


PROZEL | Forecasting threats to forest ecosystems using an innovative system for the recognition of odours



Forecasting threats to forest ecosystems through the implementation of an innovative electronic system for the recognition of odors.

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.

DETTAGLI

ORIGINE DEL LEGNO

foresta

TIPO DI LEGNO

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TIPO DI LEGNO IN QUESTIONE

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IMPATTO SULL'AMBIENTE E LA BIODIVERSITÀ

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EFFETTO SUL REDDITO

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POTENZIALE DI SFRUTTAMENTO

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HUB

Polo Centro-Est

IMPATTO ECONOMICO

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CONOSCENZE SPECIFICHE NECESSARIE

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POTENZIALE DI MOBILITAZIONE

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POTENZIALE SOSTENIBILITÀ - VALORE

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FACILITÀ DI IMPLEMENTAZIONE

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FACILITÀ DI IMPLEMENTAZIONE - VALUTAZIONE

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PREREQUISITI CHIAVE

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TIPO DI EVENTO IN CUI QUESTO BPI È STATO PRESENTATO

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EFFETTO SUL LAVORO

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I COSTI DI ATTUAZIONE (EURO - €)

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PIÙ DETTAGLI

SFIDA RISOLTA

1. Migliorare la resilienza delle foreste e l'adattamento ai cambiamenti climatici

PAROLE CHIAVE

pests
sensors
forest threats

PAESE D'ORIGINE

Polonia

DOMINIO

Inventario, la valutazione, il monitoraggio disturbi della foresta, i rischi, risposta ai disastri

SOLUZIONE DIGITALE

Sì

TIPO DI SOLUZIONE

I sensori, apparecchi di misura

INNOVAZIONE

Sì

SCALA DI APPLICAZIONE

Nazionale

INIZIO E FINE ANNO

2018 - 2021

CONTATTI

PROPRIETARIO O AUTORE

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REFERENCES AND RESOURCES

SITO PRINCIPALE

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

SITO WEB DEL PROGETTO

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

PROGETTO DI RIFERIMENTO

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RISORSE

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LOGO DELLE MIGLIORI
PRATICHE

LOGO DELLA PRINCIPALE
ORGANIZZAZIONE



PROGETTO NELL'AMBITO DEL QUALE QUESTA SCHEDA è STATA CREATA

Rosewood 4.0

DATA DI INSERIMENTO

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A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY

