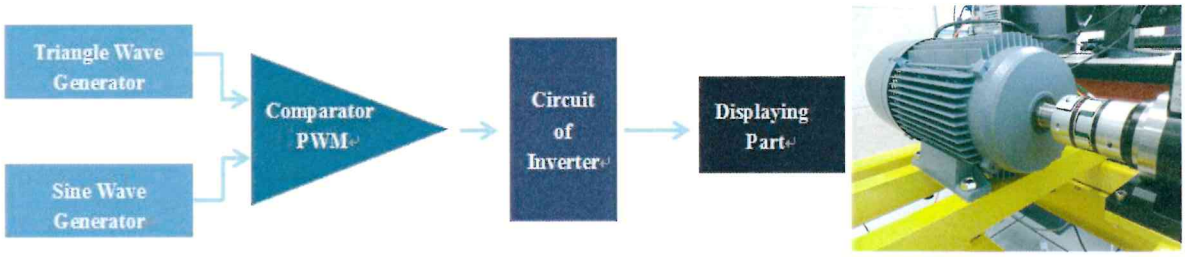
ESIEE AMIENS	**CHARACTERIZATION AND CONTROL-COMMAND OF AN ASYNCHRONOUS ELECTRICAL MACHINE THROUGH A PROGRAMMABLE POWER INVERTER.** **INTERNSHIP - RESEARCH** ESIEE AMIENS O. MALOBERTI	**2019/2020**

DOMAIN : **Power electronics, control-command of power converters – electrical machines bench tests**

TOPIC (anglais) :

The aim of this project is to characterize parameters of an electrical machine (asynchronous motor) and develop the control-command with a power converter that makes possible to use this machine at variable speed. One PWM strategy has been proposed and written in LABVIEW to command the switches of an inverter in an open loop. These programs onto the switches of the converter have been tested and validated. **The aim of this internship is to use this equipment to run an asynchronous machine and characterize its properties. It will then be necessary to complete the command programs with a program that implement a complete control law (scalar or/and vector) in a closed loop.**



MISSIONS :

- **Perform a bibliography on asynchronous machines (MAS) associated to power converters,**
- **Implementation of the command and experimental tests of the converter in an open loop,**
- **First experimental characterizations of the MAS (resistance, inductances, ...)**
- **Scalar or/and vector control of the converter in a closed loop (programs and tests),**
- **Write a scientific and technical report.**

RESULTS, MODELS AND EQUIPMENT AT DISPOSAL :

Test bench for electrical machines equipped with two machines and a speed and torque meter / Electrical sources equipped with a safety box and power converters / Electrical measurement apparatuses and computer / Softwares: MATLAB, MATAB/SIMULINK, LABVIEW.

PROFESSIONNAL PROFILE : Electrical Machines and Power Electronics / Bac + 4 - DURATION : 3 month

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