Record Nr. UNINA9910452956703321 **Titolo** Nuclear reactors, nuclear fusion and fusion engineering [[electronic resource] /] / A. Aasen and P. Olsson, editors Pubbl/distr/stampa New York,: Nova Science Publishers, c2009 **ISBN** 1-60876-722-1 Descrizione fisica 1 online resource (500 p.) Altri autori (Persone) AasenA. <1963-> OlssonP. <1962-> Disciplina 621.48 Soggetti **Fusion reactors** Nuclear engineering Nuclear fuels Electronic books. Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references and index. ""Nuclear Reactors, Nuclear Fusion and Fusion Engineering""; Nota di contenuto ""Contents""; ""Preface""; ""Research and Review Studies""; ""Neutron Physics Research for the Development of Accelerator-Driven Systems"": ""Abstract""; ""1.Why Nuclear Data for Accelerator-Driven Waste Incineration?""; ""2.Why Neutrons?""; ""3.Which Reactions Are of Interest for Waste Incineration?""; ""4.Why Accelerator-Driven Systems?""; ""5. Which Data Are of Interest for Accelerator-Driven Systems?""; ""6. Neutron Experiments - The Art of the Impossible?""; ""7.Survey of Recent High-Energy Experiments"" ""8.The Present Experimental Nuclear Data Situation"""9.Towards Application: From Cross Sections to Nuclear Data""; ""10. Theory and Nuclear Model Software"; ""11.An Example: Pb""; ""12.Future Possibilities""; ""Acknowledgements""; ""References""; ""An Overview about Modeling Approaches for Turbulent Mixing and Void Drift in Sub-Channel Analysis"": ""Abstract"": ""Abbreviations"": ""1. Introduction ""; ""2. Turbulent Mixing ""; ""3. Void Drift ""; ""Conclusion ""; ""References ""; ""Quantum Theory Way to the Two-Laser Ignition Facility""; ""Abstract""; ""1.Introduction""

""2.Necessity of Quantum Theory for Understanding Fusion

Processes"""3. The Volkov Solution of the Dirac Equation"; ""4. The Compton Process from the Volkov Solution of the Dirac Equation": ""5. Quantum Theory of Emission of Photons by Electron Moving in the Impulsive Force""; ""6. Volkov Solution of the Dirac Equation for Massive Photons""; ""7.The Probability of Emission of Photons by Electron in a Circularly Polarized Wave""; ""8. The Solution of the Dirac Equation for Two Plane Waves""; ""9. Synchrotron Radiation from the Volkov Solution for the Dirac Electron Moving in Magnetic Field"" ""10.Conclusion""""References""; ""The Development of Fuel Cladding Chemical Interaction Zones in Irradiated U-ZR and U-PU-ZR Fuel Elements with Stainless Steel Cladding"; ""Abstract""; ""1. Introduction""; ""2. Result of Post Irradiation Analyses of Fuel Elements""; ""3. Discussion""; ""4. Conclusion""; ""Acknowledgments""; ""U. S. Department of Energy Disclaimer""; ""References""; ""Microalloving Design for Nuclear Reactor Pressure Vessel (RPV) Steels""; ""Abstract""; ""1. Introduction""; ""2. Prior Austenite Grain Refinement in Microalloyed Steels"" ""3. Simulated HAZ in ASTM A508 and A533 Steels"""4. Mechanical Properties of Simulated HAZs in A508 and A533 Steels"; ""Conclusion""; ""References""; ""History and Evolution of Fusion Power Plant Studies: Past, Present, and Future Prospects"; ""Abstract""; ""1. Introduction""; ""2. Mission and Main Features of Fusion Power Plants""; ""3. Magnetic Fusion Concepts""; ""4. Fusion Roadmaps and Timeline of Fusion Power""; ""5. Conclusion""; ""Acknowledgments""; ""References""; ""Optimization of Configuration under Dominant Electron Heating in Tokamaks""; ""Abstract""; ""1. Introduction"" ""2. LH Wave Absorption by Landau Damping""