

Phase Transformation in Metals and Alloys

DESIGN PROBLEM

Design 1

- ◆ Find materials to make the best steel sheet for a car door.
- ◆ Which is the best way to compose suitable microstructures?
(in the view points of 'Processing' & 'Heat treatment' etc...)
- ◆ Consider , if you need, any other things for the product.

Design 2

- ◆ Design a heat treatment for an oil-tank used in the polar region.
- ◆ List properties that should be considered to make it.
- ◆ Show or expect the microstructures clearly and explain why that kinds of microstructures are needed.

Design 3

- ◆ Design a material that suits for the cover of compact digital camera.
- ◆ List the appropriate properties for the material.
- ◆ Explain the reason for choosing that material and suggest reasonable solutions for improving it.

Design 4

- ◆ We are coating Sn on the steel plate. We want to reduce the cost as much as possible and obtain the best quality product.
- ◆ List the priorities for improving the quality of coated Sn.
- ◆ Suggest the best way and explain why you've chosen it.