PROZEL | Forecasting threats to forest ecosystems using an innovative system for the recognition of odours

Innovative R&D project developing odor-based system (electronic nose) based on sensors with high sensitivity and AI to monitor selected, particularly dangerous forest pests.

The threat of forests by various harmful microorganisms is growing due to changing climate conditions and spreading of non-native pathogens and pests.. Simultaneously the relevance of biological methods of monitoring and preventing forest degradation is increasing in the face of the chemical's use restrictions. The main aim of the project is the development of an innovative device (electronic nose/ e-NOS), based on a matrix of broad-band electrochemical sensors and neural networks that would detect and analyse the odor-based signals e.g. pheromones of certain insect species. The examples of pathogens and pests addressed in the project include Dendrolimus Pini (L.) and Phytophthora oomycetes.

The developed system delivers comprehensive and complex information which allows to create a neural classifier (using artificial intelligence). The dedicated software was developed to perform the analysis of the data and create a database – library of signals, which will allow to detect the analytes sought in the field. For each application foreseen in the project (analysis of specific smells), dedicated sensory matrices were prepared.

DETALJI

PODRIJETLO DRVA

Šuma

VRSTA DRVA

--

ODGOVARAJUĆA VRSTA DRVA

--

UTJECAJ NA OKOLIŠ I BIORAZNOLIKOST

--

UČINAK NA PRIHOD

--

POTENCIJAL ISKORISTIVOSTI

--

SREDIŠTE

Centralno-istočno čvorište

GOSPODARSKI UČINAK

--

POTREBNA POSEBNA ZNANJA

--

POTENCIJAL ZA POVEĆANJE UPORABE DRVA

--

POTENCIJAL ODRŽIVOSTI - VRIJEDNOST

--

JEDNOSTAVNOST PROVEDBE

--

JEDNOSTAVNOST PROVEDBE - EVALUACIJA

--

KLJUČNI PREDUVJETI

--

VRSTA DOGAĐAJA NA KOJEM JE PRIKAZAN OVAJ BPI

--

UČINAK NA ZAPOŠLJIVOST

--

TROŠKOVI PROVEDBE (EURO - €)

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VIŠE DETALJA

IZAZOV

1. Poboljšanje otpornosti šuma i prilagodbe klimatskim promjenama

DOMENA

Popis, procjena, praćenje

Nepovoljni prirodni uvjeti, rizici, odgovor na katastrofe

VRSTA RJEŠENJA

Senzori, mjerna oprema

KLJUČNE RIJEČI

pests

sensors

forest threats

DIGITALNO RJEŠENJE

Da

INOVACIJA

Da

ZEMLJA PODRIJETLA

Poljska

PODRUČJE PRIMJENE

Nacionalna

POČETAK I KRAJ GODINE

2018 - 2021

KONTAKT PODATCI

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REFERENCES AND RESOURCES

GLAVNA WEB STRANICA

http://prozel.fizyka.pw.edu.pl/

WEB STRANICA PROJEKTA

http://prozel.fizyka.pw.edu.pl/

REFERENCA PROJEKTA

Forecasting threats to forest ecosystems through the implementation of an

IZVORI

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innovative electronic system for the recognition of odors, co-financed by National Center for Research and Development (BIOSTRATEG III programme), 2018-2021, grant no. BIOSTRATEG3/347105/9/NCBR/2017

LOGO PRIMJERA DOBRE PRAKSE

LOGO GLAVNE ORGANIZACIJE

PROJEKT U OKVIRU KOJEG JE INFORMATIVNI LIST KREIRAN

Rosewood 4.0

DATUM UNOSA

12 kol 2021

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A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY