



Resistance Welding: Fundamentals and Applications, Second Edition

By Hongyan Zhang, Jacek Senkara

Download now

Read Online ➔

Resistance Welding: Fundamentals and Applications, Second Edition By Hongyan Zhang, Jacek Senkara

Drawing on state-of-the-art research results, **Resistance Welding: Fundamentals and Applications, Second Edition** systematically presents fundamental aspects of important processes in resistance welding and discusses their implications on real-world welding applications. This updated edition describes progress made in resistance welding research and practice since the publication of the first edition.

New to the Second Edition:

- Significant addition of the metallurgical aspects of materials involved in resistance welding, such as steels, aluminum and magnesium alloys, zinc, and copper
- Electric current waveforms commonly used in resistance welding, including single-phase AC, single-phase DC, three-phase DC, and MFDC
- Magnesium welding in terms of cracking and expulsion
- The effect of individual welding parameters
- 2-D and 3-D lobe diagrams
- New materials for the ultrasonic evaluation of welds, including A-scan, B-scan, and in-line A-scan

The book begins with chapters on the metallurgical processes in resistance spot welding, the basics of welding schedule selection, and cracking in the nugget and heat-affected zone of alloys. The next several chapters discuss commonly conducted mechanical tests, the monitoring and control of a welding process, and the destructive and nondestructive evaluation of weld quality. The authors then analyze the mechanisms of expulsion—a process largely responsible for defect formation and other unwanted features—and explore an often overlooked topic in resistance welding-related research: the influence of mechanical aspects of welding machines. The final chapters explain how to numerically simulate a resistance welding process and apply statistical design and analysis approaches to welding research.

To obtain a broad understanding of this area, readers previously had to scour large quantities of research on resistance welding and essential related subjects, such as statistical analysis. This book collects the necessary information in one source for students, researchers, and practitioners in the sheet metal industry. It thoroughly reviews state-of-the-art results in resistance welding research and gives you a solid foundation for solving practical problems in a scientific and systematic manner.

 [Download Resistance Welding: Fundamentals and Applications, ...pdf](#)

 [Read Online Resistance Welding: Fundamentals and Application ...pdf](#)

Resistance Welding: Fundamentals and Applications, Second Edition

By Hongyan Zhang, Jacek Senkara

Resistance Welding: Fundamentals and Applications, Second Edition By Hongyan Zhang, Jacek Senkara

Drawing on state-of-the-art research results, **Resistance Welding: Fundamentals and Applications, Second Edition** systematically presents fundamental aspects of important processes in resistance welding and discusses their implications on real-world welding applications. This updated edition describes progress made in resistance welding research and practice since the publication of the first edition.

New to the Second Edition:

- Significant addition of the metallurgical aspects of materials involved in resistance welding, such as steels, aluminum and magnesium alloys, zinc, and copper
- Electric current waveforms commonly used in resistance welding, including single-phase AC, single-phase DC, three-phase DC, and MFDC
- Magnesium welding in terms of cracking and expulsion
- The effect of individual welding parameters
- 2-D and 3-D lobe diagrams
- New materials for the ultrasonic evaluation of welds, including A-scan, B-scan, and in-line A-scan

The book begins with chapters on the metallurgical processes in resistance spot welding, the basics of welding schedule selection, and cracking in the nugget and heat-affected zone of alloys. The next several chapters discuss commonly conducted mechanical tests, the monitoring and control of a welding process, and the destructive and nondestructive evaluation of weld quality. The authors then analyze the mechanisms of expulsion—a process largely responsible for defect formation and other unwanted features—and explore an often overlooked topic in resistance welding-related research: the influence of mechanical aspects of welding machines. The final chapters explain how to numerically simulate a resistance welding process and apply statistical design and analysis approaches to welding research.

To obtain a broad understanding of this area, readers previously had to scour large quantities of research on resistance welding and essential related subjects, such as statistical analysis. This book collects the necessary information in one source for students, researchers, and practitioners in the sheet metal industry. It thoroughly reviews state-of-the-art results in resistance welding research and gives you a solid foundation for solving practical problems in a scientific and systematic manner.

Resistance Welding: Fundamentals and Applications, Second Edition By Hongyan Zhang, Jacek Senkara **Bibliography**

- Sales Rank: #1771567 in Books

- Brand: Brand: CRC Press
- Published on: 2011-12-13
- Original language: English
- Number of items: 1
- Dimensions: 1.10" h x 7.00" w x 10.10" l, 2.11 pounds
- Binding: Hardcover
- 456 pages

 [Download Resistance Welding: Fundamentals and Applications, ...pdf](#)

 [Read Online Resistance Welding: Fundamentals and Application ...pdf](#)

Download and Read Free Online Resistance Welding: Fundamentals and Applications, Second Edition By Hongyan Zhang, Jacek Senkara

Editorial Review

Review

"The second edition has made a great book even better. It remains a significant, practical aid to anyone interested in a better understanding of resistance welding science and it should be considered for their library."

