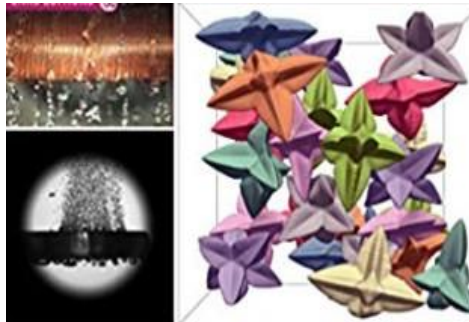


Our skills

Solidification processes



YOUR NEEDS

- Alloys treatment by solidification processes (molding: continuous and semi-continuous casting, welding, brazing, etc.) and by additive manufacture
- Improve the quality of metallurgical products produced by solidification
- Understand the metal alloy solidification (crucial step for many materials)

OUR SOLUTIONS

- Experimental study associated with modelling for the understanding of fundamental physico-chemical phenomena applied to solidification
- Study solidification structures (primary grain size, morphology and texture, intergranular, intermetallic microstructure) and defects (chemical segregation from grain scale to the massif, porosity)
- Topics studied:
 - Grain refinement
 - Dynamics of the Mushy area
 - Molding and assembly processes
- Solid calculation code implemented for the modelling of structures and segregation during the solidification process

KEYWORDS

Solidification, metal alloys, microstructure, micro and macro segregation, porosity, grain refinement, grain morphology, peritectic reaction, multi-scale modelling, mushy zone, simulation, CALPHAD, thermodynamic analysis, differential scanning calorimetry

RELATED SKILLS


- Structural and microstructural characterization
 - Electron microscopy (SEM, TEM, FIB SEM)
 - X-ray diffraction
- Numerical simulation and scientific calculation

OUR REFERENCES

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