

**IDENER**

Optimización orientada a la sostenibilidad S.L.  
Sevilla, Spain

**ABOUT**

IDENER is a high-tech research intensive SME originally rooted in a leading Systems and Control Engineering R&D group at the University of Seville's School of Engineering. One of its most distinguishing traits is the sound scientific background of its research team, which is now specialised in a number of disciplines: chemical engineering, electrical and computer science, systems and control engineering, industrial engineering and telecommunications engineering.

IDENER aims to incorporate advanced design and optimisation tools and skills from the early development phases of new systems to process scale-up and prototype demonstration. To that end, the company integrates concepts from four interrelated and complementary areas of knowledge: Mathematical Modelling and Simulation; Multidisciplinary Design Optimisation; Control Engineering; and Software Engineering. This way IDENER carries out their commercial activity through private contracts but also through their participation in R&D funded projects, reinforcing its position as an innovative technological base SME.

**EXPERTISE**

IDENER applies the knowledge from previous areas to several research specialties, one of them being *Resource and Raw materials efficiency*. Specifically, their main activities in this area are:

- Extraction and recovery of raw materials, especially from secondary sources. An example of this application is the recovery of Germanium from fly ash or REE from wastes
- Study and development of new approaches for extraction based in the use of ionic liquids
- Tools for effective decision making and public engagement through the integration of knowledge and decision support frameworks (algorithms)
- Process monitoring and modelling, e.g. modelling of the Copper leaching process and its optimisation at industrial scale
- Multidisciplinary Design Optimisation (MDO) of mineral processing. Use of such information for conceptual and basic engineering
- Knowledge improvement on the availability of raw materials

- Fostering of resource efficiency through digital systems

Moreover, IDENER is member of A. SPIRE and has participated in several EIP Raw Material commitments, as well as in proposals related to raw materials and mineral processing. This confirms the company's proactivity in the area and its capacity to further develop raw material extraction and recycling processes.

**FACILITIES & SERVICES**

IDENER's activities in the aforementioned areas are carried out at the company's facilities, which comprise:

- Laboratory for metal extraction and recovery facilities
- Prototype/test-bench laboratory for integrating technologies and building test-bench or prototypes
- Software infrastructure for mathematical models development and simulation, Multidisciplinary Design Optimisation and Decision Support System development
- Test-bench for embedded control hardware testing

**MORE INFORMATION**

Website: [www.idener.es](http://www.idener.es)

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