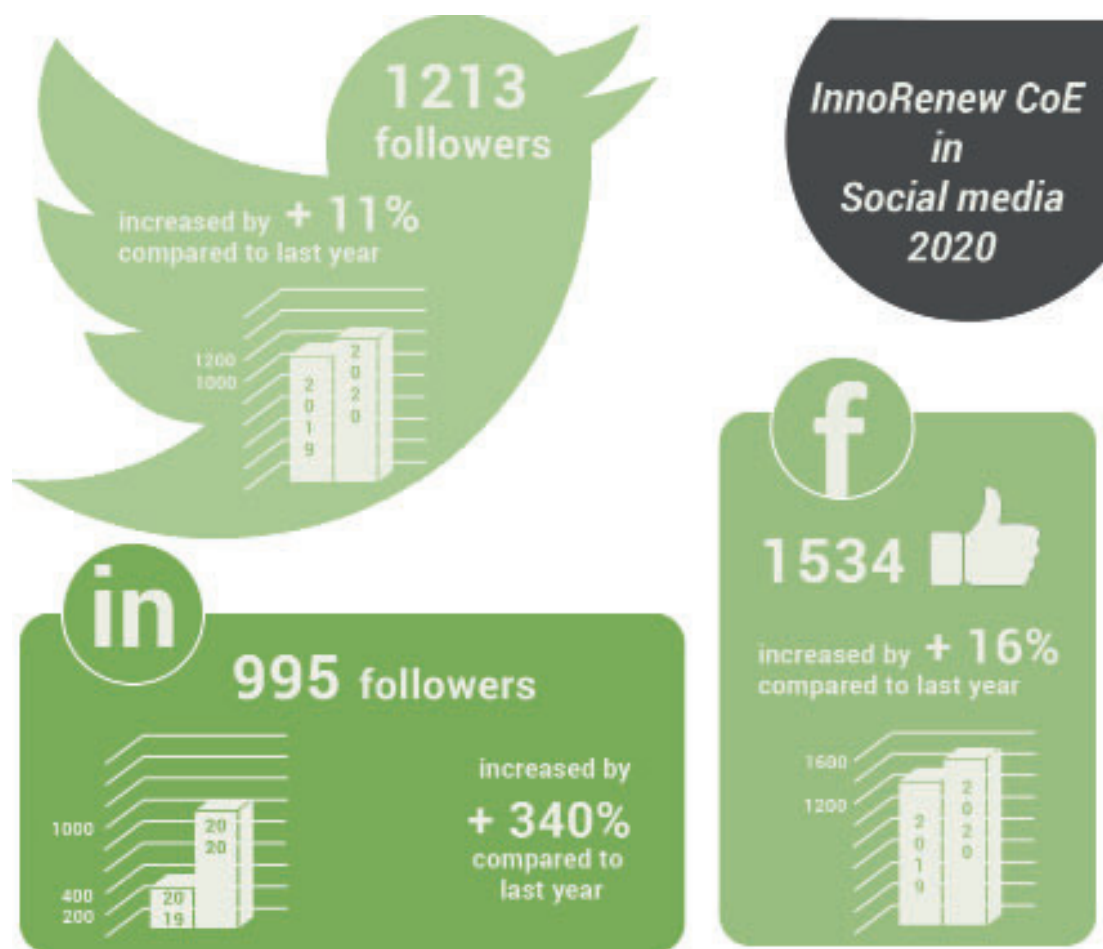
Cross-section publishes long-form articles about InnoRenew CoE research and events. Image: InnoRenew CoE

V rubriki V preseku objavljamo poljudne daljše prispevke o raziskavah in drugih dejavnostih inštituta. Foto: InnoRenew CoE

InnoRenew CoE's website was visited 40,127 times last year. Approximately 50 percent of users were from Slovenia and 50 percent from other countries. InnoRenew CoE is active on social media with 1,534 likes on Facebook, 1,213 followers on Twitter, 995 followers on LinkedIn and 16 videos posted to its YouTube channel at the end of 2020.

In 2020, InnoRenew CoE was featured in 242 newspaper articles, six television shows and ten radio programs.

In 2020, InnoRenew CoE's likes on Facebook increased approximately for 16 percent, followers on Twitter increased 11 percent and followers on LinkedIn increased 340 percent.
V primerjavi z lanskim letom se je število všečkov na Facebooku povečalo za skoraj 16 odstotkov, število sledilcev na Twitterju za 11 in na LinkedInu za 340 odstotkov.



Spletna stran InnoRenew je imela 40.127 obiskov. Približno 50 odstotkov vseh uporabnikov je iz Slovenije, 50 odstotkov pa iz ostalih držav sveta. Dejavni smo tudi na naših spletnih družbenih omrežjih na Facebooku, Twitterju, LinkedInu in YouTubeu, kjer se število aktivnih obiskovalcev in sledilcev še naprej povečuje. Na koncu leta 2020 smo zabeležili 1534 všečkov na Facebooku, 1213 sledilcev na Twitterju in 995 na LinkedInu, na kanalu YouTube pa naloženih 16 videoposnetkov.

V letu 2020 je bil InnoRenew CoE predstavljen in omenjen v 242 nacionalnih in mednarodnih časopisih ter revijah, v šestih televizijskih programih in desetih radijskih oddajah.

InnoRenew CoE's 2020 outreach beyond scientific and professional communities
Obveščanje v letu 2020 (znanstvene in strokovne skupnosti niso vključene)

Platform / Medij	Quantity in 2020 / Količina v letu 2020	
Social media	Facebook likes	1534
	Twitter followers	1213
	LinkedIn followers	995
Newspaper articles	National newspapers	228
	International newspapers (Belgium, Croatia, Czech Republic, Italy, Romania, Spain, UK)	14
TV shows	National	6
Radio shows	National	10

Trainings and meetings

Trainings

In 2020, InnoRenew CoE employees participated in 62 trainings and workshops.

