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.

DETALJER

VEDENS URSPRUNG

Skog

TRäTYP

--

TYP AV TRä

--

PåVERKAN På MILJö & BIOLOGISK MåNGFALD

--

EKONOMISK EFFEKT

--

KOMMERSIELL POTENTIAL

--

NAV

Centrala och östra navet

EKONOMISK PåVERKAN

--

SPECIFIKA KUNSKAPSBEHOV

--

MOBILISERINGSPOTENTIAL

--

HåLLBARHETS POTENTIAL - VäRDE

--

ENKEL IMPLEMENTERING

--

ENKEL IMPLEMENTERING - UTVäRDERING

--

NYCKEL FöRUTSäTTNINGAR

--

TYP AV EVENEMANG DäR DENNA BPI HAR PRESENTERATS

--

EFFEKT ANTAL ANSTäLLDA

--

KOSTNADER FöR IMPLEMENTERING (EURO - €)

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MER INFORMATION

UTMANING SOM ADRESSERAS

1. Förbättra skogens motståndskraft och anpassning till klimatförändringar

NYCKELORD

pests

sensors

forest threats

UPPHOVSLAND

Polen

DOMäN

Inventering, värdering, övervakning

Skogsskador, risker, katastrofberedskap

DIGITAL LöSNING

Ja

POTENTIAL

Nationell

TYPE AV LöSNING

Sensorer, mätinstrument

INNOVASION

Ja

START OCH SLUTåR

2018 - 2021

KONTAKT INFORMASION

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RAPPORTöR

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REFERENCES AND RESOURCES

HEMSIDA (HUVUDSIDA)

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

PROJEKTETS HEMSIDA

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

PROJEKTREFERENS

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

RESURSER

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LOGO FöR BEST PRACTICE

LOGO, HUVUDORGANISATION

PROZEL

PROJEKT SOM DETTA FACTSHEET SKAPATS INOM

Rosewood 4.0

DATUM FöR INLäGG

12 aug 2021

ROSEWOOD 4.0 Sustainable Wood for Europe

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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