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Nota di contenuto	CONTENTS; Glossary; Chapter 1; Historical Introduction; Early Incendiary Devices; Development of Black Powder; Application of Black Powder to Fireworks; Further Uses of Black Powder; Chapter 2; The Characteristics of Black Powder; Influence of Pellet Density on Burning Time; Influence of Moisture on Burning Time; Thermal Decomposition; Thermal Ignition of Black Powder; Thermal Analysis of Black Powder; Analysis by TG; Analysis by DTA; Analysis by DSC; Stoichiometry; Volume of Evolved Gases; Heat of Reaction; Temperature of Reaction; Chapter 3; Rockets; Propellant; Internal Ballistics External Ballistics Rocket Design and Manufacture; Recent Developments; Chapter 4; Mines and Shells; Calibres; Construction of Shells; Internal Ballistics; External Ballistics; Mortar Tubes; Energy Transfer Efficiency; Mines; Chapter 5; Fountains; Compositions; Atomic Theory; Quantum Theory; The Colour of Sparks; The Brightness of Sparks; Particle Combustion; Chapter 6; Sparklers; Wire Sparklers; Tubed Sparklers; Chapter 7; Bangers; Method of Construction; Volume of Evolved Gases; Theoretical Maximum Gas Pressure; Airblast and Sound; Chapter 8; Roman Candles; Method of Construction Emission of Radiation by Stars Chemistry of the Green Star; Ionisation in Flames; Chemistry of the Red Star; Chapter 9; Gerbs and Wheels; Gerbs; Method of Construction; Wheels; Method of Construction; Chapter 10; Special Effects; Quickmatch; Piped Match; Plastic Fuse; Lances; Set-pieces; Devices; Flash and Noise Effects; The Whistle Effect; Smoke Puffs; Coloured Smokes; Firing Electrically; Chapter 11; Fireworks

Safety; Radio Hazard; Public Safety; Organised Displays; Chapter 12; Fireworks Legislation; The Explosives Acts; The Health and Safety Commission; The Health and Safety Executive
British Standard for FireworksUK List of Classified and Authorised Explosives; Recent Legislation; Bibliography; Subject Index

Sommario/riassunto

For centuries, fireworks have been a source of delight and amazement in cultures around the world. But what produces their dazzling array of effects? This book takes you behind the scenes to explore the chemistry and physics behind the art of pyrotechnics. Topics covered include history and characteristics of gunpowder; principles behind each of the most popular firework types: rockets, shells, fountains, sparklers, bangers, roman candles and wheels; special effects, including sound effects, coloured smokes and electrical firing; firework safety for private use and displays; and firework legisl