Trainings and workshops attended in 2020 by InnoRenew CoE employees
Izobraževanja in delavnice, ki so se jih zaposleni v InnoRenew CoE udeležili v letu 2020

	Employee / Zaposleni	Training or workshop / Izobraževanje ali delavnica	Location / Lokacija	Date / Datum	
1	Ana Slavec	Data management for renewable materials and products workshop	Koper, Slovenia	09.01.2020	
2	Michael Burnard	Interaction between wood and microorganisms: Ecole Supérieure du Bois	Nantes, France	12.01.2020-14.01.2020	
3	Ana Slavec	Open Science Workshop	Ljubljana, Slovenia	23.01.2020	
4	Ana Slavec	Data management for renewable materials and products webinar	Online	30.01.2020	
5	Elizabeth Dickinson	Marketing insights you don't want to miss, Altmetric Book Club workshop	Online	27.02.2020	
6	David B. DeVallance	Bilateral Seminar: Role of University in Implementing Society 5.0	Ljubljana, Slovenia	03.03.2020	
7	David B. DeVallance	Towards a 2030 Vision on the European Universities of the Future	Brussels, Belgium	03.03.2020-05.03.2020	
8	Balázs Dávid	ICLR 2020 Workshop Tackling Climate Change with Machine Learning	Online	26.04.2020-30.04.2020	
9	Michael Burnard	WoodCircus business case selection workshop	Online	29.04.2020	
10	Elizabeth Dickinson	Adobe InDesign Tutorial Package	Online	02.06.2020	
11	Amy Simmons	Adobe Photoshop 101	Online	12.06.2020	
12	Amy Simmons	Adobe InDesign 101	Online	12.06.2020	
13	Amy Simmons	Photoshop for Beginners	Online	16.06.2020	
14	Laetitia Marrot	1st Seminar and consultation on porous materials	Ljubljana, Slovenia	16.06.2020-17.06.2020	
15	Oihana Gordobil, René Herrera Díaz, Marica Mikuljan	Lignin valorization towards fuels, chemicals and materials 2020	Online	04.11.2020	

Izobraževanja in srečanja

Izobraževanja

V letu 2020 so zaposleni v InnoRenew CoE sodelovali na 62 nacionalnih in mednarodnih izobraževanjih in delavnicah.

Employee / Zaposleni	Training or workshop / Izobraževanje ali delavnica	Location / Lokacija	Date / Datum	
David Kodarin	Choosing Priority Project Proposals for the Regional Development Program 2021-2027	Online	05.11.2020	16
Amy Simmons	Ladies Learning Code: Webmaking with HTML & CSS	Online	17.06.2020	17
Amy Simmons	Adobe Illustrator 101	Online	19.06.2020	18
Amy Simmons	Content Writing for Web	Online	23.06.2020	19
Amy Simmons	Adobe InDesign 101	Online	26.06.2020	20
Amy Simmons	Social Media for Beginners	Online	30.06.2020	21
Michael Burnard	Pharaon project pilots webinar	Online	06.07.2020	22
Amy Simmons	Ways to Measure Your Online Efforts	Online	17.07.2020	23
Amy Simmons	Content Planning	Online	14.07.2020	24
Elizabeth Dickinson	Design Hacks: How to create visuals when it's not usually your job, National Press Club Journalism Institute workshop	Online	17.07.2020	25
Amy Simmons	Google Analytics for Beginners	Online	29.07.2020	26
Vesna Starman	Play First Online Summit	Online	20.07.2020-24.07.2020	27
Elizabeth Dickinson	Editing Translations, ACES: The Society for Editing workshop	Online	30.07.2020	28
Elizabeth Dickinson	Editing in a Multilingual World, ACES: The Society for Editing workshop	Online	20.08.2020	29
Amy Simmons	Resistances to Gender Equality GE Academy	Online	08.09.2020	30
Ana Slavec	Networking mechanisms around supply and demand for mentoring and lectures	Online	13.09.2020	31

	Employee / Zaposleni	Training or workshop / Izobraževanje ali delavnica	Location / Lokacija	Date / Datum
32	Ana Slavec	Criteria for Scientific Progress in Slovenia	Izola, Slovenia	15.09.2020
33	Veerapandian Ponnuchamy, Anna Sandak	ERC Starting Grant mentoring event	Online	21.09.2020
34	René Herrera Díaz	COST Action CA18220 workshop – PLASTICS: think global, think circular, re-think end-of-life!	Online	24.09.2020
35	Elizabeth Dickinson	Technically Speaking: Exploring the World of Technical Editing, ACES: The Society for Editing workshop	Online	25.09.2020
36	Barbara Kotrle	Issues of calculation and payment of travel orders, per diem's, bonuses, and other incomes from employment contracts	Ljubljana, Slovenia	02.10.2020
37	Elizabeth Dickinson	Crossref LIVE workshop	Online	08.10.2020
38	Matthew Schwarzkopf, Michael Mrissa	H2020 Virtual Brokerage Event on the European Green Deal Call	Online	13.10.2020-14.10.2020
39	Hana Remešová, Balázs Dávid, Marica Mikuljan	Timber Buildings: Reuse and Recycling for Sustainability InFutUReWood	Online	19.10.2020
40	Kelly Peeters	GC Troubleshooting: Origin of ghost peaks	Online	20.10.2020
41	Václav Sebera	Possibilities of using ANSYS software in security	Online	21.10.2020
42	Oihana Gordobil, Esakkiammal Sudha Esakkimuthu	COST Action CA17128 LignoCOST – Modified Lignin Materials for Reactive Polymer Composites: Processing and Characterization	Online	23.10.2020
43	Kelly Peeters	GC analysis of water as component, or components having water as matrix	Online	27.10.2020
44	David Kodarin	How to Submit New Horizon Europe Project Proposals	Online	28.10.2020
45	Matthew Schwarzkopf	Electron Probe Microanalysis	Online	29.10.2020
46	Elizabeth Dickinson	Content Strategy for Savvy Storytellers, ACES: The Society for Editing workshop	Online	29.10.2020

	Employee / Zaposleni	Training or workshop / Izobraževanje ali delavnica	Location / Lokacija	Date / Datum
47	Elizabeth Dickinson, Amy Simmons	Design Hacks: How to create social media graphics, National Press Club Journalism Institute workshop	Online	30.10.2020
48	David Kodarin	Writing Successful Applications in Horizon Europe	Online	03.11.2020
49	Kelly Peeters	Restek Webinar: Sampling Airborne VOCs with Radiello Passive Samplers	Online	09.11.2020
50	David Kodarin	The meaning and significance of natural construction in modern times; Co-living with space before and after industrialization	Online	11.11.2020
51	Andreja Kutnar, Miklós Krész	ForestValue Research Programme Midterm Seminar	Online	17.11.2020-18.11.2020
52	David Kodarin	Harmonic principles of space design and Honesty towards materials	Online	18.11.2020
53	Andreja Kutnar	Floriade Dialogue Webinar #10: Bio-based building	Online	19.11.2020
54	Lea Primožič	Protocol Rules for Business Meetings	Online	20.11.2020
55	Amy Simmons	Daily Allowance Case Studies webinar	Online	27.11.2020
56	Michael Mrissa	Open Geospatial Consortium workshop	Online	24.11.2020
57	Michael Burnard	WoodCircus Northern Region Validation Webinar	Online	24.11.2020
58	David Kodarin	Construction with earth and Overview of natural building materials	Online	25.11.2020
59	Michael Burnard	WoodCircus Eastern Region Validation Webinar	Online	01.12.2020
60	Michael Burnard	WoodCircus Southern Region Validation Webinar	Online	02.12.2020
61	Anna Sandak	COST Academy Webinar: Standardisation for COST Actions	Online	03.12.2020
62	Iztok Šušteršič	Dynamic of Structures: Wind-induced vibrations	Online	10.12.2020

Meetings

In 2020, InnoRenew CoE employees attended 85 meetings in their capacity as leaders within professional societies and COST Actions. They also participated in research project meetings and standardization committees.

Meetings attended in 2020 by InnoRenew CoE employees
Srečanja, ki so se jih zaposleni v InnoRenew CoE udeležili v letu 2020

	Employee / Zaposleni	Meeting / Sestanek	Location / Lokacija	Date / Datum	
1	Manca Drobne	WOOLF project administrative project leadership meeting	Ljubljana, Slovenia	08.01.2020	
2	Nežka Sajinčič	COST Action CA18236 Multi-disciplinary innovation for social change, management committee and working group meeting	Novi Sad, Serbia	14.01.2020-17.01.2020	
3	Rok Prislan	Slovenian Association for Acoustics meeting	Ljubljana, Slovenia	15.01.2020	
4	Michael Burnard, Andreja Kutnar	Pharaon project kickoff meeting	Pisa, Italy	20.01.2020-23.01.2020	
5	Igor Gavrić, Iztok Šušteršič	WOOLF project partner meeting	Ljubljana, Slovenia	20.01.2020	
6	Ana Slavec	Official statistics - from where and where?	Ljubljana, Slovenia	22.01.2020	
7	Matthew Schwarzkopf	Pro-Enrich project review meeting	Brussels, Belgium	28.01.2020-30.01.2020	
8	Laetitia Marrot	COST Action CA17107 European Network to connect research and innovation efforts on advanced Smart Textiles, 3rd member committee meeting and working group meeting	Ljubljana, Slovenia	29.01.2020	
9	Amy Simmons	COST Association meeting GH Workshop	Brussels, Belgium	30.01.2020-01.02.2020	
10	Faksawat Poohphajai, Anna Sandak, Jakub Sandak, Miklós Krész, Michael Mrissa	Advanced materials for cultural heritage storage project meeting	Ljubljana, Slovenia	06.02.2020	
11	Veerapandian Ponnuchamy	COST Action CA18234 Computational materials sciences for efficient water splitting with nanocrystals from abundant elements, management committee meeting	Naples, Italy	11.02.2020-13.02.2020	
12	Anna Sandak, Jakub Sandak, Matthew Schwarzkopf	Meeting with Slovenian State Forests representatives	Postojna, Slovenia	11.03.2020	
13	Črtomir Tavzes	European Forest-based Sector Technology Platform advisory committee meeting	Brussels, Belgium	04.03.2020	

Srečanja

V letu 2020 so se zaposleni v InnoRenew CoE udeležili 85 srečanj, vključno z vodstvenimi sestanki ter sestanki upravnih odborov strokovnih združenj in akcij COST. Kot aktivni člani so sodelovali tudi na sestankih raziskovalnih projektov, akcij COST in odbora za standardizacijo.

Employee / Zaposleni	Meeting / Sestanek	Location / Lokacija	Date / Datum	
Michael Burnard	COST Action CA16114 Rethinking Sustainability Towards a Regenerative Economy, management committee meeting	Limassol, Cyprus	13.02.2020-15.02.2020	14
Balázs Dávid, Miklós Krész	Meeting with Ministry of the Environment and Spatial Planning representatives	Ljubljana, Slovenia	05.03.2020	15
Igor Gavrić	"Standards Committee Building and Civil Engineering; CEN/TC 250/SC 8, working group 3	Online	10.03.2020-11.03.2020	16
Igor Gavrić	Dyna-TTB project partner meeting	Online	24.03.2020	17
Ana Slavec	Survey about time consumption and intergenerational transfers of unpaid work	Online	31.03.2020	18
Igor Gavrić	"Standards Committee Building and Civil Engineering; CEN/TC 250/SC 8, working group 3	Online	07.04.2020	19
Ana Slavec	Modeling and statistical aspects of COVID-19 in Slovenia	Online	21.04.2020	20
Michael Burnard	InnovaWood executive board meeting	Online	24.04.2020	21
Igor Gavrić	WOOLF project partner meeting	Online	11.05.2020	22
Matthew Schwarzkopf	Pro-Enrich project general assembly and steering council meeting	Oelde, Germany	11.05.2020-13.05.2020	23
Michael Burnard	WoodCircus project midterm review practice	Online	26.05.2020	24
Ana Slavec	Visualization of health data	Online	03.06.2020	25
Anna Sandak	COST Action CA16226 Smart Habitat for the Elderly, Homes4life seminar	Online	30.06.2020	26
Michael Burnard	WoodCircus project midterm review	Online	12.06.2020	27
Anna Sandak	COST Academy leadership workshop	Online	19.06.2020	28
Anna Sandak	CLICKdesign project meeting	Online	08.07.2020	29
Michael Burnard	Pharaon project impact assessment meeting	Online	14.07.2020	30

	Employee / Zaposleni	Meeting / Sestanek	Location / Lokacija	Date / Datum	
31	Michael Burnard	Hotel Cortina construction meeting	Online	20.07.2020	
32	Michael Burnard	COST Action CA16226 Smart Habitat for the Elderly, WG 4.4 meeting	Online	22.07.2020	
33	Michael Burnard, Anna Sandak	COST Action CA16226 Smart Habitat for the Elderly, core group meeting	Online	25.07.2020	
34	Michael Burnard	COST Action CA16226 Smart Habitat for the Elderly, WG 4.3 meeting	Online	27.07.2020	
35	Michael Burnard, Anna Sandak	COST Action CA16226 Smart Habitat for the Elderly, WG 4.1 meeting	Online	30.07.2020	
36	Michael Burnard	SWST board meeting	Online	11.08.2020	
37	Michael Burnard	COST Action CA16226 Smart Habitat for the Elderly, WG 4.2 meeting	Online	12.08.2020	
38	Michael Burnard	SWST board meeting	Online	18.08.2020	
39	Michael Burnard	Pharaon project Slovenia pilot tech planning	Online	20.08.2020	
40	Marica Mikuljan, Andreja Kutnar, Lea Primožič, Jakub Sandak	Meeting with Slovenian National Forests representatives	Izola, Slovenia	24.08.2020	
41	Nastja Podrekar, Kaja Kastelic	HEPA Europe Annual Meeting 2020	Online	04.09.2020	
42	Igor Gavrić	WOOLF project partner meeting	Online	08.09.2020	
43	Igor Gavrić	Standards Committee Building and Civil Engineering; CEN/TC 250/SC 8, working group 3	Online	08.09.2020-09.09.2020	
44	Michael Mrissa	COST Action CA19126 Positive Energy Districts European Network, kickoff meeting	Online	10.09.2020-11.09.2020	
45	Ana Slavec	Trends in opinion polls	Online	17.09.2020	
46	Ana Slavec	What researchers should know about Plan S	Online	19.09.2020	
47	Ana Slavec	Tools to facilitate research reproducibility	Online	20.09.2020	
48	Ana Slavec	Infrastructural aspects of open science in Slovenia	Online	21.09.2020	
49	Ana Slavec	COST Action CA19117 Researcher Mental Health, 1st management committee meeting	Online	22.09.2020-23.09.2020	
50	Anna Sandak, Jakub Sandak	CLICKdesign project meeting	Online	22.09.2020-23.09.2020	
51	Miklós Krész	COST Action Distributed Knowledge Graphs, kickoff meeting	Online	23.09.2020-24.09.2020	

