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Temperature Oxidation of Titanium andZirconium and their Alloys; 1. Introduction 2. State of the Art; 3. Influence of Water Vapor on Titanium Oxidation; 4. Effect of Steam Pressure on the Corrosion Resistance of Zirconium-Based Materials; 5. Effects of Wet-Air Radiolysis on Oxidized Zircaloy-4; 6. Study of High-Temperature Oxidation of Zirconium in Water Vapor: Impact onMechanical Properties; 7. Conclusion; CHAPTER 5Tools for Studying Water Vapor at HighTemperatures; 1. Kinetics and Oxidation Mechanisms; 2. Characterization
3. Modeling and Numerical Simulations

Sommario/riassunto

Increased clarity in our understanding of water vapor effects on oxidation is resulting from our recognition that multiple mechanisms are possible, and that distinctions must be drawn between situations where, on the one hand, molecular oxygen accompanies water vapor, and on the other, it does not, and instead free hydrogen can be present. It is a pleasure to welcome the contributions of this new book to this important field. Whilst the existence of a substantial French research effort in the area has been well known, the scale and extent of the effort comes as something of a surprise. The rea