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Autore	Fuglie Keith Owen
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Autore	Pawowski Lech
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	The Science and Engineering of Thermal Spray Coatings; Contents; Preface to the Second Edition; Preface to the First Edition; Acronyms, Abbreviations and Symbols; 1 Materials Used for Spraying; 1.1 Methods of Powders Production; 1.1.1 Atomization; 1.1.2 Sintering or Fusion; 1.1.3 Spray Drying (Agglomeration); 1.1.4 Cladding; 1.1.5 Mechanical Alloying (Mechanofusion); 1.1.6 Self-propagating High-temperature Synthesis (SHS); 1.1.7 Other Methods; 1.2 Methods of Powders Characterization; 1.2.1 Grain Size; 1.2.2 Chemical and Phase Composition; 1.2.3 Internal and External Morphology 1.2.4 High-temperature Behaviour 1.2.5 Apparent Density and Flowability; 1.3 Feeding, Transport and Injection of Powders; 1.3.1 Powder Feeders; 1.3.2 Transport of Powders; 1.3.3 Injection of Powders; References; 2 Pre-Spray Treatment; 2.1 Introduction; 2.2 Surface Cleaning; 2.3 Substrate Shaping; 2.4 Surface Activation; 2.5 Masking; References; 3 Thermal Spraying Techniques; 3.1 Introduction; 3.2 Flame Spraying (FS); 3.2.1 History; 3.2.2 Principles; 3.2.3 Process Parameters; 3.2.4 Coating Properties; 3.3 Atmospheric Plasma Spraying

(APS); 3.3.1 History; 3.3.2 Principles
3.3.3 Process Parameters 3.3.4 Coating Properties; 3.4 Arc Spraying
(AS); 3.4.1 Principles; 3.4.2 Process Parameters; 3.4.3 Coating
Properties; 3.5 Detonation-Gun Spraying (D-GUN); 3.5.1 History; 3.5.2
Principles; 3.5.3 Process Parameters; 3.5.4 Coating Properties; 3.6
High-Velocity Oxy-Fuel (HVOF) Spraying; 3.6.1 History; 3.6.2
Principles; 3.6.3 Process Parameters; 3.6.4 Coating Properties; 3.7
Vacuum Plasma Spraying (VPS); 3.7.1 History; 3.7.2 Principles; 3.7.3
Process Parameters; 3.7.4 Coating Properties; 3.8 Controlled-
Atmosphere Plasma Spraying (CAPS); 3.8.1 History; 3.8.2 Principles
3.8.3 Process Parameters 3.8.4 Coating Properties; 3.9 Cold-Gas
Spraying Method (CGSM); 3.9.1 History; 3.9.2 Principles; 3.9.3 Process
Parameters; 3.9.4 Coating Properties; 3.10 New Developments in
Thermal Spray Techniques; References; 4 Post-Spray Treatment; 4.1
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Sealants; 4.3 Finishing; 4.3.1 Grinding; 4.3.2 Polishing and Lapping;
References; 5 Physics and Chemistry of Thermal Spraying
5.1 Jets and Flames 5.1.1 Properties of Jets and Flames; 5.2 Momentum
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Theoretical Description; 5.2.2 Experimental Determination of Sprayed
Particles' Velocities; 5.2.3 Examples of Experimental Determination of
Particles Velocities; 5.3 Heat Transfer between Jets or Flames and
Sprayed Particles; 5.3.1 Theoretical Description; 5.3.2 Methods of
Particles' Temperature Measurements; 5.4 Chemical Modification at
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of Particles; 6.1.1 Particle Deformation
6.1.2 Particle Temperature at Impact

Sommario/riassunto

This extensively updated and revised version builds on the success of the first edition featuring new discoveries in powder technology, spraying techniques, new coatings applications and testing techniques for coatings -- Many new spray techniques are considered that did not exist when the first edition was published! The book begins with coverage of materials used, pre-spray treatment, and the techniques used. It then leads into the physics and chemistry of spraying and discusses coatings build-up. Characterization methods and the properties of the applied coatings are presented, and the