Employee / Zaposleni	Meeting / Sestanek	Location / Lokacija	Date / Datum	
Kaja Kastelic	2020 ProPASS ECR Network Meeting	Online	24.09.2020	52
Laetitia Marrot	COST Action CA17107 European Network to connect research and innovation efforts on advanced Smart Textiles, WG4 meeting	Bressanone, Italy	24.09.2020	53
Anna Sandak	COST Action CA19145 European Network for assuring food integrity using non-destructive spectral sensors, management committee meeting	Online	30.09.2020-01.10.2020	54
Zijada Adembegović Hujdurović	Meeting with architect Janez Urbanc for potential collaboration	Koper, Slovenia	08.10.2020	55
Miklós Krész	Research-2-Business meetings at the 13th International Technology Transfer Conference	Online	08.10.2020	56
Igor Gavrić	WOOLF project meeting	Trebnje, Slovenia	09.10.2020	57
Marica Mikuljan	MetaDynea project meeting	Online	13.10.2020	58
Michael Mrissa	Pharaon project WG4 meeting	Online	15.10.2020	59
Balázs Dávid	COST Action CA19122 European Network For Gender Balance in Informatics, kickoff meeting	Online	19.10.2020-20.10.2020	60
Anna Sandak	COST Action CA16226, WG 4.3 solutions for ageing well at work meeting	Online	20.10.2020	61
David B. DeVallance	COST Action CA19118 High-performance Carbon-based composites with Smart properties for Advanced Sensing Applications, meeting	Online	21.10.2020-22.10.2020	62
Zijada Adembegović Hujdurović	Meeting with Aljoša Šajna from ZAG about potential collaboration	Koper, Slovenia	22.10.2020	63
Anna Sandak	COST action CA16226 Indoor living space improvement: Smart Habitat for the Elderly, WG 4.2 solutions for ageing well in the community	Online	22.10.2020	64
Jakub Sandak, Miklós Krész, Michael Mrissa	BIM project progress reporting meeting	Online	23.10.2020	65
Michael Mrissa	Pharaon project WP4 meeting	Online	30.10.2020	66
Matthew Schwarzkopf, Kelly Peeters	Pro-Enrich project general assembly meeting	Online	03.11.2020-05.11.2020	67

	Employee / Zaposleni	Meeting / Sestanek	Location / Lokacija	Date / Datum
68	Anna Sandak	COST Action CA16226 Indoor living space improvement: Smart Habitat for the Elderly, WG 4.1 solutions for ageing well at home	Online	02.11.2020
69	Anna Sandak	COST Action CA19145 European Network for assuring food integrity using non-destructive spectral sensors, core group meeting	Online	03.11.2020
70	Anna Sandak	COST Action CA16226 Indoor living space improvement: Smart Habitat for the Elderly, core group meeting	Online	09.11.2020
71	Michael Mrissa, Sidra Aslam	COST Action CA19126 Positive Energy Districts European Network, meeting	Online	10.11.2020
72	Anna Sandak, Michael Mrissa	COST Action CA16226 Indoor living space improvement: Smart Habitat for the Elderly, management committee meeting	Online	12.11.2020
73	Marica Mikuljan	MetaDynea project meeting	Online	04.11.2020
74	Anna Sandak, Jakub Sandak	CLICKdesign project edu-pack meeting	Online	13.11.2020
75	Anna Sandak	COST Action CA19145 European Network for assuring food integrity using non-destructive spectral sensors, core group meeting	Online	13.11.2020
76	Michael Burnard, Michael Mrissa, Alenka Volk	Pharaon project technical review meeting	Online	19.11.2020-20.11.2020
77	Anna Sandak	COST Action CA19145 European Network for assuring food integrity using non-destructive spectral sensors, core group meeting for Sensorfint	Online	13.11.2020
78	René Herrera Díaz	COST Action CA18220 European network of FURan based chemicals and materials FOR a Sustainable development, meeting	Online	17.11.2020-18.11.2020
79	Michael Burnard, Michael Mrissa, Alenka Volk	Pharaon project technical review meeting	Online	19.11.2020-20.11.2020
80	David B. DeVallance, Nežka Sajinčič	BRACKET project meeting	Online	20.11.2020
81	Miklós Krész, Michael Mrissa	BIM start-up project meeting	Online	24.11.2020
82	Anna Sandak, Jakub Sandak, Nežka Sajinčič	CLICKdesign project edu-pack meeting	Online	27.11.2020

Employee / Zaposleni	Meeting / Sestanek	Location / Lokacija	Date / Datum	
Veerapandian Ponnuchamy	COST Action CA18234 Computational materials sciences for efficient water splitting with nanocrystals from abundant elements, meeting	Online	30.11.2020-01.12.2020	83
Michael Burnard	COST Action CA16114 - Rethinking Sustainability Towards a Regenerative Economy, 5th management committee meeting	Online	04.12.2020	84
René Herrera Díaz	COST Action CA18220 European network of FURan based chemicals and materials FOR a Sustainable development, meeting	Online	17.12.2020-18.12.2020	85

Research visits

Raziskovalni obiski

Two InnoRenew CoE employees undertook research visits abroad in 2020.

V letu 2020 sta dva zaposlena v InnoRenew CoE opravila raziskovalna obiska v tujini.

