



RESEARCH IN POOL AND SPA WATER CHEMISTRY

*THE FOURTH ANNUAL
NSPI WATER CHEMISTRY
TECHNICAL SYMPOSIUM*

EDITOR:

J. QUE HALES
JSPSI/POOL CHLOR
TUCSON, ARIZONA

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*The Fourth Annual
NSPI Water Chemistry
Technical Symposium*

Editor:

**J. Que Hales
JSPSI / Pool Chlor
Tucson, Arizona**

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Editor: J. Que Hales – Journal of the Swimming Pool and Spa Industry / Pool Chlor

Preface

This volume contains the proceedings of the technical symposium entitled *Research in Pool and Spa Water Chemistry* which was held on November 30, 1999 in Las Vegas, Nevada. This symposium, which was sponsored by NSPI and many of its member companies, brought together nearly 200 individuals from government laboratories, universities, and industry with a diversity of backgrounds. As the symposium title suggests, the central theme of the symposium was to discuss new technical research regarding swimming pool and spa water chemistry.

Although much valuable, technical information has been previously published in scientific journals on many of the subjects covered in this proceedings, the organizers felt a deeper commitment to creating a contemporary forum for the cross fertilization of technological ideas between the industry's leading scientific researchers and pool and spa trade professionals. This fourth volume in a series is a result of that effort.

A total of 10 papers were presented at the symposium. Eight of the presented papers appear here. All papers were subject to review and editing by the Editor. The published papers reflect the views of the authors and not necessarily those of the Editor.

J. Que Hales

Forward

In 1996, Ray Denkewicz, Jr. and J. Que Hales assisted NSPI in establishing a Symposium Series, to be held at its Annual Expositions. These symposia advance the NSPI's interest in providing a forum for the exchange of ideas, information and experience among those with professional interest in the science and technology of swimming pools and spas. This year's symposium is the fourth in what has become a continuing series of symposia serving to elevate the education, integrity and quality of our industry.

Rich Werber
President, NSPI

Carvin DiGiovanni
Technical Director, NSPI

Acknowledgments

The organizers would like to extend their appreciation to the following sponsors who either donated their time and talents or provided direct financial contributions to make this symposium possible.

(In alphabetical order)

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Special thanks to Pat Smith, Programs Coordinator at NSPI, who graciously accepted the responsibility of coordinating all the details that were associated with the planning and execution of the symposium, including the printing of this book. Thanks also to Eric Carlson, NSPI President, for making general introductory remarks on behalf of the National Spa and Pool Institute.

Order information for audio tapes of the presentations:

As part of the NSPI Educational Audio Cassette Program, all of the presentations made at the symposium were audio recorded. For information on availability and pricing of the set of four audiocassettes, please contact the National Spa and Pool Institute at:

National Spa and Pool Institute
2111 Eisenhower Avenue,
Alexandria, VA 22314-4698

Phone: 703-838-0083 ext. 124

Fax: 703-549-0493

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At the conclusion of the presentations, the presenters formed a panel to answer questions and discuss issues relative to the subjects brought up during the day. The panelists included (above right to left) Denise Kennedy, Pamela Watt, John Wojtowicz, and Amy Oswald, as well as (below right to left) Theresa Souza, Dr. Emil Milosavljevic, Chris Nalepa, Dr. Dean Adams, Dr. Roy Vore, and Dr. Wolfram Hartwig.

