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Autore	Mishra Rajiv Sharan
Titolo	Friction Stir Welding and Processing [[electronic resource]] : Science and Engineering / / by Rajiv Sharan Mishra, Partha Sarathi De, Nilesh Kumar
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ISBN	3-319-07043-6
Edizione	[1st ed. 2014.]
Descrizione fisica	1 online resource (347 p.)
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Soggetti	Structural materials Manufactures Mechanics Mechanics, Applied Structural Materials Manufacturing, Machines, Tools, Processes Solid Mechanics
Lingua di pubblicazione	Inglese
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Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Introduction -- Fundamentals of the Friction Stir Process -- Fundamental Physical Metallurgy Background for FSW/P -- Friction Stir Welding Configurations and Tool Selection -- FSW of Aluminum Alloys -- Friction Stir Welding of Magnesium Alloys -- Friction Stir Welding of High Temperature Alloys -- Dissimilar Metal Friction Stir Welding -- Friction Stir Processing -- Residual Stresses and Mitigation Strategies.
Sommario/riassunto	This book lays out the fundamentals of friction stir welding and processing and builds toward practical perspectives. The authors describe the links between the thermo-mechanical aspects and the microstructural evolution, and use of these for the development of the friction stir process as a broader metallurgical tool for microstructural modification and manufacturing. The fundamentals behind the practical aspects of tool design, process parameter selection and weld related

defects are discussed. Local microstructural refinement has enabled new concepts of superplastic forming and enhanced low temperature forming. The collection of friction stir based technologies is a versatile set of solid state manufacturing tools.