InnoRenew CoE employee research visits abroad in 2020

Raziskovalni obiski, ki so jih zaposleni v InnoRenew CoE leta 2020 opravili v tujini

Employee / Zaposleni	Research visit / Raziskovalni obisk	Location / Lokacija	Date / Datum	
David B. DeVallance	West Virginia University	Morgantown, West Virginia, USA	06.02.2020-16.02.2020	1
Laetitia Marrot	Short Term Scientific Mission for COST Action CA16226 Indoor living space improvement: Smart Habitat for the Elderly	Buštěhrad, Czech Republic	05.03.2020-26.03.2020	2

Memberships

Institutional

Članstva InnoRenew CoE

InnoRenew CoE holds organizational memberships in nine associations that are important to the institute's research.

InnoRenew CoE je član devetih združenj, ki so pomembna za raziskovalna področja inštituta.

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	Open Geospatial Consortium	Member

Članstva

COST Actions

Akcije COST

COST (European Cooperation in Science and Technology) Actions are useful networking platforms for InnoRenew CoE. Currently, the institute has employees engaged in 16 thematically appropriate COST Actions.

Za raziskovalce v InnoRenew CoE so akcije COST (European Cooperation in Science and Technology) zelo koristna in uporabna platforma. Zaposleni v InnoRenew CoE so trenutno vključeni v 16 tematsko ustreznih akcij COST.

InnoRenew CoE COST Action involvement
Vključenost InnoRenew CoE v akcijah COST

COST Action / Akcija COST	Member(s) / Član(i)	
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)"	1
CA16114 REthinking Sustainability TOwards a Regenerative Economy	"Michael Burnard (MC member) Iztok Šušteršič (MC substitute)"	2
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)"	3
CA17107 European Network to connect research and innovation efforts on advanced Smart Textiles	Laetitia Marrot (MC substitute)	4
CA18201 An integrated approach to conservation of threatened plants for the 21st Century	Amy Simmons (grant holder manager/ administrator)	5
CA18234 Computational materials sciences for efficient water splitting with nanocrystals from abundant elements	Veerapandian Ponnuchamy (MC member, WG member)	6
CA18204 Dynamics of placemaking and digitalization in Europe's cities	Ana Slavec (MC member), Tim Mavrič (MC substitute)	7
CA18236 Multi-disciplinary innovation for social change	Nežka Sajinčič (MC member)	8

	COST Action / Akcija COST	Member(s) / Član(i)
9	CA16228 European Network for Game Theory	Miklós Krész (WG member)
10	CA19126 Positive Energy District European Network	Michael Mrissa (MC), Sidra Aslam (MC substitute)
11	CA17128 Establishment of a Pan-European Network on the Sustainable Valorisation of Lignin	Oihana Gordobil (WG member)
12	CA18220 European network of FURan based chemicals and materials FOR a Sustainable development	René Herrera Díaz (MC member)
13	CA19145 European Network for assuring food integrity using non-destructive spectral sensors	Anna Sandak (MC member, ITC conference manager)
14	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)
15	CA19134 Distributed Knowledge Graphs	Miklós Krész (MC member), Balázs Dávid (MC substitute)
16	CA19117 Researcher Mental Health	Ana Slavec (MC member), Dean Lipovac (MC substitute)

Individual memberships of InnoRenew CoE employees

Individualna članstva zaposlenih v InnoRenew CoE

InnoRenew CoE employees are individual members of 78 organizations, 30 national (Slovenian, Hungarian, American, Italian, Finnish, Spanish) and 47 international, which span the fields of wood science, wood technology, forestry, mathematics, kinesiology, education and research.

Zaposleni v InnoRenew CoE so člani 78 nacionalnih in mednarodnih združenj. Od 78 združenj jih je 30 nacionalnih (slovenskih, italijanskih, madžarskih, ameriških, finskih, španskih) in 47 mednarodnih. Večina teh organizacij je s področij lesarstva, lesarske tehnologije, gozdarstva, matematike, kineziologije, izobraževanja in raziskovanja kot takega.

Članstva zaposlenih v InnoRenew CoE v mednarodnih in nacionalnih združenjih

Organization / Združenje	Employee / Zaposleni	Membership / Članstvo	
Association Young Academy (Mlada akademija), Slovenia	Ana Slavec	Supervisory Board member	1
Slovenian Statistical Society, Slovenia	Ana Slavec	Member	2
WVU Student Forest Products Society Chapter	David B. DeVallance	Advisor	3
Oregon State University, USA	Andreja Kutnar	Affiliated Faculty member	4
Slovene chamber of architects (ZAPS), Slovenia	Eva Prelovšek Niemelä	Member	5
Finnish Association of Architects (SAFA), Finland	Aarne Johannes Niemelä	Member	6
The National Committee of Research Guarantors, REPRISE	Anna Sandak	Member	7
Slovenian Kinesiology Association	Darjan Smajla	Member	8
	Matic Sašek	Founding Member	
Slovenian Institute for Standardization (SIST) national technical committee	Igor Gavrič, Iztok Šušteršič	Member	9
Association of Bonding Psychotherapists of Slovenia	Mateja Erce	Member	10
Slovenian network of EUMATHS-IN: European Service Network of Mathematics for Industry	Miklós Krész	Representative of the University of Primorska	11
Italian Society for Near Infrared Spectroscopy (SISNIR)	Anna Sandak	Member	12
	Jakub Sandak	Member	
Research Society "Hungarian Operations Research Society"	Balázs Dávid	Member	13
	László Hajdu	Member	
	Miklós Krész	Member	
Slovenian Discrete and Applied Mathematics Society	Miklós Krész	Member	14
Public Body of the Hungarian Academy of Sciences	Miklós Krész	Member	15
Slovenian Associations of Wood Science and Technology	Marica Mikuljan, Andreja Kutnar	Board Member	16

	Organization / Združenje	Employee / Zaposleni	Membership / Članstvo
17	Royal Academy of Sciences Foundation of Spain	Oihana Gordobil	Member
18	Slovene network for Social Responsibility	Roberto Biloslavo	Member
19	Slovenian Acoustical Society	Rok Prislan	Secretary
20	Association for Social Pedagogy	Vesna Starman	Member
21	Science and Technology Council of the Republic of Slovenia	Andreja Kutnar	Member
22	Slovenian President Borut Pahor's Consultative Committee for Climate Policy	Andreja Kutnar	Member
23	Strategic Research and Innovation Partnership (SRIP)	Iztok Šušteršič	Member of Smart buildings and home with the woodchain and Head of timber constructions sector
24	Drvena industrija : Znanstveno stručni časopis za pitanja drvene tehnologije	Jakub Sandak	Editorial Board
25	Homo sporticus : naučno-stručni časopis iz oblasti sporta i tjelesnog odgoja	Nejc Šarabon	Editorial Board
26	Managerjeva knjižnica	Roberto Biloslavo	Editorial Board
27	Montenegrin journal of sports science and medicine	Nejc Šarabon	Editorial Board
28	Society of Wood Science and Technology	Andreja Kutnar	Board Member, president from July 1, 2020
		Michael Burnard	Board Member
		Matthew John Schwarzkopf, Jakub Sandak, David B. DeVallance, Václav Sebera, Anna Sandak, Aarne Niemelä, Faksawat Poohphajai, Nežka Sajinčič, Hana Remešová, Vesna Starman, Dean Lipovac, Igor Gavrić, Kelly Peeters, Eva Prelovšek Niemelä, Marica Mikuljan, Veerapandian Ponnuchamy, Amy Simmons	Member