?*Welding Journal*, February 2013

Praise for the First Edition:

"The chapters are easy to comprehend, and the topics are presented in a 'big picture' basis. ... General concepts are the highlight. ... There are 20 to 40 references at the end of each chapter, and most of the chapters begin with a good literature, which then allows this book to be used as an introduction to welding at the graduate level in an engineering discipline."

?*JOM Online*, March 2006

"[this book] will almost certainly find its way into the library of anyone who needs or wants to understand the physics behind resistance spot welding ... [It offers] a detailed analysis of the physics involved in the resistance welding process that is, for the most part, remarkably easy to understand. ... They [the authors] have also reinforced their methodical explanations with nearly 300 original graphics ... For both the student and process user, there is a lot of basic information presented in an easy-to-read fashion ... For theoretical studies or laboratory work, there is a bounty of information beyond the excellent compilation of reference materials. It might be too soon to proclaim this work as historically significant, but it seems a virtual certainty that it will be viewed as such. In any case, the authors have certainly done a great service to the resistance welding industry."

?David Beneteau, CenterLine Ltd., Windsor, Ontario, Canada

About the Author

Dr. Hongyan Zhang is an associate professor in the Department of Mechanical, Industrial, and Manufacturing Engineering at the University of Toledo. He has published over 70 peer-reviewed journal and conference papers and contributed to a number of American Welding Society Standards. His research interests include materials, forming, welding, and mechanical fastening; manufacturing process monitoring and control; failure analysis; structural optimization; and hybrid propulsion systems.

Dr. Jacek Senkara is a professor of the Production Engineering Faculty at Warsaw University of Technology. He has published roughly 100 scientific and technical papers in professional journals and conference proceedings and served as a principal investigator for a number of government, industry, and university-supported research projects. His research interests include materials aspects of welding and welding-related processes, along with the surface modification of materials.

Users Review

From reader reviews:

Irene Holmes:

A lot of people always spent their particular free time to vacation or go to the outside with them loved ones or their friend. Do you know? Many a lot of people spent that they free time just watching TV, or even playing video games all day long. If you want to try to find a new activity that is look different you can read any book. It is really fun in your case. If you enjoy the book that you simply read you can spent all day every day to reading a book. The book Resistance Welding: Fundamentals and Applications, Second Edition it is very good to read. There are a lot of folks that recommended this book. They were enjoying reading this book. Should you did not have enough space to create this book you can buy the actual e-book. You can m0ore easily to read this book from a smart phone. The price is not too expensive but this book possesses high quality.

Jeffrey Chambers:

Are you kind of stressful person, only have 10 as well as 15 minute in your moment to upgrading your mind expertise or thinking skill even analytical thinking? Then you are receiving problem with the book compared to can satisfy your short period of time to read it because all this time you only find book that need more time to be read. Resistance Welding: Fundamentals and Applications, Second Edition can be your answer mainly because it can be read by a person who have those short free time problems.

Florinda Redfern:

You may spend your free time to read this book this publication. This Resistance Welding: Fundamentals and Applications, Second Edition is simple bringing you can read it in the area, in the beach, train in addition to soon. If you did not get much space to bring the printed book, you can buy the particular e-book. It is make you simpler to read it. You can save often the book in your smart phone. And so there are a lot of benefits that you will get when one buys this book.

Audrey Mack:

What is your hobby? Have you heard in which question when you got college students? We believe that that question was given by teacher to their students. Many kinds of hobby, Every individual has different hobby. Therefore you know that little person such as reading or as reading become their hobby. You should know that reading is very important as well as book as to be the issue. Book is important thing to incorporate you knowledge, except your personal teacher or lecturer. You will find good news or update in relation to something by book. A substantial number of sorts of books that can you go onto be your object. One of them is Resistance Welding: Fundamentals and Applications, Second Edition.

Download and Read Online Resistance Welding: Fundamentals and Applications, Second Edition By Hongyan Zhang, Jacek Senkara

#FW5X7QKIR0V

Read Resistance Welding: Fundamentals and Applications, Second Edition By Hongyan Zhang, Jacek Senkara for online ebook

Resistance Welding: Fundamentals and Applications, Second Edition By Hongyan Zhang, Jacek Senkara Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Resistance Welding: Fundamentals and Applications, Second Edition By Hongyan Zhang, Jacek Senkara books to read online.

Online Resistance Welding: Fundamentals and Applications, Second Edition By Hongyan Zhang, Jacek Senkara ebook PDF download

Resistance Welding: Fundamentals and Applications, Second Edition By Hongyan Zhang, Jacek Senkara Doc

Resistance Welding: Fundamentals and Applications, Second Edition By Hongyan Zhang, Jacek Senkara Mobipocket

Resistance Welding: Fundamentals and Applications, Second Edition By Hongyan Zhang, Jacek Senkara EPub

FW5X7QKIR0V: Resistance Welding: Fundamentals and Applications, Second Edition By Hongyan Zhang, Jacek Senkara