Understanding carbon redistribution in steels

Recent Research activities:

- Carbon redistribution during martensite ageing: segregation to defects or spinodal decomposition?
  - Carbon characterisation at the atomic scale by atom probe tomography.
  - Martensite tetragonality changes during ageing (A) and tempering (A&T) by high resolution XRD.
  - Modelling spinodal decomposition in Fe-C.

- Carbon redistribution during Quenching & Partitioning heat treatments: carbon competition among austenite, martensite and carbides.
  - Characterisation of carbon partitioning at interface region by site specific analysis using EBSD – APT.

Key publications:

- Thermodynamic aspects of carbon redistribution during ageing and tempering of Fe-Ni-C alloys, submitted.

Other Achievements:

Successful beamtime at synchrotron radiation facilities:

- 1 shift allocation (Rapid Access Mode) in I11 at Diamond Light Source, UK.
- 15 shifts allocation in I11 for the 10/2015 round in I11 at ESRF, France.