Advances in Cryogenic Engineering

VOLUME 45, PART A

Chief Editor Quan-Sheng Shu

AMAC International, Inc. Newport News, Virginia

CEC Editorial Committee

William Burt

TRW, Inc. Redondo Beach, California

Michael DiPirro

NASA/Goddard Space Flight Center Greenbelt, Maryland

David Glaister

Ball Aerospace & Technologies Corp. Boulder, Colorado

John Hull

Argonne National Laboratory
Argonne, Illinois

Patrick Kelley

Los Alamos National Laboratory Los Alamos, New Mexico

Peter Kittel

NASA/Ames Research Center Moffett Field, California

Vitalij Pecharsky

Ames National Laboratory Ames, Iowa

Ray Radebaugh

National Institute of Standards and Technology Boulder, Colorado

Charles Reece

Thomas Jefferson National Accelerator Facility Newport News, Virginia

Jay Theilacker

Fermi National Accelerator Laboratory Batavia, Illinois

Klaus Timmerhaus

University of Colorado Boulder, Colorado

Steven Van Sciver

National High Magnetic Field Laboratory
Tallahassee, Florida

John Zbasnik

Lawrence Berkeley National Laboratory Berkeley, California

Albert Zeller

Michigan State University East Lansing, Michigan

KLUWER ACADEMIC/PLENUM PUBLISHERS

New York, Boston, Dordrecht, London, Moscow

FOREWORD

Scientists and engineers from all over the world arrived at the Palais des Congrès de Montréal Convention Center in Montreal, Québec, for the 1999 Cryogenic Engineering Conference and International Cryogenic Materials Conference (CEC/ICMC), the last conference of the millennium. The participants spanned all regions of the globe, eagerly looking forward to the advancements in cryogenics in the 21st century.

The editorial team is delighted to present to you an Advances in Cryogenic Engineering volume consisting of high quality articles representing much enthusiasm in the field of Cryogenics. Volume 45 is comprised of 248 individual papers presented at the 1999 Cryogenic Engineering Conference. Divided into two books, the contents reflect substantial interest in cryocoolers and their relevant space applications. Likewise, this volume presents exciting and novel approaches in superconducting magnets, SRF cavities, and their applications, thus providing a deeper understanding of superfluid phenomena and large-scale refrigeration than in any of the preceding years.

REVIEWING THE EDITORIAL PROCESS

For this volume qualified reviewers evaluated submitted papers on its scientific and practical relevance, as well as its academic presentation, specific to that individual reviewer's area of expertise. This specialized feedback enabled the editorial team to better evaluate each paper, offer more field-specific suggestions, and simultaneously increase the quality of each article. If satisfied with the standards set in the paper, reviewers then passed each paper to a technical sub-editor who decided if the paper would be accepted, rejected, or returned to the authors for further revision. Finally, each paper was sent to the Chief Editor who made a final decision on its suitability for inclusion in the published volume. Even at this stage, a paper could be returned for further editing before inclusion for publishing. However, the Chief Editor's main objective was to improve the quality of the paper and, consequently, the quality of the volume.

Though selection and review is an important part of the process, organizing for the publication is also an involved task. The database for assimilating all the information relating to the papers and the organization of the review system was created by Jin-Xing Yan and Hong-Yu Zhang. Ian King and Loren Loving worked closely with the Chief Editor to produce the final edition of this volume.

Finally, without the Reviewers and co-editors who generously volunteered their time, and the numerous contributions of Kluwer Academic/Plenum Publishers, Advances in Cryogenic Engineering, Volume 45 would not have been published. A debt of gratitude is due to these groups of people.

Quan-Sheng Shu AMAC International Inc. Applied Research Center Newport News, VA