



Professor Robert F. SINGER

1. Lectures on superalloys for high temperature applications

Light weight materials 1 – Fundamentals, competing approaches, basics of alloy selection

Competing systems (Mg, Al, Ti, polymers, fibre reinforcement, dispersion strengthening), figures of merit in light weight construction, Ashby maps, driving forces (government regulation ...)

Light weight materials 2 – Recent progress in technical development

Injection moulding of Mg, Mg micro and nano composites via injection moulding, integral foam moulding of Al, smart metallic materials by die casting

Light weight materials 3 – Recent progress in technical development

Fibre reinforcement in polymers and metals through preform infiltration, Temconex technology, additive manufacturing (SEBM)

Each lecture lasting 2 * 45 minutes.

Followed by 45 discussion and a short test (multiple choice) for students.

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