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Altri autori (Persone)	WendlerB. G (Bogdan G.) KulaP (Piotr) JedlinskiJ (Jerzy)
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Nota di contenuto	Surface Heat Treatment Design Methodology of Large-Scale Castings Technological Surface Layer Selection for Small Module Pitches of Gear Wheels Working under Cyclic Contact Loads ; Change of Micromechanical Properties of Polyethylene Induced by a Tribological Process in Polymer/Metal System ; Growth Structures and Phase Formation in Industrially Room-Temperature Pulsed Laser Deposited FCC Ti-Based Nitride Coatings ; Comparison of Shot Peening and Nitriding Surface Treatments under Complex Fretting Loadings Structure and Properties of the Wear Resistant Coatings Obtained in the PVD and CVD Processes on Tool Ceramics Oxidation Resistance of Nanocrystalline Microalloyed -TiAl Coatings under Isothermal Conditions and Thermal Fatigue ; Application of 18O2 Exposure-Based Approach to Study the Failure Mechanisms of Oxide Scales on Alumina Formers ; Strain Induced Up-Hill Diffusion of Hydrogen in Al; Keywords Index; Authors Index

## Sommario/riassunto

The compilation, 'Advanced Materials and Technologies', explores current research efforts and progress in the design and improvement of the performance of structural and functional materials. In particular, the book deals with the relationship between a material's production route, its chemical and phase compositions and microstructure on the one hand; and their influence upon every aspect of a wide range of its properties on the other hand: as well as the various factors which affect the efficiency of applied advanced technologies. Special attention is paid to nanostructures and to properties

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