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.

PODROBNOSTI

PôVOD DREVA

Les

DRUH DREVA

--

MOBILZAčNý POTENCIáL

--

POTENCIáL UDRŽATEĽNOSTI - HODNOTA

--

UVAŽOVANý DRUH DREVA

--

UľAHČENIE IMPLMENTáCIE

--

VPLYV NA ŽIVOTNé PROSTREDIE A BIODIVERZITU

--

UľAHČENIE IMPLMENTáCIE - HODNOTENIE

--

DOPAD NA PRíJMY

--

KľúčOVé PREPOKLADY

--

POTENCIáL VYUŽITIA

--

TYP PODUJATIA, NA KTOROM BOL TENTO BPI PREZENTOVANý

--

ROZBOčOVAč

Stredovýchodný uzol

DOPAD NA ZAMESTNANOSť

--

EKONOMICKý VPLYV

--

NáKLADY NA IMPLEMENTáCIU (EURO - €)

--

POTREBA šPECIFICKýCH ZNALOSTí

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VIAC INFORMáCIí

RIEšENá VýZVA

1. Zlepšenie odolnosti lesov a adaptácie na zmenu klímy

DOMAIN

Inventarizácia, posudzovanie, monitoring/monitorovanie

Disturbancie/kalamity, riziká, odpoveď na katastrofu

TYP RIEšENIA

Senzory, meracie prístroje/meracie vybavenie

KľúčOVé SLOVá

pests

sensors

forest threats

DIGITALNE RIEšENIE

áno

INOVáCIE

Áno

KRAJINA PôVODU

Poľsko

ROZSAH APLIKáCIE

Národný

ZAčIATOK A KONIEC ROKA

2018 - 2021

KONTAKTNé úDAJE

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REPORTéR

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REFERENCES AND RESOURCES

HLAVNá WEBSTRáNKA

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

PROJEKTOVá WEBSTRáNKA

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

REFERENCIA PROJEKTU

Forecasting threats to forest ecosystems through the implementation of an

ZDROJE

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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 NAJLPEŠEJ PRAXE

LOGO HLAVNEJ ORGANIZáCIE

PROJEKT, V RáMCI KTORéHO BOL TENTO INFORMAčNý PREHľAD VYTVORENý

Rosewood 4.0

DáTUM ODOSLANIA

12 aug 2021

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