

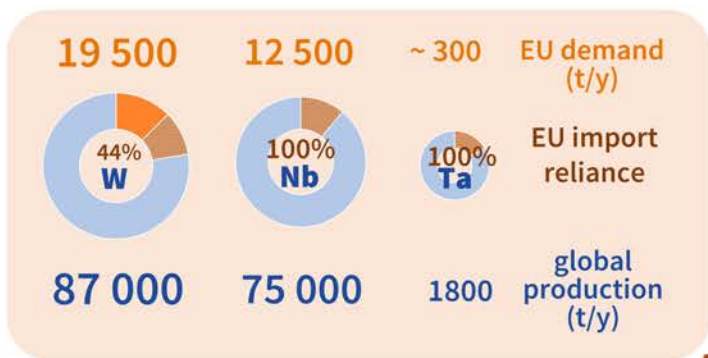
Recovery of Tungsten, Niobium and Tantalum occurring as by-products in mining and processing waste streams



Why W, Nb and Ta?

Tungsten (W), niobium (Nb) and tantalum (Ta) are **refractory metals** displaying extraordinary chemical, heat and wear resistance but are listed as **Critical Raw Materials** by the European Commission.

Although the usage of W, Nb and Ta is small, they are essential in applications including **capacitors** for **mobile phones** and **hearing aids**, **high-strength steel** for **pipelines**, **superconducting magnets** for **MRI machines** and **carbides** for **cutting tools** and **drilling bits**.



Did you know?

Tantalum is named after the Greek god Tantalus, who was condemned to eternal frustration, because this element is so resistant to acid. Niobium is named after Niobe, the daughter of Tantalus [1].



The **TARANTULA** project aims to reduce the dependence of the EU on refractory metal imports by valorizing unconventional European resources. Novel metallurgical technologies are developed to increase the recovery rates and selectivity to finally unlock the metals from resources that are currently considered as waste.

Project information

Grant agreement ID: 821159

Ongoing

1 June 2019 – 31 May 2023 (48 M)

6.9 MEUR

Coordinator: TECNALIA (Spain)



Consortium:

16 partners covering the whole value chain



▲ Dumps of flotation residue from tungsten mining (Salau, France) still contain a high value in tungsten [2].



◀ Microwave-assisted fusion is developed in TARANTULA to increase recovery of W, Nb and Ta [3].

How will TARANTULA achieve this?

- Build a broad overview of W, Nb and Ta-bearing EU resources.
- Develop a toolkit of novel, efficient and flexible metallurgical technologies for sustainable W, Nb, and Ta recovery.
- Selection of the optimal flowsheet and prototype validation (WP6-7).
- Strengthen citizen trust in mineral processing.



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<https://h2020-tarantula.eu>

Sources

- [1] TIC (<https://www.tanb.org/index>)
 - [2] ©BRGM
 - [3] <https://www.milestonesrl.com/products/microwave-ashing/pyro-sulphate-ashing>
- [3] icons by The Noun Project