

## PHD SCHOLARSHIP 2018 DATASHEET

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Business Division Business Area	Industry and Transport Iron and Steel Industry
Technology Platform	Steel
<u>Scholarship location</u> Province Building	Bizkaia, Derio, Edif. 700

### SCHOLARSHIP DESCRIPTION

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**Scholarship title: Advanced steel development**

**Brief description of scholarship:**

New advanced steel with improved properties

**Detailed description of scholarship:**

It involves examining the research areas in order to obtain advanced steel by addressing design of new compositions, its manufacture process and thermo-mechanical treatments. The objective is to obtain steel with improved properties in the area of lightening automotive components.

Road traffic makes up approximately one fifth of the total carbon dioxide (CO<sub>2</sub>) emissions of the EU. This is why the EU has established a global legal framework to reduce CO<sub>2</sub> emissions of new light vehicles as part of the efforts to guarantee that the objectives to reduce green house gas emissions are met. In the case of cars, manufacturers are obligated to guarantee that new vehicles do not emit more than an average of 95 g by 2020, without compromising the security of passengers at any time. The figure was 160 g in 20017 and 135.7 g in 2011. To achieve this objective, the automotive industry needs to implement long-term investments and develop innovative technologies. The main strategy being followed by most automotive manufacturers consists of decreasing vehicle weight. This may be carried out via different strategies: (i) re-designing parts to reduce their materials, (ii) reducing the thickness of components by using higher durability materials and (iii) reducing the density of the used material.

This scholarship addresses the second strategy via the development of new high resistance steel to reduce the thickness of the components and the total weight of the car (a 100 kg decrease in vehicle weight means ~ 8.5 g less CO<sub>2</sub> emissions per km).

**REQUIREMENTS:**

The PhD candidate shall meet the following requirements:

- **Degree and specialisation:** Industrial engineering, materials engineering, degree in chemistry, degree in physics.
- **Languages:** Spanish and English.
- **IT skills:**
- **Also desirable:** knowledge of metallurgy, mechanical and microstructural characterisation, C++ programming

**Further information and applications:** <http://bit.ly/2IVKCQ7>