

Description of Research Engineer Position (1 year offer)

Non-statutory civil service staff financed by State and/or Regional funds

Coordinator : ENSAM / LILLE Campus/ NGAC KY NGUYEN Project name : CPER EE4.0 phase 1			
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Context: In the framework of the CPER (State-Region Plan Contract) EE4.0 Project (Electrical Energy 4.0) which aims to obtain adaptable, flexible, available and eco-efficient electrical energy in a sustainable societal environment. The increase in the use of this energy in transport systems encourages us to develop more efficient and effective electric drives. In this context, multiphase drives with integrated power electronics, i.e. integrated polyphase machines show its interesting perspectives. Motivated by this research activity, a prototype of a permanent magnet electric machine (different configurations: 5/10/20phases) controlled in the Matlab/Simulink/Dspace environment has been developed within the framework of the SIMD 2015-2021 project (Smart and Integrated Motor Drive <https://ce2i.eu/home/>) in the L2EP laboratory (<https://l2ep.univ-lille.fr/en/laboratoire/page-d-accueil/>).

Missions:

- Experimental characterization of fault-tolerant multiphase electrical drives in the Matlab/dSPACE environment.
- Experimentation on the machine prototype will be carried out: testing and adapting control laws in normal and/or degraded modes taking into account the actual temperatures measured at different points of the machine.
- Writing scientific papers.

Expected Profile:

Doctor in Electrical Engineering with backgrounds on:

- Experimental practice of control/command of electrical machines powered by Voltage Source Inverter under dSPACE/Matlab-Simulink environment.
- Space Vector Modulation of the inverter.
- Vector control of permanent magnet synchronous machines.
- Fault-tolerant control and diagnosis of electrical drives will be appreciated.

Responsible (Scientific): Ngac Ky NGUYEN

Work place : ENSAM/Campus de LILLE/8 Bd Louis XIV LILLE

Gross monthly salary: 3200 Euros

Expected hiring date : 2 January 2023

Contract duration : 12 months (until December 2023) with possibility of renewal

Employer : University of Lille

Contact to send your CV: ngacky.nguyen@ensam.eu

L2EP eV- platform for a virtual visit : <http://lorniweb.i234.me/ce2i/360-01/ensam/>

L2EP Website: <https://l2ep.univ-lille.fr/en/laboratoire/page-d-accueil/>