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.

DETALII

SURSA DE LEMN

Pădure

TIPUL DE LEMN

--

TIPUL DE LEMN îN CAUZă

--

IMPACTUL ASUPRA MEDIULUI șI BIODIVERSITățII

--

EFECT ASUPRA VENITURILOR

--

POTENțIAL DE EXPLOATARE

--

HUB

Hub central-est

IMPACT ECONOMIC

--

CUNOșTINțE SPECIFICE NECESARE

--

POTENțIALUL DE MOBILIZARE

--

POTENțIAL DE SUSTENABILITATE - VALOARE

--

FACILITATEA DE IMPLEMENTARE

--

FACILITATEA DE IMPLEMENTARE - EVALUARE

--

CONDIțII CHEIE PREALABILE

--

TIPUL DE EVENIMENT LA CARE A FOST PREZENTAT ACEST IPB

--

EFECT ASUPRA LOCURILOR DE MUNCă

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COSTURI PENTRU IMPLEMENTARE (EURO - €)

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MAI MULTE DETALII

PROVOCARE ABORDATă

1. Îmbunătățirea rezilienței pădurilor și adaptarea la schimbările climatice

DOMAIN

Inventariere, evaluare, monitorizare

Perturbări ale pădurilor, riscuri, răspuns la dezastre

TIP DE SOLUȚIE

Senzori, echipamente de măsurare

CUVINTE CHEIE

pests

sensors

forest threats

SOLUȚIE DIGITALă

Da

INOVAȚIE

Da

ȚARA DE ORIGINE

Polonia

SCARA DE APLICARE

Național

ANUL DE îNCEPUT ȘI DE SFâRȘIT

2018 - 2021

DATE DE CONTACT

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REFERENCES AND RESOURCES

PAGINă WEB

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

WEBSITE PROJECT

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

REFERINță PROIECT

Forecasting threats to forest ecosystems through the implementation of an innovative electronic system for the recognition of odors, co-financed by National

RESURSE

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DESPRE EXEMPLUL DE BUNă PRACTICă

A PRINCIPALEI ORGANIZAțII

PROZEL

PROIECTUL îN CADRUL CăRUIA A FOST CREATă ACEASTă FIșă INFORMATIVă

Rosewood 4.0

DATA POSTăRII

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A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY

cesefor
Centro de Servicios y Promoción Forestal y de su Industria de Castilla y León