On the interactions between recrystallisation and ordering phenomena in Fe₂VAl-based Heusler Compounds

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Compounds based on Fe₂VAl are considered as promising materials to harvest low grade heat from industrial processes through the thermoelectric effect. On the one hand, conditions leading to hot ductility of this intermetallic compound were analysed through hot uniaxial compressive strength tests. Recovery and recrystallisation phenomena were characterised during and after hot-rolling, particularly with the aim of grain refinement.

On the other hand, ordering (B2, D03 or L21) is of prime importance in Fe₂VAl-based compounds as their thermoelectric properties are greatly enhanced in the ordered state. The influence of the temperature as well as of the presence of defects was assessed. The interactions between recovery/recrystallisation and ordering in specific temperatures ranges were characterised owing to x-ray diffraction and transmission electron microscopy.

Presentation: Oral

General subject area:
1. Diffusional transformations (order-disorder transformations)