

Intervento realizzato da



Politecnico
di Torino



In consideration of the determination of the Regione Piemonte – Direzione Istruzione, formazione e lavoro No. 218 of 2022, May 3 which listed the higher institutions authorized to activate PhD positions in the apprenticeship format for the years 2022-2024 in the framework of a specific regional call for proposals (Apprendistato di Alta Formazione e Ricerca - Avviso Pubblico 2022-2024 per l'individuazione e la gestione dell'offerta formativa pubblica approvato con Determinazione 114 del 3/3/2022 e s.m.i.)

MECHANICAL ENGINEERING

Innovative Magneto-Rheological Brake System

Company	Point Zero s.r.l. [Piva/CF:13147910015]
Supervisor	CARELLO MASSIMILIANA - massimiliana.carello@polito.it
Contact	Imberti Giovanni
Context of the research activity	<p>The research activity is relative to Simulation, Analysis and Testing of an Innovative Magneto-Rheological Brake, in particular for automotive applications.</p> <p>The Company Point Zero s.r.l. (Spin-Off of the Politecnico of Turin) has planned for the winner of this position a collaboration within a contract of high apprenticeship according to the Italian Legislative Decree 81/2015, art. 45.</p>
Objectives	<p>With the goal of optimizing a design procedure for Magneto-Rheological Brakes, the project aims to define a valuable and well-defined simulation strategy for the analysis of Magneto-Rheological Fluid, taking in consideration both their electro-magnetic and fluid-dynamic behavior.</p> <p>The Project aims to develop, define and validate simulation procedures starting from the State-of-Art done as to now, and considering a first braking system developed, with the goal of developing a new braking prototype capable of validating the simulation analyses completed.</p> <p>The project is expected to be composed by three iterative actions: experimental characterization of the fluid, virtual simulation and first correlation, braking system design, prototyping and experimental validation, considering the integration in a full scale vehicle.</p>
	<p>The candidate shall be less than 30 years old at the moment of the hiring from the company.</p> <p>The candidate needs competence in:</p>

Skills and competencies for the development of the activity	<ul style="list-style-type: none"> • Preferably LM Mechanical Engineering • IELTS 5.5 or equivalent, preferable higher • Know-How on Longitudinal Dynamics and Automotive Braking Systems • Previous Experience in Multiphysics softwares combining electro-magnetic and fluid-dynamic analysis – better if on Ansys Platforms • Intermediate Knowledge on Matlab Simulink • Good Knowledge Office Package • Flexibility and capability to work in Team accepting new technical challenge
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