

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.

DETAILS

HERKUNFT DES HOLZES

Wald

ART DES HOLZES

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MOBILISIERUNGSPOTENZIAL

--

ART DES BETROFFENEN HOLZES

--

LEICHTE IMPLEMENTIERUNG

--

AUSWIRKUNGEN AUF UMWELT UND BIODIVERSITÄT

--

LEICHTE IMPLEMENTIERUNG - BEWERTUNG

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EINKOMMENSEFFEKT

--

WICHTIGE VORAUSSETZUNGEN

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VERWERTUNGSPOTENZIAL

--

ART DER VERANSTALTUNG, AUF DER DIESE BPI VORGESTELLT WURDE

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NABE

Drehscheibe Mitte-Ost

ARBEITSPLATZEFFEKT

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WIRTSCHAFTLICHE AUSWIRKUNGEN

--

KOSTEN DER IMPLEMENTIERUNG (EURO - €)

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SPEZIFISCHES WISSEN ERFORDERLICH

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MEHR DETAILS

ANGESPROCHENE HERAUSFORDERUNG	DOMÄNE	ART DER LÖSUNG
1. Verbesserung der Widerstandsfähigkeit der Wälder und ihrer Anpassung an den Klimawandel	Bestandsaufnahme, Bewertung, Überwachung Waldstörungen, Risiken, Katastrophenschutz	Sensoren, Messgeräte
SCHLÜSSELWÖRTER	DIGITALE LÖSUNG	INNOVATION
pests	Ja	Ja
sensors		
forest threats		
HERKUNFTSLAND	UMFANG DER ANWENDUNG	ANFANGS- UND ENDJAHR
Polen	National	2018 - 2021

KONTAKTDATEN

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REFERENCES AND RESOURCES

HAUPT-WEBSITE	RESSOURCEN
http://prozel.fizyka.pw.edu.pl/	--
PROJEKT-WEBSITE	
http://prozel.fizyka.pw.edu.pl/	
PROJEKT-REFERENZ	
Forecasting threats to forest ecosystems through the implementation of an innovative electronic system for the recognition of odors, co-financed by National	

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LOGO DER BEST PRACTICE



LOGO DER
HAUPTORGANISATION

PROJEKT, IN DESSEN RAHMEN DIESES FACTSHEET ERSTELLT WURDE

Rosewood 4.0

BEITRAGSDATUM

12 Aug. 2021



[Link to Rosewood 4.0](#)



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A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY



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