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Nota di contenuto	Introduction to Low Pressure Gas Dynamic Spray; Contents; Preface; 1 Introduction; 1.1 General Description; 1.2 Overview of Competitive Technologies; 1.2.1 Coating Characterization; 1.2.2 Flame Spraying; 1.2.3 Arc Wire Spraying; 1.2.4 Plasma Spraying; 1.2.5 Rapid Prototyping; 1.2.6 Plasma Deposition Manufacturing; 1.2.7 Explosive Cladding; 1.3 Concluding Remarks; 2 Impact Features of Gas Dynamic Spray Technology; 2.1 Impact Phenomena in GDS; 2.1.1 Main Features; 2.1.2 Rebound and Erosion Processes; 2.1.3 GDS Processes; 2.2 One Particle Impact in GDS; 2.2.1 Shear Localization Phenomenon 2.2.2 Adiabatic Shear Instability in GDS2.2.3 Experiments Relating to Particle Impact; 2.3 Concluding Remarks; 3 Densification and Structure Formation of the Particulate Ensemble; 3.1 Identification of Various Phenomena; 3.2 Observations of GDS Consolidated Materials; 3.3 Energy Requirements for GDS Shock Consolidation; 3.3.1 Plastic Deformation Energy; 3.3.2 Microkinetic Energy; 3.3.3 Frictional Energy; 3.3.4 Adiabatic Shear Band Formation Energy; 3.3.5 Defect Energy; 3.4 Computation of ASB Energy Parameters; 3.5 Shear Localization During Particle Shock Consolidation 3.6 Impact Powder Compaction Model3.7 Behavior of Consolidating

Sommario/riassunto	Written by the inventor of the Gas Dynamic Spray (GDS) technique, this first monograph on the topic brings the understanding of the GDS coating formation process to a new qualitative nanostructural level, while introducing it to industrial and technological experts so that they can develop a new generation of coatings materials. Representing the results of over ten years of research in the field, the material discussed here covers nearly every aspect of the physical principles and applications of the GDS process, including topics in applied solid state physics, materials science, nanotechn