



Satuan Acara Pengajaran

MMS8110802 - Kinetik & Transformasi Fasa

Pengajar

Nofrijon Bin Imam Sofyan Ph.D

Prof. Dr. Ir. Bondan Tiara M.Si.

Minggu 1

Materi	Introduction (Rules, Grading, Marking) 1. Review on Thermodynamics and Phase Equilibrium: a. Single Component System b. Binary Component System c. The Phase Rule d. Binary Phase Diagrams: - Two phase equilibrium - Three phase equilibrium - Exercise on two phase and three phase equilibrium - Reactions in the solid state
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Media	LCD Projector
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Referensi	Textbooks: 1. Porter, D. A and Easterling, K.E, Phase Transformation in Metals and Alloys, 2nd. ed., CRC Press, 2003. 2. Prince, A, Multicomponent Alloy Constitutional Bibliography, The Metals Society, London, 1978 3. West, DRF, Ternary Equilibrium Diagrams, Chapman and Hall, 1982 Support materials: 1. Chapter 5, 9 and 10 of: Callister, W.D, Materials Science and Engineering: An Introduction, 6th ed., Wiley., 2004 2. Lennart Backerud, Guocai Chai, and Jarmo Tamminen, Solidification Characteristics of Aluminum Alloys-Volume 2: Foundry Alloy 3. Lars Arnberg, Lennart Backerud, and Guocai Chai, Solidification Characteristics of Aluminum Alloys-Volume 3: Dendrite Coherency
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Aktivitas

Minggu 2

Materi e. Fe-Fe₃C Phase Diagram
f. Ternary System Representation
g. Ternary System containing 2 phase
h. Exercise

Media LCD Projector

Referensi

Aktivitas

Minggu 3

Materi Diffusion in Materials:
a. Atomic mechanism of diffusion
b. Interstitial diffusion
c. Substitutional diffusion

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Referensi

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Minggu 4

Materi Off (Eid-ul-Fitr break)

Media

Referensi

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Minggu 5

Materi Diffusion in Materials (cont.):
d. Tracer diffusion in binary alloys
e. Diffusion in multiphase binary system
f. Journal review

Media LCD Projector

Referensi

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Minggu 6

Materi Solution for Fick's 2nd law:
- Homogenization
- Thin film solution
- Carburization and decarburization
- Diffusion from a Finite Source into Semi Infinite Media
- Case studies

Media LCD Projector

Referensi

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Minggu 7

Materi Crystal Interface and Microstructure:
a. Interfacial free energy
b. Grain boundary
c. Case study in Crystal Interface
d. Interphase interfaces in solids
e. Interface migration

Media LCD Projector

Referensi

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Minggu 8

Materi Mid term (UTS)

Media

Referensi

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