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Development of Laser Welding and Surface Treatment of Metals

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Constant striving to reduce pollutant emissions, greenhouse gases and energy consumption, i.e., sustainable development, forces the development of new and improved materials, technologies and manufacturing processes. One of the areas of sustainable development of the global economy is also the development of laser devices and the spreading of laser technology applications.

The book deals with important issues related to the development of science and technology in the field of application the laser beam for joining, surface treatment, coatings. However, the thematic scope is not limited only to mentioned issues. The scope of the book covers issues related to advances in computational modelling of heat sources in laser and arc processes, unique techniques of underwater welding or unique techniques of forced cooling the weld metal under solidification during arc welding or hybrid process of laser deposition under cryogenic conditions, microstructural and mechanical characterisation of coatings and joints produced by different welding technologies.

The above book contains valuable information, both theoretical and practical research results in the field of advanced technologies of joining, surface treatment and coatings, quality control and assessment, as well as management of the technological processes. Therefore, I deeply believe that the book will be a valuable and helpful for young scientists, engineers, and students in the field of welding and surface engineering, materials science, and manufacturing engineering.

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