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

OPPRINNELSE FOR TRE

Skog

TYPE TRE

--

TYPE TRE INVOLVERT

--

PåVIRKNING På MILJø OG BIOLOGISK MANGFOLD

--

INNTEKTSEFFEKT

--

UTNYTTELSESPOTENSIAL

--

HUB

Central-East Hub

ØKONOMISK PåVIRKNING

--

SPESIFIKKE KUNNSKAPSBEHOV

--

MOBILISERINGSPOTENSIAL

--

BæREKRAFTPOTENSIAL - VERDI

--

ENKEL IMPLEMENTERING

--

ENKEL IMPLEMENTERING - EVALUERING

--

VIKTIGE FORUTSETNINGER

--

TYPE BEGIVENHET DER DENNE BPI HAR BLITT OMTALT

--

EFFEKT På ARBEIDSPLASSER

--

KOSTNADER MED IMPLEMENTERING (EURO - €)

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MER INFORMASJON

UTFORDRING ADRESSERT

1. Forbedre skogens robusthet og tilpasningsevne til klimaendringer

DOMENE

Inventering, vurdering, overvåking

Skogskader, risiko, katastrofeberedskap

TYPE LøSNING

Sensorer, måleinstrumenter

NøKKELORD

pests

sensors

forest threats

DIGITAL LøSNING

Ja

INNOVASJON

Ja

OPPRINELSESLAND

Polen

POTENSIALE

Nasjonal

START OG SLUTT åR

2018 - 2021

KONTAKT INFORMASJON

EIER ELLER FORFATTER

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RAPPORTøR

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REFERENCES AND RESOURCES

HJEMMESIDE (HOVEDSIDE)

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

PROSJEKTETS HJEMMESIDE

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

REFERANSE TIL PROSJEKT

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RESSURSER

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LOGO FOR BESTE PRAKSIS

LOGO FOR HOVEDORGANISASJON

PROSJEKT SOM DETTE FAKTAARKET ER OPPRETTET UNDER

Rosewood 4.0

INNLEGGSDATO

12 aug 2021

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Link to Rosewood 4.0

A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY