

# MICROWAVE-ASSISTED LEACHING OF PRECIOUS METALS FROM END OF LIFE PRODUCTS – EU H2020 PEACOC PROJECT

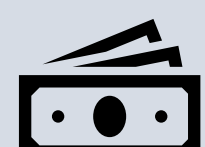
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1 May 2021 – 30 April 2025



€11.2 million EU budget



20 partners from 9 countries



<https://www.peacoc-h2020.eu>

Pre-commercial pilot for the efficient recovery of Precious Metals from European end of life resources with novel low-cost technologies

End of life products



Autocatalysts

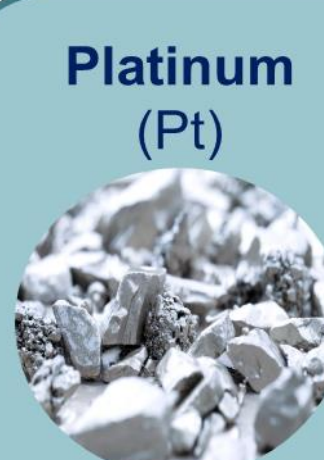


PCBA

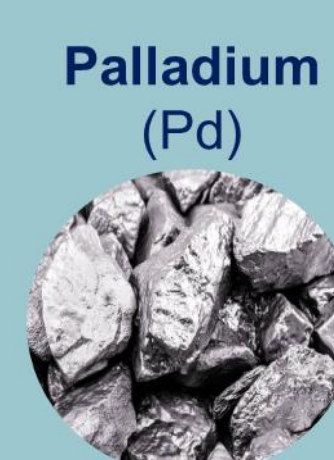


PV panels

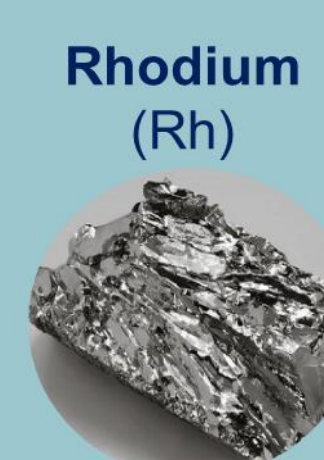
Metals of interest



Platinum (Pt)



Palladium (Pd)



Rhodium (Rh)



Gold (Au)



Silver (Ag)

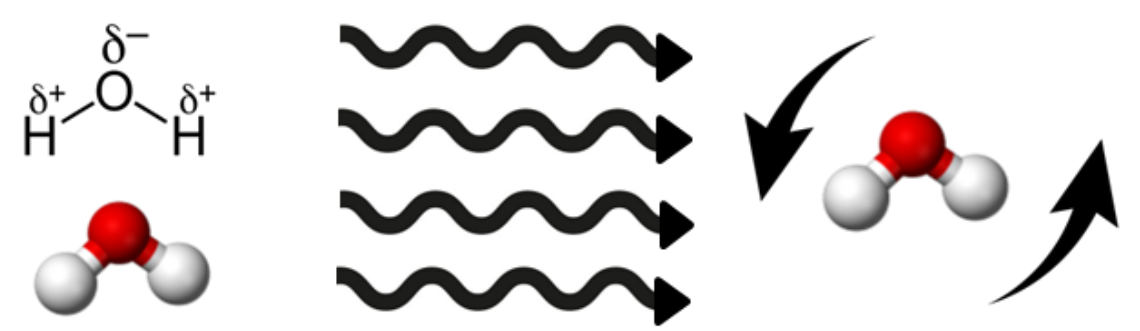
Platinum Group Metals (PGMs)

Physico-chemical pre-treatment

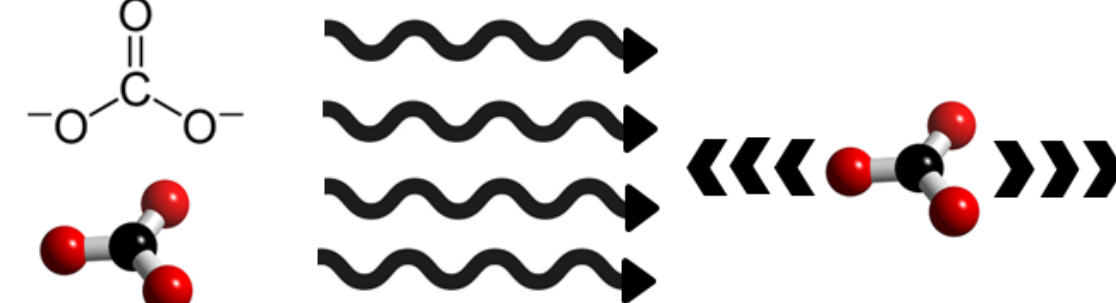


Recovery of metals from solutions

Dipolar polarization



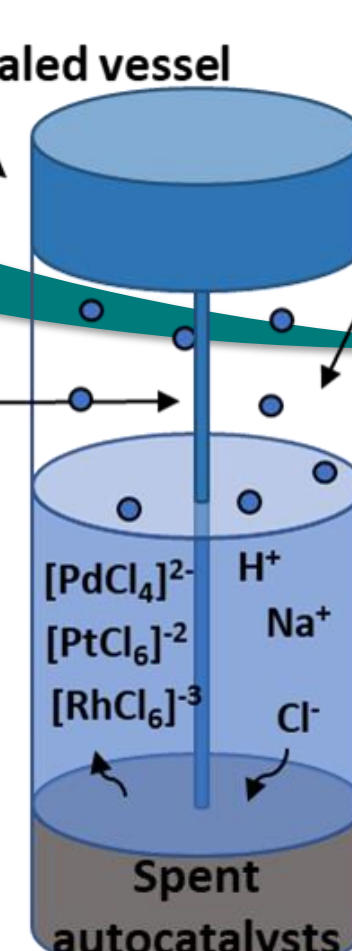
Displacement of ions



MW heating principles

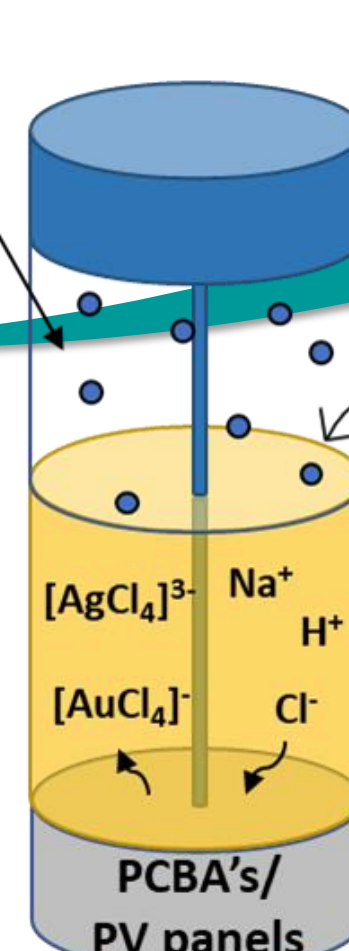
Pressure sealed vessel (Teflon)

T probe



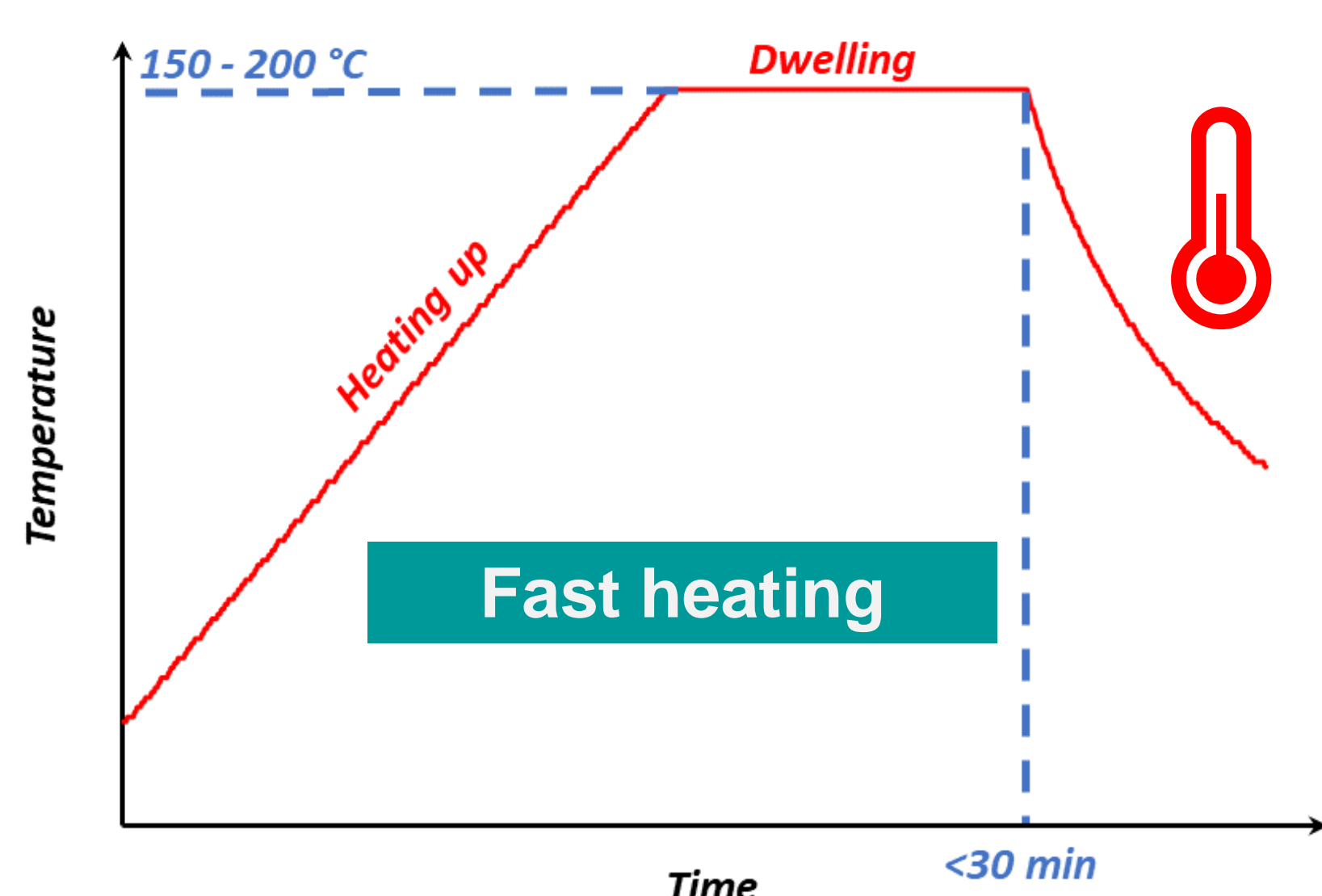
Hydrothermal conditions

MW



Microwave assisted leaching

## Key findings of microwave-assisted leaching within PEACOC project



High metal extraction

- 84 % Pd; 98% Pt and 92% Rh were extracted from spent autocatalysts
- >95 % extraction of Ag and Au from PCBAs and PV panels
- Improved selectivity
- Temperature - important parameter for Pt and Rh extraction

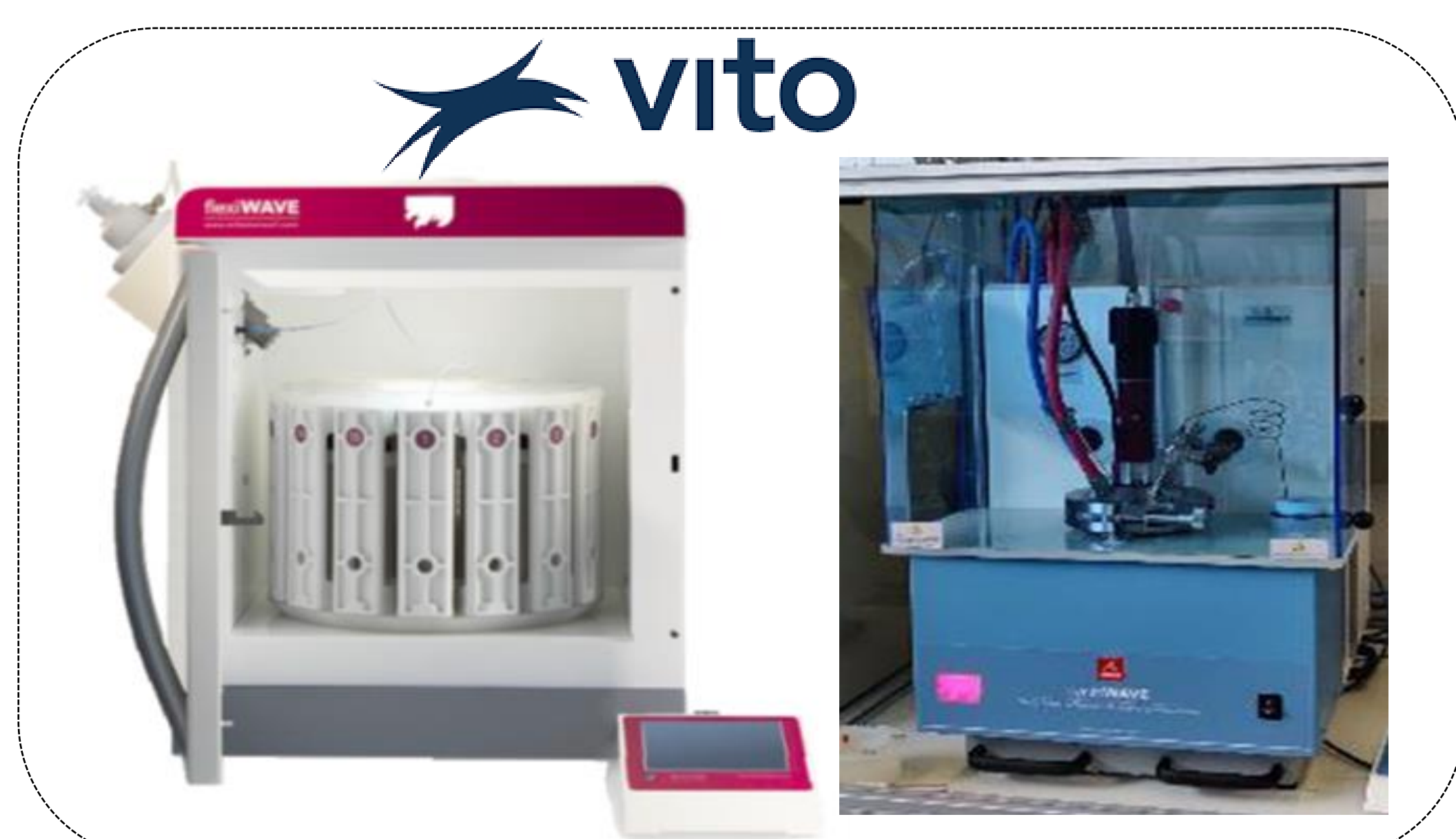
Lower consumption of chemicals

- Significant reduction in HCl consumption
- In case of PGMs no oxidation agent necessary

Electrification of processes

- Possibility to couple with renewable energy sources

## Upscaling microwave-assisted leaching technology within the PEACOC project



Amount of sample treated

3 – 5 g / batch

30 – 50 g / batch

150 – 300 g / batch

5 – 10 kg / hour (continuous)

Laboratory scale  
TRL 4

Upscaling  
TRL 5 – 6

Pilot scale  
TRL 7