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Sustainable Renovation within Metallurgical Production

by

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Preface

The aim of the monograph "**Sustainable renovation within metallurgical production**" is to demonstrate on selected components - rollers used in continuous steel casting lines, possibilities of increasing their lifetime and thereby minimize the cost of their recovery. The operating time of these components is greatly affected by the combination of degradation factors under severe tribological conditions. There are documented tribodegradation factors limiting the life of these components, surface recovery methods, procedures for assessing the quality of the newly created layers, the development of filler materials, the heat treatment procedures and the assessment of the quality of the renovation layers. The monograph summarizes the appropriate welding technologies and thermal spray with the specification of the technological parameters and procedures. The results of the long-term research of the authors' team in the field of creation and evaluation of the renovation layers' quality using experimental methods are presented. The research was also undertaken within the area of component renovation using the HVOF technology. The research results from the field of surface evaluation and analysis of the renovation layers' machinability are also published. The original detections mentioned in this monograph will contribute for transferring the research results into technical practice. The monograph can serve as a source of both technical and scientific information for scientific researchers and a broad professional community.

While writing the monograph authors comes out from the RIS 3 - Research and Innovation Strategy for the Intelligent Specialization of the Slovak Republic. Material research focusing on new materials, surface treatments and system diagnostics for applications in the areas of industry specialization of the Slovakia, especially in the automotive, mechanical, electrical, metallurgical and other sectors belongs to research and development priorities.

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