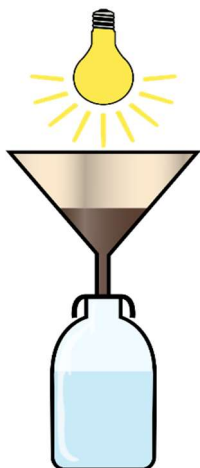


## TECHNOLOGY OFFER

# TRANSPORTABLE, ENERGY & COST EFFICIENT BERLESE APPARATUS

### Background



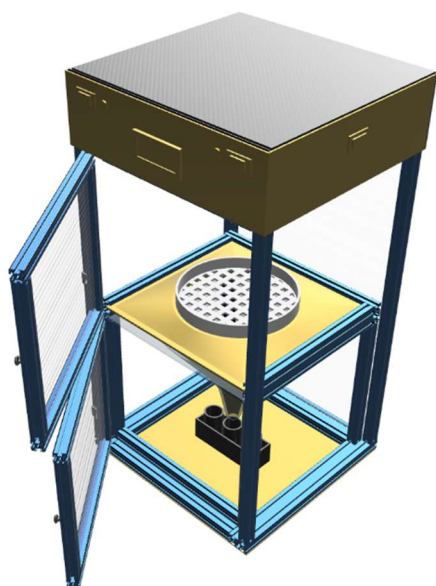
Conventional Berlese apparatus © Wikipedia

A Berlese apparatus is used to extract living organism from samples of soil. The Berlese apparatus was first described in 1905 and consists of a funnel containing the soil. An electrical lamp heats the soil. To prevent dehydration the living organisms, descend inside the funnel until they pass a filter and fall into a preservative liquid. The disadvantages of this setup are:

- electric light bulbs for heating are very energy inefficient
- no temperature control
- uneven heat distribution

### Patent application – improved Berlese Box

To overcome these disadvantages of the conventional apparatus and with the main aim of saving energy an improved Berlese Box was developed. A drawing of the designed Berlese Box can be found below. The main advantages of the new Berlese Box are listed here:



Improved Berlese Box  
© Picture: Uni Graz/Pascher

### ADVANTAGES

- Energy and cost efficient
- Closed system with housing for a controlled temperature and minimized energy loss to the environment
- Uniform heat distribution on the surface of the soil sample achieved by heating and ventilation system
- Transportable apparatus for examination of soil samples in the field
- Power supply through rechargeable batteries
- Color and light intensity variable LEDs provide a controlled light exposure of the soil samples
- Humidity control due to moisture absorption system
- Fully monitored and controlled system

### Goal of the University of Graz

- Improved environmental sustainability of the Berlese Box in comparison to the conventional Berlese apparatus
- Energy savings
- Find a partner for production and distribution of the Berlese Box

### KEYWORDS:

BERLESE APPARATUS  
ENERGY EFFICIENT  
COST EFFICIENT  
TEMPERATURE CONTROL  
LIGHT CONTROL  
HOUSING BOX  
TRANSPORTABLE  
SOIL  
LIVING ORGANISMS  
INSECTS

### CREATOR:

PASCHER, HARALD

### COOPERATION OPTIONS:

LICENSING AGREEMENT  
RESEARCH COOPERATION  
AGREEMENT

### DEVELOPMENT STATUS:

FIVE PROTOTYPES BUILD,  
LAB TESTS SUCCESSFUL

### STATUS OF PATENT:

PATENT FILED

### PROJECT NUMBER:

2023\_02

### CONTACT:

Technology Transfer Office  
University of Graz  
Research Management & Service  
Universitätsplatz 3  
8010 Graz / Austria  
[transfer@uni-graz.at](mailto:transfer@uni-graz.at)

[www.uni-graz.at](http://www.uni-graz.at)