

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.

DETALLES

ORIGEN DE LA MADERA

Bosque

TIPO DE MADERA

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TIPO DE MADERA AFECTADA

--

IMPACTO EN EL MEDIO AMBIENTE Y LA BIODIVERSIDAD

--

EFFECTO SOBRE LOS INGRESOS

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POTENCIAL DE EXPLOTACIÓN

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HUB

Eje Centro-Este

IMPACTO ECONÓMICO

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CONOCIMIENTOS ESPECÍFICOS NECESARIOS

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POTENCIAL DE MOVILIZACIÓN

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POTENCIAL DE SOSTENIBILIDAD - VALOR

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FACILIDAD DE APLICACIÓN

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FACILIDAD DE IMPLEMENTACIÓN - EVALUACIÓN

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PREREQUISITOS CLAVE

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TIPO DE EVENTO EN EL QUE SE HA PRESENTADO ESTA IFS

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EFFECTO SOBRE EL EMPLEO

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COSTES DE IMPLEMENTACIÓN (EURO - €)

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MÁS DETALLES

RETO ABORDADO

1. Mejorar la resistencia y la adaptación de los bosques al cambio climático

DOMINIO

Inventario, evaluación, seguimiento
Perturbaciones forestales, riesgos, respuesta a desastres

TIPO DE SOLUCIÓN

Sensores, equipos de medición

PALABRAS CLAVE

pests
sensors
forest threats

SOLUCIÓN DIGITAL

Sí

INNOVACIÓN

Si

PAÍS DE ORIGEN

Polonia

ESCALA DE APLICACIÓN

Nacional

AÑO DE INICIO Y FIN

2018 - 2021

DATOS DE CONTACTO

PROPIETARIO O AUTOR

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REFERENCES AND RESOURCES

SITIO WEB PRINCIPAL

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

SITIO WEB DEL PROYECTO

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

REFERENCIA DEL PROYECTO

Forecasting threats to forest ecosystems through the implementation of an

RECURSOS

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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 DE LA BUENA PRÁCTICA

LOGOTIPO DE LA ORGANIZACIÓN PRINCIPAL



PROYECTO BAJO EL QUE SE HA CREADO ESTA FICHA

Rosewood 4.0

FECHA DE MENSAJE

12 Ago 2021



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A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY

