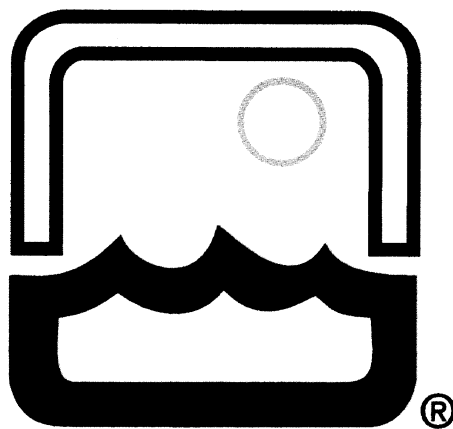


ADVANCES IN POOL AND SPA WATER CHEMISTRY – ANALYSIS MEASUREMENT & TESTING



NATIONAL
SPA & POOL
INSTITUTE

Edited by:

J. QUE HALES
RAY DENKEWICZ, JR.

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1998

Advances in Pool and Spa Water Chemistry – Analysis, Measurement, & Testing

*The Third Annual
NSPI Water Chemistry
Technical Symposium*



Publishing Editor:

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

Technical Editor:

**Ray Denkewicz, Jr.
Zodiac North American Pool Care Sector
Smithfield, RI**

**Symposium Series
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Publishing Editor: J. Que Hales – Journal of the Swimming Pool and Spa Industry / Pool Chlor
Technical Editor: Ray Denkewicz, Jr. – Zodiac North American Pool Care Sector

Preface

This volume contains the proceedings of the technical symposium entitled *Advances in Pool and Spa Water Chemistry – Analysis, Measurement, & Testing* which was held on October 27, 1998 in New Orleans, Louisiana. 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 the analytical and evaluational aspects of 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 third volume in a series is a result of that effort.

A total of twelve papers were presented at the symposium. Ten of the presented papers appear here. All papers were subject to review by the Editors after which authors had an opportunity to respond to the Editors' comments. Because a primary goal of the Editors was reasonably rapid publication, the revised papers were accepted without further revision. Thus, the published papers reflect the views and standards of the authors and not necessarily those of the Editors.

J. Q. Hales
R. Denkewicz, Jr.

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 third in what has become a continuing series of symposia serving to elevate the education, integrity and quality of our industry.

Eric Carlson
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)

AquaCheck
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Zeneca
Zodiac North American Pool Care Sector

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 five 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

The catalog numbers for the five tapes covering the day-long symposium are 98NSPI-1A, 98NSPI-1B, 98NSPI-1C, 98NSPI-1D, and 98NSPI-1E.

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