

# 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

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VEDENS URSPRUNG	MOBILISERINGSPOENTIAL
Skog	--
TRÄTYP	HÅLLBARHETS POTENTIAL - VÄRDE
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TYP AV TRÄ	ENKEL IMPLEMENTERING
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PÅVERKAN PÅ MILJÖ & BIOLOGISK MÅNGFALD	ENKEL IMPLEMENTERING - UTVÄRDERING
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EKONOMISK EFFEKT	NYCKEL FÖRUTSÄTTNINGAR
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KOMMERSIELL POTENTIAL	TYP AV EVENEMANG DÄR DENNA BPI HAR PRESENTERATS
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NAV	EFFEKT ANTAL ANSTÄLLDA
Centrala och östra navet	--
EKONOMISK PÅVERKAN	KOSTNADER FÖR IMPLEMENTERING (EURO - €)
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SPECIFIKA KUNSKAPSBEHOV	
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## MER INFORMATION

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### 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, mästinstrument

### INNOVATION

Ja

### START OCH SLUTÅR

2018 - 2021

## KONTAKT INFORMASION

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### ÄGARE ELLER FÖRFATTARE

Warsaw University of Technology, Faculty of Physics

Warsaw University of Technology, Faculty of Physics

prozel@pw.edu.pl

<https://www.pw.edu.pl/>

### RAPPORTÖR

Łukasiewicz Research Network - Wood Technology Institute (ITD)

Dobrochna Augustyniak-Wysocka

[dobrochna.augustyniak@itd.lukasiewicz.gov.pl](mailto:dobrochna.augustyniak@itd.lukasiewicz.gov.pl)

## REFERENCES AND RESOURCES

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### 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

PROJEKT SOM DETTA FACTSHEET SKAPATS INOM  
Rosewood 4.0

DATUM FÖR INLÄGG  
12 aug 2021



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A TOOL FROM ROSEWOOD 4.0, DESIGNED AND DEVELOPED BY



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