Organization / Združenje	Employee / Zaposleni	Membership / Članstvo	
The Social Chamber of Slovenia	Mateja Erce	Member	29
Society for Wood Science and Technology, Strategic Initiatives Committee	Michael Burnard	Chair	30
Young Academy of Europe	Andreja Kutnar	Member	31
Wood & Fiber Science Journal	Andreja Kutnar	Editorial Board	32
European Survey Research Association, Europe	Ana Slavec	Member	33
InnovaWood	Andreja Kutnar (until June 2020)	Executive Board member	34
	Michael Burnard	Executive Board member	
International Research Group on Wood Protection (IRG)	Anna Sandak	Member, Communications Committee Member	35
	Veerapandian Ponnuchamy	Member	
International Society for Plant Spectroscopy (ISPS)	Anna Sandak	Member	36
IUFRO Officeholder	Anna Sandak	Deputy of division 5.03.05 - Biological resistance of wood	37
Network of Early-carrier Sustainable Scientist & Engineers (NESSE)	Anna Sandak	Member	38
International Committee for Near Infrared Spectroscopy (ICNIRS)	Anna Sandak	Member of the Committee	39
	René Herrera Díaz	Member	
EU Environmental Footprint Technical Advisory Board; European Commission, Belgium	Erwin M. Schau	Member	40
Forest Products Society	Matthew Schwarzkopf	Member	41
	David B. DeVallance	Member, Past President	
EOSC FAIR Working Group, European Open Science Cloud	Anna Slavec	Member	42
Association of International Education Administrators (AIEA)	David B. DeVallance	Presidential Fellow	43
Znanstvene monografije Fakultete za management Koper	Roberto Biloslavo	Editorial Board	44

	Organization / Združenje	Employee / Zaposleni	Membership / Članstvo
45	European Mechanics Society, contact person for MENDELU	Václav Sebera	Member
46	European Council of Doctoral Candidates and Junior Researchers (Eurodoc), Europe	Ana Slavec	WG Open Science co-coordinator
47	Research Data Alliance, international association	Ana Slavec	Member
		Miklós Krész	Member
		René Herrera Díaz	Member
48	International Wood Machining Seminar (IWMS)	Jakub Sandak	Member of Advisory Committee
49	Forest Technology Platform	Andreja Kutnar	Chairperson of National Support Group Slovenia
		Črtomir Tavzes	Member of the Advisory Committee of the Forest-based sector
50	European Committee for Standardization (CEN) - Technical Committee 250	Igor Gavrić, Iztok Šušteršič	Member
51	International Society for the Measurement of Physical Behaviour	Kaja Kastelic	Member
52	ProPASS Early Career Researcher Network	Kaja Kastelic	Member
53	International Network of Time-use Epidemiologists, Victoria, Australia	Kaja Kastelic	Member
54	Sedentary Behaviour Research Network	Kaja Kastelic	Member
55	International Society of Behavioral Nutrition and Physical Activity	Kaja Kastelic	Member
56	Beta Gamma Sigma	Lea Primožič	Member
57	Health Enhancing Physical Activity (HEPA Europe)	Nastja Podrekar	Member
58	International Society of Behavioral Nutrition and Physical Activity	Nastja Podrekar	Member
59	Coatings	Anna Sandak	Guest Editor

Organization / Združenje	Employee / Zaposleni	Membership / Članstvo	
Applied sciences	Nejc Šarabon	Guest Editor	60
Cosmetics	Oihana Gordobil	Guest Editor	61
Chemosensors	Anna Sandak	Topic Editor	62
Interdisciplinary Perspectives on the Built Environment	Anna Sandak, Miklós Krész, Iztok Šušteršič	Topic Editor	63
Journal of Wood Material Science and Engineering	Andreja Kutnar	Co-Editor	64
	Anna Sandak	Editorial Board	
European Journal of Wood and Wood Products	Andreja Kutnar	Editorial Board	65
EURO - Association of European Operational Research Societies	Miklós Krész	Working group member: EWG SSC, EWG DSO, EWG PATAT, EWG ECCO	66
Material Economy and Logistics Journal	Miklós Krész	Scientific Board member	67
International Society of Bonding Psychotherapy	Mateja Erce	Member	68
International journal of Euro-Mediterranean studies	Roberto Biloslavo	Editorial Board	69
Journal of sports science	Nejc Šarabon	Editorial Board	70
JOY : journal of Yaşar University	Roberto Biloslavo	Editorial Board	71
Managing global transitions : international research journal	Roberto Biloslavo	Editor	72
Symmetry	Nejc Šarabon	Guest Editor	73
Buildings	Igor Gavrić	Topic Editor	74
Crisis	Diego De Leo	Chief Editor	75
European Journal of Translational Myology	Nejc Šarabon	Editorial Board	76
Frontiers in human neuroscience	Nejc Šarabon	Editorial Board	77
Italian Mechanical Technology Society (AITEM)	Tania Langella	Member	78

Teaching

Twenty-six InnoRenew CoE employees had teaching assignments at five higher education faculties during the 2019-2020 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 2019-2020
Pedagoška dejavnost zaposlenih v InnoRenew CoE v študijskem letu 2019/20

	Employee / Zaposleni	Academic rank / Akademski naziv	University / Univerza	Faculty / Fakulteta	Course(s) / Ime predmetov
1	Miklós Krész	Associate professor	University of Primorska	Faculty of Mathematics, Natural Sciences and Information Technologies	Data Science Seminar; Selected Topics in Theoretical Computer Science; Mining Massive Data
2	Aleksandar Tošić	Teaching assistant			Programming 1 and 3
3	Igor Gavrić	Assistant professor			Wood Design and Structural Analysis
4	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
5	Dean Lipovac	Assistant			Qualitative Research
6	Matthew Schwarzkopf	Associate professor			Wood Science and Technology; Wood Composites
7	Michael Burnard	Assistant professor			Data Science Ethics; Sustainable and Restorative Built Environments; Scientific Writing and Presentation; Data Practicum I - Data Science with R/RStudio
8	Michael Mrissa	Full professor			Data Engineering and Distributed Information Systems
9	Balázs Dávid	Assistant			Formal Languages and Computability; Mining massive data
10	László Hajdu	Assistant			Programming 2
11	Diego De Leo	Full professor			Selected Biopsychological Topics in English
12	Andreja Kutnar	Full professor			Wood Science and technology; Building energy simulations; Sustainable and restorative environments; Modern history of sustainable architecture; Forest Management and Wood Processing; Renewable resources; Environmental Technologies, Preparation of doctoral disposition - seminar
13	David B. DeVallance	Associate professor			Renewable Materials for Healthy Built Environments; Wood Composites; Forest Products Marketing
14	Jakub Sandak	Assistant professor			Renewable Materials for Healthy Built Environments; Non-destructive testing of wood
15	Anna Sandak	Assistant professor			Renewable Materials for Healthy Built Environments; Non-destructive testing of wood, lectures related to spectroscopy

Poučevanje

V študijskem letu 2019/20 je bilo 26 zaposlenih v InnoRenew CoE vključenih v pedagoško delo na petih fakultetah pri predmetih s področij lesarstva, računalništva, obnovljivih materialov, trajnostnosti, raziskovalnega in znanstvenega pisanja, kineziologije, ergonomije in podatkovne znanosti.

Employee / Zaposleni	Academic rank / Akademski naziv	University / Univerza	Faculty / Fakulteta	Course(s) / Ime predmetov			
Jaka Pečnik	Lab Assistant	University of Primorska	Faculty of Mathematics, Natural Sciences and Information Technologies	Renewable and Wood-based Materials in Construction	16		
Niki Hrovatin	Assistant			Computer practicum, Programming 1	17		
Sidra Aslam	Assistant			Data Engineering and Distributed Information Systems	18		
Nastja Podrekar	Assistant		Faculty of Health Sciences	Research and innovation; Ergonomics	19		
Darjan Smajla	Assistant professor			Exercise therapy, Kinesiometrics, Applied Biomechanics	20		
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	21		
Jure Žitnik	Assistant			Basics of exercise physiology, Exercise physiology	22		
Kaja Kastelic	External collaborator			Physical activity for health, Ergonomics	23		
Roberto Biloslavo	Full professor			Strategic Management; Green Economy; Sustainable Management Practice	24		
Jakub Sandak	Visiting professor			Gdańsk University of Technology	Faculty of Mechanical Engineering	Non-destructive testing of wood	25
Václav Sebera	Research Assistant			Mendel University in Brno	Faculty of Forestry and Wood Technology	Physical and Mechanical Properties of Wood; Introduction to Image Processing	26
Václav Sebera	Assistant professor			Rosenheim Technical University of Applied Sciences	Faculty of Wood Technology and Construction	Advanced Technical Mechanics	27
Jan Včelák	Assistant professor			Czech Technical University in Prague	Faculty of Electrical Engineering	B5M99SCT - Technologies for SmartCities, B3M38SPD - Data Acquisition and Transfer	28

Visitors

Hosting visitors in 2020 was affected by the COVID-19 pandemic, and most collaborations were postponed. Nevertheless, InnoRenew CoE hosted 13 international visitors. Ten visits were for less than six days, and six visits were for a longer period. International visitors came from nine countries, including Austria, Belgium, Croatia, the Czech Republic, Germany, the Netherlands, Poland, Spain and Sweden.

InnoRenew CoE international visitors in 2020 (1-5 days)
Obiskovalci InnoRenew CoE iz tujine (1–5 dni) v letu 2020

	Guest / Gost	Affiliation / Organizacija	Country / Država	Period / Čas obiska
1	Uwe Kies	InnovaWood	Belgium	10.01.2020 - 11.01.2020
2	Bohumil Kasal	Fraunhofer WKI	Germany	11.01.2020 - 15.01.2020
3	Stefan Siemers	BECK Fastener Group	Austria	04.02.2020
4	Thomas Hochtritt	BECK Fastener Group	Austria	04.02.2020
5	Gianmarco Marino	GoodHout B.V.	Netherlands	20.02.2020 - 21.02.2020
6	Michael Kaliske	Technical University of Dresden	Germany	02.03.2020 - 03.03.2020
7	Daniel Konopka	Technical University of Dresden	Germany	02.03.2020 - 03.03.2020
8	András Bóta	Umea University	Sweden	07.07.2020 - 31.07.2020
9	Jan Včelák	University Centre of Energy Efficient Buildings	Czech Republic	10.08.2020 - 14.08.2020
10	Bohumil Kasal	Fraunhofer WKI	Germany	14.09.2020 - 17.09.2020

Interdisciplinary Perspectives on the Built Environment

Interdisciplinary Perspectives on the Built Environment (IPBE) is an open access journal publishing peer-reviewed research at the nexus of sustainability, health and the built environment. IPBE welcomes original findings, reviews, short communications and registered reports on emerging science and innovation in renewable materials, sustainable design and bio-based technologies.

IPBE was established in 2019 and is independently published by InnoRenew CoE. In 2020, activities related to the journal were connected with promotion and the submission process.

Obiski

Zaradi pandemije covid-19, ki je zelo zaznamovala leto 2020, so bili prestavljeni številni obiski v InnoRenew CoE. Kljub temu je inštitut gostil 13 obiskovalcev iz tujine. Od tega je bilo devet obiskov krajših, pet pa daljših od šest dni. Tuji obiskovalci so prišli iz devetih različnih držav – iz Avstrije, Belgije, Češke, Hrvaške, Nemčije, Nizozemske, Poljske, Španije in Švedske.

InnoRenew CoE international visitors in 2020 (6+ days)
Obiskovalci InnoRenew CoE iz tujine (več kot 6 dni) v letu 2020

Guest / Gost	Affiliation / Organizacija	Country / Država	Period / Čas obiska
Daniel Chuchala	Gdańsk University of Technology	Poland	05.01.2020 - 05.02.2020
Alberto Quintana Gallardo	Polytechnic University of Valencia	Spain	06.01.2020 - 31.01.2020
Jan Včelák	University Centre of Energy Efficient Buildings	Czech Republic	09.02.2020 - 22.02.2020
Jan Včelák	University Centre of Energy Efficient Buildings	Czech Republic	01.06.2020 - 07.06.2020
Michał Bosak	Gdańsk University of Technology	Poland	07.08.2020 - 04.09.2020
Filip Majstorović	University of Zagreb, Faculty of Forestry	Croatia	01.10.2020 - 28.05.2021

Revija Interdisciplinary Perspectives on the Built Environment

Interdisciplinary Perspectives on the Built Environment (IPBE; Interdisciplinarni vidiki grajenega okolja) je odprtodostopna revija, ki objavlja recenzirane (peer-reviewed) prispevke o raziskavah na presečišču trajnosti, zdravja in grajenega okolja. Revija prinaša ugotovitve, preglede, kratka poročila o rezultatih (short communications) in evidentirana poročila (registered reports), ki so povezani z nastajajočo znanostjo in inovacijami na področjih obnovljivih materialov, trajnostnega oblikovanja in biotehnologije.

