ARC Plasma Technology in Materials Science

By Norman L. Hecht

Springer. Paperback. Condition: New. 220 pages. Dimensions: 9.6in. x 6.7in. x 0.5in.Although a considerable amount of information concerning the applications for arc plasmas in the materials sciences is available, it is contained in literally thousands of separate manuals, technical notes, textbooks, and government and industrial reports. Each source generally deals with only one specific application or, at best, a narrow range of utilization. This book was developed to provide a comprehensive and up-to-date compilation of information in the technology of arc plasma utilization. The book is divided into two general categories: flame spraying and materials evaluation. In the flame spraying section a comprehensive review of the plasma spraying process is presented. The design and operation of plasma spraying equipment are described. Included are a description of the nature of a plasma, and the design and operation of plasma generators, powder feed systems and accessory control equip ment. The general process procedures, and associated process variables are de scribed. Particular emphasis is given to the particle heating process and the mechanisms for adherence and cohesion of coatings. Competitive flame spraying equipment is also detailed (combustion process, detonation and electric arc) and compared with the plasma spray process. A discussion and compilation...

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