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***John McCulloch***

***4th Year EngD***

***Development of XPF Steel Grades***

The study supports the development of a new family of advanced high-strength steels (AHSS) strip products by Tata Steel Europe for lightweight automotive chassis and suspension applications marked by superior edge-ductility and fatigue performance. The main drivers for which are the reduction in CO2 vehicle emissions and increased formability. The metallurgy of theses novel steels involves strengthening of a single phase ferritic microstructure by ‘nano’-precipitates formed during carefully controlled precipitation reactions through strip steel processing. The effects of different processing parameters on microstructural evolution, mechanical properties and final product performance are investigated. This is achieved through materials characterisation using mechanical testing, light optical & electron microscopy based techniques in addition to ThermoCalc simulations.

Industrial Supervisor – Mr Peter Evans

Academic Supervisors – Professor George Fourlaris & Dr Cameron Pleydell-Pearce