This book contains 29 papers from the Clean Energy: Fuel Cells, Batteries, Renewables; Green Technologies for Materials Manufacturing and Processing II; and Materials Solutions for the Nuclear Renaissance symposia held during the 2010 Materials Science and Technology (MS&T’10) meeting, October 17-21, 2010, Houston, Texas. Topics include Batteries; Corrosion and Materials Degradation; Fuel Cells & Electrochemistry; Fossil Energy Materials; Solar Energy; Waste Minimization; Green Manufacturing and Materials Processing; Immobilization of Nuclear Wastes; Irradiation and Corrosion Effects; and Materials Performance in Extreme Environments.