Investigation of solidification cracking in Advanced High Strength Steels
PhD

Funding: £14,000 with an additional industry top up of £3,000 per annum (for UK nationals)
Company: TATA Steel
Start Date: ASAP
Supervisors: Dr Prakash Srirangam and Professor Barbara Shollock

Project Overview:
This project is with leading researchers in WMG’s Steels Processing Group, as well as TATA Steel Europe.

Advanced high strength steels are widely used in automotive applications to meet the demands of light weighting to save the fuel consumption and to reduce CO2 emissions. However, casting of these steels results in solidification cracking and hence results in economic losses to steel industry. Hence, it is essential to understand the cracking phenomenon in these steels to improve the yield and quality of the steels.

Alloying elements such as titanium and niobium result in different types precipitates which could influence the cracking phenomenon in these steels. The project aims to:

1. Understand the effect of alloying elements on solidification behaviour and cracking phenomenon.
2. Understand the kinetics of precipitates formation.
3. Characterise the size, shape and volume fraction of precipitates formation in using advanced characterisation tools (advanced microscopy, synchrotron).

The project is in close collaboration with TATA Steel Europe and the potential student has the excellent opportunity to interact with research scientists in industry. The project is being funded by EPSRC and TATA Steel.

Funding:
This position provides an annual stipend of £14,000 with an additional industry top up of £3,000 per annum (for UK nationals).

Tuition fees will be paid UK/EU nationals for up to 4 years.

To be eligible for this project the successful applicant should have indefinite leave to remain in the UK and have been ordinarily resident here for 3 years prior to the project start-date, apart from occasional or temporary absences. Additional details of these criteria are available on the EPSRC website.

Eligibility:
We are looking for a student with an undergraduate degree or Master’s degree in Metallurgy/ Engineering/ Physics/Chemistry with a high enthusiasm to do work in a collaborative environment.

Apply:
Interested applicants are encouraged to contact Dr. Prakash Srirangam (P.Srirangam@warwick.ac.uk) for further information of the project. To apply, please complete our online enquiry form.