

Selected Technical Papers



STP 1542

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# Rolling Element Bearings

9th Volume

*Guest Editors:*

Yoshimi R. Takeuchi

William F. Mandler

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## **Rolling Element Bearings**

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# Foreword

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THIS COMPILATION OF *Selected Technical Papers*, STP1542, *Rolling Element Bearings*, contains peer-reviewed papers that were presented at a symposium held April 13–14, 2011 in Anaheim, CA, USA. The symposium was sponsored by ASTM International Committee F34 on Rolling Element Bearings.

The Symposium Chairperson was Dr. Yoshimi R. Takeuchi, The Aerospace Corporation, Los Angeles, CA and the Co-Chair was Mr. William F. Mandler, Enceratec, Inc., Columbus, IN. The Associate Editor of the STP publication is Dr. Richard Neu and the Editors are Dr. Yoshimi R. Takeuchi and Mr. William F. Mandler.



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## Overview

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This book comprises a select collection of papers based on presentations given at the 2011 ASTM International Symposium on Rolling Element Bearings, on April 13–14, 2011 in Anaheim, CA. A total of twenty presentations provided insight into continuing advances in bearing technology. Of these, eight were chosen to be peer reviewed and selected for inclusion in this Special Technical Publication.

The symposium was the seventh in a series intended to share bearing technology developments at the international level. The first four symposia were sponsored by the REBG (Rolling Element Bearing Group). The seventh symposium is the third sponsored by ASTM International. Dr. Yoshimi R. Takeuchi served as symposium chair while the co-chair was Mr. William F. Mandler.

The Symposium's audience included bearing designers and developers, manufacturers of bearings and parts, material producers, researchers, and those interested in advanced bearing applications and bearing system development. The goal is to provide an overview of recent achievements in bearing technology and provide the engineer insight into ways this information could be used.

A global panel of experts was assembled to address various topics, including the introduction of novel testing methods together with acquired data. Other papers describe new analytical approaches for assessing the life of hybrid bearings and predicting cage instability, cover failure modes and their solutions, and convey means of designing rolling element bearings. In addition, this book contains unique test data on new materials, including advanced ball and race materials and the impact of lubricant impurities on performance. These subjects help create a technical knowledge base that enhances the bearing engineer's capabilities.

The papers contained herein demonstrate the commitment of the ASTM F34 committee to provide timely information to the rolling element bearing technology community.



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