IPBE je bil ustanovljen leta 2019 in ga izdaja InnoRenew CoE. V letu 2020 so bile dejavnosti pri reviji posvečene promociji in postopkom oddajanja prispevkov.

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

In 2020, InnoRenew CoE researchers contributed to 305 scientific communications: 204 articles, some of which were original scientific articles, review articles, professional articles, conference contributions and interviews; 12 monographs, some of which were master's and undergraduate theses, patent applications and patents; 33 public communications, including radio and television programs, invited lectures and unpublished conference contributions; and 56 secondary authorships, including as journal editors and thesis mentors.

The 90 original scientific articles published in 2020 doubles last year's output. Sixty-five percent of these articles were written in collaboration with foreign authors, mainly from Australia, Croatia, Italy and Spain. Among the 23 review articles published, 39 percent were in collaboration with foreign authors, and one-third of the 49 scientific conference contribution abstracts published were in collaboration with authors from abroad.

InnoRenew CoE employee publications were cited (pure citations) 6,665 times in Web of Science and 4,002 in Scopus last year.

Original scientific article

1. [ASLAM, Sidra](#), MANSOOR, Ahmed, IMRAN, Ahmed, KHAN, Abid, AWAIS, Ahmad, IMRAN, Muhammad, ANJUM, Adeel, HUSSAIN, Shahid. OBAC : towards agent-based identification and classification of roles, objects, permissions (ROP) in distributed environment. Multimedia tools and applications, ISSN 1380-7501, 2020, vol. 79, str. 34363-34384.
2. BÁDER, Mátyás, NÉMETH, Róbert, [SANDAK, Jakub Michal](#), [SANDAK, Anna Malgorzata](#). FTIR analysis of chemical changes in wood induced by steaming and longitudinal compression. Cellulose, ISSN 0969-0239, 2020, vol. 27, str. 6811-6829.
3. BALASSO, Michelle, [KUTNAR, Andreja](#), [PRELOVŠEK NIEMELÄ, Eva](#), [MIKULJAN, Marica](#), NOLAN, Gregory, KOTLAREWSKI, Nathan, HUNT, Mark, JACOBS, Andrew, O'REILLY, Julianne. Wood properties characterisation of thermo-hydro mechanical treated plantation and native tasmanian timber species. Forests, ISSN 1999-4907, 2020, iss. 11, article 1189, str. 1-15.
4. BARTHA, Miklós, [KRÉSZ, Miklós Ferenc](#). On the König deficiency of zero-reducible graphs. Journal of combinatorial optimization, ISSN 1382-6905, 2020, vol. 39, str. 273-292.
5. BEEZLEY, Kenneth E., DAHLE, Gregory, MIESBAUER, Jason, [DEVALLANCE, David Brian](#). Strain patterns across the root-stem transition zone in urban trees. Arboriculture & urban forestry, ISSN 1935-5297, 2020, vol. 46, no. 5, str. 321-332.
6. [BILOSLAVO, Roberto](#), BAGNOLI, Carlo, MASSARO, Maurizio, COSENTINO, Antonietta. Business model transformation toward sustainability : the impact of legitimation. Management Decision, ISSN 0025-1747, str. 1-20.
7. BRABEC, Martin, MILCH, Jaromír, ČERMÁK, Petr, DĚCKÝ, David, [SEBERA, Václav](#), TIPPNER, Jan. Neutral axis in thermally modified timber determined by image-based approach. Journal of testing and evaluation, ISSN 0090-3973, 2020, vol. 48, no. 4, str. 3324-3330.

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 2020 prispevali 305 enot s področja znanstvenega komuniciranja. Te vključujejo: 204 člankov in drugih prispevkov (izvirni znanstveni članki, pregledni znanstveni članki, strokovni članki, konferenčni prispevki, intervjuji itd.), 12 monografij in drugih del (dodiplomska in magistra dela, prijave patentov, patenti itd.), 33 radijskih in televizijskih nastopov, vabljenih predavanj in neobjavljenih konferenčnih prispevkov ter vabljenih konferenčnih predavanj, poleg tega pa še 56 del s sekundarnim avtorstvom (revijalni urednik, mentor pri zaključnih nalogah).

Leta 2020 so raziskovalci objavili 90 izvirnih znanstvenih člankov, kar je skoraj dvakrat več kot leta 2019. Med temi članki jih je 65 odstotkov pripravljenih v soavtorstvu z raziskovalci iz tujine, najpogosteje iz Avstralije, Hrvaške, Italije in Španije. Med 23 objavljenimi preglednimi članki je 39 odstotkov takih, ki so nastali v sodelovanju s tujimi avtorji, med 49 objavljenimi znanstvenimi konferenčnimi prispevki pa je takih ena tretjina.

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

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Revenue

In 2020, InnoRenew CoE revenues totalled €3,411,213. Of this, 48.96 percent was from the EU's Horizon2020 Framework Programme (H2020 Widespread-2-Teaming: #739574), 21.09 percent was from the Republic of Slovenia (investment funding from the Republic of Slovenia and the EU's European Regional Development Fund), 10.31 percent was from EU projects, 6.58 percent was from other international projects, 6.4 percent was earned from market services, 0.13 percent was from international traveling grants (COST Actions), 2.53 percent was from national projects, 3.95 percent was funded by the Slovenian Research Agency (ARRS) and 0.06 percent was from Living Lab InnoRenew activities.

Investment into infrastructure was €4,818,481.

Prihodki

V letu 2020 je imel InnoRenew CoE 3.411.213 evrov prihodkov. Od tega je 48,96 odstotka prihodkov od okvirnega programa Evropske Unije Obzorje 2020 (H2020WIDESPREAD-2-Teaming; #739574), 21,09 odstotka od Republike Slovenije (Financiranje naložb Republike Slovenije in Evropske unije v okviru Evropskega sklada za regionalni razvoj), 10,31 odstotka od pridobljenih evropskih projektov, 6,58 odstotka od drugih mednarodnih projektov, 6,4 odstotka od izvajanja storitev na trgu, 0,13 odstotka od akcij COST, 2,53 odstotka od nacionalnih projektov, 3,95 odstotka od projektov ARRS ter 0,06 odstotka od dejavnosti Živega laboratorija.

Za investicijo v infrastrukturo je InnoRenew CoE leta 2020 namenil 4.818.481 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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