PhD SCHOLARSHIP APPLICATION FORM 2016

ORGANISATION Business Division Business Area	**TECNALIA RESEARCH & INNOVATION** INDUSTRY AND TRANSPORT Instrumentation and Smart Systems/Advanced Manufacturing
Scholarship location Province/Building	GIPUZKOA/Parque Científico y Tecnológico de Gipuzkoa - Mikeletegi Pasalekua, 7-Donostia-San Sebastian
Tutors	Dr. Fernando Boto Sánchez Fernando Veiga Suárez

SCHOLARSHIP DESCRIPTION

Title: Industrial Process Optimisation Measure to improve, measure to acquire knowledge

Brief Description of Scholarship:

Manufacturing process optimisation for parts in Heat Resistant Super Alloys (HRSA) using Data Analysis techniques (Machine Learning, Software Sensors) which enable improving manufacturing processes, optimising variables such as the use of tools and machining sequences.

Scholarship description:

Given the positive growth progress of the aeronautical sector and situation, a major effort will be required by technology centres to contribute to promoting our industry in general and machining in particular. Aircraft manufacturing is expected to double by 2033, increasing production in the aeronautical machining sector.

In this context, and aware of the increasing number of new processes and materials dedicated to the aeronautical sector, this project proposes optimisation of HRSA machining through the development of a platform covering: infrastructure (HW_SW for processing data from machining); Machining test standard (creation of a standard for the analysis of super-alloy machining); Experimentation (analysis of alternative machining processes); and Simulation (simulation of machining processes to gain knowledge of material thermal-mechanical behaviour during the manufacturing process).

This scholarship will contribute to developing optimisation through mathematical models for **low-machinability material machining** and integration in a **machining optimisation platform** of new aeronautical alloys.

Requirements:

The PhD candidate shall meet the following requirements:

- ~~Qualidfication~~Qualification and speciality: Engineering in Physics, Mathematics or IT, with knowledge of and/or specialised in Computer Engineering and Smart Systems.

- Languages: English (Advanced writing, Intermediate-Advance Speaking).

- IT skills: High level Java, C++, ~~Phyton~~Python. Knowledge of Linux environment

- The following will be a plus: Prior experience in a technology centre and/or University