

New ISA book explores evolution of temperature, pressure and flow technologies, reveals new, more advanced solutions for measuring time, length and area

New ISA book contains innovative solutions for measuring flow, time, and area proposed by Flow Research president

Contact: Leslie Buchanan, Flow Research:

+1 781-245-3200, leslie@flowresearch.com

Wakefield, MA (April 4, 2016) – The International Society of Automation (ISA) announces it has published a new book that provides a detailed examination of past and current temperature, pressure and flow technology while proposing new, alternative units of measurement that fall in line with 21st century advances and thinking.

The Tao of Measurement: A Philosophical View of Flow and Sensors, written by Jesse Yoder, Ph.D., and Richard E. Morley. Dr. Yoder is president of Flow Research (www.flowresearch.com), a market research company located in Wakefield, Massachusetts. The book describes the underlying principles of flow and measurement to reveal how evolving technologies have paved the way for modern developments in which systems and instrumentation can be integrated and measurement practices vastly improved.

“This is an important book that has the potential to make a significant impact on the world of instrumentation and process control as well as philosophy,” says Dr. Yoder, a widely recognized authority and expert on flow measurement and market research. “Unlike other books that focus on similar subject matter, this book presents an easy-to-understand and intuitive explanation of temperature, pressure and flow technology with discussions of familiar as well as previously unpublished ideas. It challenges many long-held assumptions while proposing new solutions that, if adopted, would significantly improve the measurement of time, length and area.”

The book’s opening chapters explore the principles of operation behind all the main types of temperature sensors, pressure sensors, transmitters and flowmeters, and discuss their advantages, disadvantages and applications. Each chapter includes a handy glossary of units of measurement.

The authors then turn their attention to three very familiar but vital subjects: time, length, and area. They trace the origins of today’s units of measurement for these variables all the way back to Greek and Roman times, then follow their development to today’s atomic clocks and the standard meter, now defined in terms of wavelengths of light.

“This is the only book I am aware of that presents a non-technical and understandable explanation of all the main product types related to temperature, pressure and flow in a single

resource,” Dr. Yoder points out. “The chapters are easy to read and provide practical knowledge that will benefit any professional in instrumentation or process control.”

He asserts that many professionals involved in flow and other areas of instrumentation are familiar with the types of products they specialize in, but are less familiar with the operating principles and applications of other types of instrumentation they encounter every day.

“Our book also represents a fresh approach because it proposes some new ways of thinking that, if adopted, would improve our units of measurement and free them from the influence of ancient and out-of-date concepts,” Yoder emphasizes. “While technology has evolved, it has done so using concepts older than Roman chariot wheels.”

He advocates the use of modern technologies that can dramatically improve units of measurements.

“These new technologies reflect a reality of a dynamic and changing universe, one in which systems can be integrated with more effective measurement practices and more powerful sensors and tools of flow measurement. Systems and instrumentation, the yin and yang of the automation world, are finally united in a synthesis that comes from seeing both from a single perspective. These approaches have not been proposed elsewhere and they are proposed for the first time in this book.”

New perspectives on flow, time, length and area

Yoder points to the chapters on flow, time, length and area as being particularly insightful.

The chapter on flow, he says, provides an authoritative evaluation of all the flow technologies (including Coriolis, ultrasonic, turbine, and many others) and their applications, along with “the paradigm case method of flowmeter selection I originally proposed. It also points out the distinction between new-technology and traditional-technology flowmeters, which I first presented to the industry in 2001 and has become standard terminology within the flowmeter industry.

“The chapter on time deserves special attention because it proposes the concept of flowtime as a way to divide time into smaller units, bringing our time-keeping units into harmony with the decimal thinking that is pervasive elsewhere in the world, especially in the metric system.”

The chapter on length, he says, reviews the development of commonly used terms for feet, yards and meters, and examines the paradoxes present in the concepts of ‘point’ and ‘line.’

“It’s essential to look at old concepts in new ways and avoid the paradoxes uncovered in order to gain a more coherent understanding of our fundamental geometric concepts,” Yoder explains.

He says the chapter on area describes some of the difficulties inherent in Euclidean geometry, which was developed around 300 B.C., and proposes a new geometry based on the round inch.

- See more at: Tao of Flow (<http://www.taofflow.com>)

About Flow Research

Flow Research, with headquarters in Wakefield, Massachusetts, is the only independent market research company whose primary mission is to research flowmeter and other instrumentation products and markets worldwide. Flow Research has years of experience in doing both off-the-shelf studies and custom work. Published studies can be purchased by anyone interested in the topics. These studies are developed through interviews with suppliers, distributors, and end-users, and are presented in a clear and consistent manner. Topics include all of the flowmeter technologies – both new and traditional – as well as temperature sensors, temperature transmitters, level products, and pressure transmitters.

A growing area of interest – especially related to custody transfer – is flowmeter calibration. Flow Research has recently completed two studies, one on gas and one on liquid, of flow calibration facilities and markets (<http://www.flowcalibration.org>).

The company also focuses on the energy industries, especially on oil and gas production and measurement. Special topics include custody transfer, multiphase measurement, and liquefied natural gas (LNG). A series of quarterly reports called the Worldflow Monitoring Service provides regular updates on both the flowmeter markets and the energy industries (<http://www.worldflow.com>).

For more information, visit <http://www.flowresearch.com> or call +1 781-245-3200.