

Spanish National Research Center for Metallurgy (CENIM) Spanish National Research Council (CSIC)

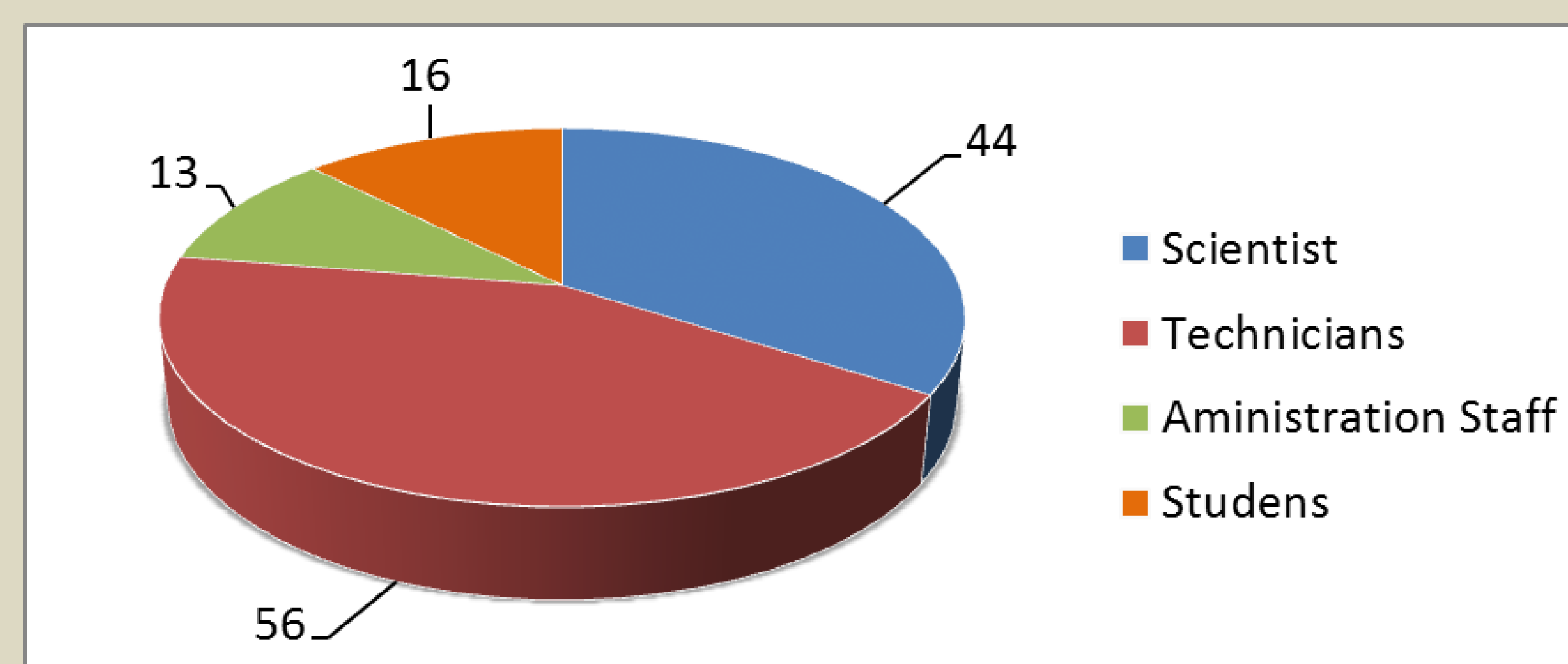
CENIM-CSIC is a leading metallurgical research institute in Spain and Ibero-American countries and has notable international visibility in Europe and world-wide. It is also a reference centre for the Spanish metallurgical industry.

CENIM is devoted to research activities in **the field of metallic alloys**, from the design, production and transformation until the analysis of the final use in the different industrial sectors.



Staff

The **staff at CENIM in 2013** is composed by



Source of Funding

The **total funding obtained during the last three years was 6.5 M€** (50% national projects, 25% international projects, and 25% industrial contracts).



Research Topics

- **New processing technologies and advanced metallic materials** (intermetallics; advanced steels; crystalline, nanocrystalline and amorphous light alloys; composite and nanocomposite) **of interest in applications for transport, energy and health.**
- Basic **corrosion processes** and those taking place on a metal surface subjected to mechanical factors (stress, erosion, wear and / or friction) **in conventional and advanced materials, including historic and cultural heritage.**
- **New protection systems** (metallic, organic, hybrid, sol-gel, graphene, ...) and **surface functionalization** to improve their properties and extend the service life of the material.
- **Eco-innovative technologies** in the environmental, material recycling and energy recovery.

Impact of our Research

The **total number of publications** in SCI journals in the last three years **was 380**. The **total number of patents was 17**.

Research Facilities

- **Electron Microscopes:** SEM-FEG HITACHI S-4800, SEM-FEG JEOL J8M6500 with EBSD, TEM JEOL 2010
- **X-Ray Diffractometers:** Siemens D5000 and Bruker AXS D8
- **X-ray photoelectron spectroscope (XPS) and atomic force microscope (AFM)** for surface analysis and characterization.
- **Infrared, mass, atomic absorption and X-Ray fluorescence spectrometers.**
- **Ultra micro indentation system.**
- **Full-equipped mechanical testing lab** (tension, compression, torsion, fatigue and creep resistance testing machines).
- **Latest generation dilatometer .**
- **DTA, TGA and DSC** for thermal and gravimetric analysis.
- **Corrosion electrochemical systems** (LEIS, SECM, Kelvin probe).

