

Phase Transformation in Ti and Zr alloys

Further Reading Suggestions

If you're interested in reading more about the topics covered in these lectures, the following resources are a good start. The book on Phase Transformation is one of the best, and provides a clear (mathematical) description of the thermodynamic and kinetic processes in metals. The paper by Burgers is still well cited today for the discovery of the Burgers Orientation Relationship. The Titanium book is a Bible for anyone working with titanium, and covers much of the content of the lectures and more (although the section on Crystallographic Texture is only small and becoming out-of-date). And, finally, if you want to learn more about how a Jet Engine works, including the material requirements, design and physics, the book commissioned by Rolls-Royce is a very interesting read.

- Book – Phase Transformations in Metals and Alloys by David A. Porter, Kenneth E. Easterling, Mohamed Y. Sherif - *Chapter 1 Thermodynamics and Phase Diagrams, pages 57-58 on Kinetics of Phase Transformations, Chapter 2 Diffusion.*
- Paper – W. G. Burgers, "On the process of transition of the cubic-body-centered modification into the hexagonal-close-packed modification of zirconium," *Physica*, vol. 1, no. 7–12, pp. 561–586, May 1934.
- Book – 'Titanium' by Gerd Lutjering and James C. Williams (*available to download from library*) – *Chapter 2 Fundamental Aspects (Phase Diagrams, Transformations, Alloy Classification), Chapters for each Ti alloy class.*
- Book - The Jet Engine by Rolls-Royce plc.