




TECHNICAL CLAUSES FOR THE ACQUISITION OF A HIGH VACUUM MULTI-PURPOSE LABORATORY SCALE SYSTEM

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	<p>Technical clauses for the acquisition of a high vacuum multi-purpose laboratory scale system</p>	<p>www.idonial.com info@idonial.com T +34 984 390 060 F +34 984 390 061</p>
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TECHNICAL CLAUSES

Technical description of a high-vacuum multi-purpose laboratory scale system:

Equipment specifications

The department of Metallic Materials Development at Fundación Idonial (hereafter known as Idonial) is currently seeking out the acquisition of a **laboratory scale (or pilot production) furnace for melting, alloying and casting of metals and alloys in a ceramic or graphite crucible under vacuum or protective gas partially pressured**. The technical specifications described in this document cover the desired and essential equipment requirement. Idonial invites any interested organisations along with others to offer a tender for provision of the above, to the specification outlined in this document.

Description of the equipment and functions:

The equipment shall be capable of melting and casting a wide range of materials in small batches. The ideal capacity shall be in the range of 0.2 and 0.5 L, the equivalent to a range of 1.5 and 4 kg of steel approx. Never exceeding 1.5 L, the equivalent to 11.5 kg of steel.

It shall consist of a medium-frequency (~10Hz) induction furnace due to its high energy efficiency and excellent electromagnetic stirring effect.

The unit shall be capable of melting and casting under two different conditions (i.e. high vacuum pressure below 5×10^{-4} mbar, and a controlled protective atmosphere).

The unit shall be provided with an external device suitable for alloying / re-charging of granulates into the crucible without compromising the conditions of the protective atmosphere or vacuum. The external device shall also be capable of measuring the temperature via thermocouples or pyrometers.

Single-use melting crucibles shall be used aiming to minimise cross-contamination during the loading and melting process.

The furnace vessel shall be equipped with a device capable of heating and cooling the crucibles during the melting and casting process.