DEVELOPMENT AND CHARACTERISATION OF MATERIALS

APPLICATION FOR INTRNET OF THINGS DEDICATED TO INDUSTRY

Thematic:

The internship subject concerns the identification of sensor technology, in particular for the detection of micro-defects on structures in the railway environment. The aim is to identify the green materials, to make the design that best fits the test structure and then to manufacture a fully autonomous and easy to integrate demonstrator.

This work will require electromechanical characterization steps, using the tools available in the laboratory. A labview or mathlab tool will be developed during this internship. The originality of the approach lies in the search for an energy autonomous sensor, using mechanical vibrations. The quality of the material deposited in thin layers on the support, the search for maximum piezoelectric effects and the integration of a communication system will constitute the key elements in the innovation.

This internship subject constitutes an application of the green materials developed within the FUMAP platform of the IEMN located within the UPHF technopole. The aim is to transfer the technological advances on the materials side and to apply them to rail transport. The advantages concern both the monitoring of faults in real time via connected object in the metal structure and also the repercussions for the maintenance of the rolling stock.

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Remuneration and duration of the internship :

The internship is for a period of 3 months for a remuneration of 570euros/month.