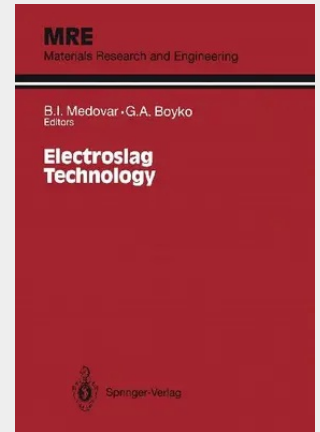


Electroslag Technology

Dr. Boris Medovar, a member of the Soviet Academy of Sciences, is a prominent member of the E.O. Paton Electric Welding Institute in Kiev, one of the pre-eminent institutes of the USSR. The Paton Institute, internationally famous for its entrepreneurial efforts in electrical welding processes, is also famous for its application of electrically based processes in melting and remelting of high alloy and high-temperature materials. These include the ESR (electroslag re melting) process, the ESC (electroslag casting) process, skull remelting based on electron-beam processes, plasma arc processes, and electric arc processes. Along with the ESR process for ingot production is the commercial plasma arc remelt process for specialty steels, particularly where high nitrogen contents may be desired, as in austenitic stainless steels. Major industrial centers are now scattered throughout the USSR and are a major factor in high-alloy, high strength, low- and high-temperature materials. The ESR process was developed in response to the Western development of the VAR (vacuum arc remelting) process for producing very highly alloyed materials during the growth period of the jet engine age. The VAR and ESR processes utilize different purification and refinement processes that are extremely critical in very highly, complexly alloyed superalloys and high-speed tool steels. In water-cooled remelt systems, they also achieve relatively rapid (directional) solidification, minimizing segregation and coarse phase separation of undesirable impurity elements or elements that tend to form coarse brittle phases.

Dr. Boris Medovar, a member of the Soviet Academy of Sciences, is a prominent member of the E.O. Paton Electric Welding Institute in Kiev, one of the pre-eminent institutes of the USSR. The Paton Institute, internationally famous for its entrepreneurial efforts in electrical welding processes, is also famous for its application of electrically based processes in melting and remelting of high alloy and high-temperature materials. These include the ESR (electroslag re melting) process, the ESC (electroslag casting) process, skull remelting based on electron-beam processes, plasma arc processes, and electric arc processes. Along with the ESR process for ingot production is the commercial plasma arc remelt process for specialty steels, particularly where high nitrogen contents may be desired, as in austenitic stainless steels. Major industrial centers are now scattered throughout the USSR and are a major factor in high-alloy, high strength, low- and high-temperature materials. The ESR process was developed in response to the Western development of the VAR (vacuum arc remelting) process for producing very highly alloyed materials during the growth period of the jet engine age. The VAR and ESR processes utilize different purification and refinement processes that are extremely critical in very highly, complexly alloyed superalloys and high-speed tool steels. In water-cooled remelt systems, they also achieve relatively rapid (directional) solidification, minimizing segregation and coarse phase separation of undesirable impurity elements or elements that tend to form coarse brittle phases.



53,49 €

49,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9781461277620

Medium: Buch

ISBN: 978-1-4612-7762-0

Verlag: Springer

Erscheinungstermin: 29.12.2011

Sprache(n): Englisch

Auflage: 1. Auflage 2011

Serie: Materials Research and Engineering

Produktform: Kartoniert

Gewicht: 515 g

Seiten: 270

Format (B x H): 170 x 244 mm

