



Wilmington Section ISA
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Wilmington Section ISA

ISA—The Instrumentation, Systems, and Automation Society



Check out our web page at <http://www.isa.org/community/wilmi>

Wilmington ISA

**"Instrumentation for temperature control to
prevent cooling tower melt down"**

6:00 PM, Tuesday, May 24, 2005

at

Applied Control Engineering (ACE)

Directions at www.ace-net.com

RSVP to: Mike Morkun

ISA SENSOR

Published By
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The Sensor

May 2005

**May 24th Meeting
6:00 PM at ACE**

**“Instrumentation for
temperature control to prevent
cooling tower melt down”**

**Presented by Mukund G Joshi
American Hydrother a Division
of Patterson Process
Equipment Corp.**

Topic Abstract:

Some batch processes require heating and cooling over a wider than normal temperature range. Business pressure to maximize production rate pushes the equipment designers and operating personnel to aim for shorter cycle times. When rapidly switching from the heating to cooling mode calls for cooling tower water, the initial slug of hot water in the tower return line may exceed the thermal rating of the cooling tower internals, resulting in damage, down time, and loss of production.

This presentation will discuss the simple instrumentation circuit utilized to solve this problem.

Speaker Bio:

Mukund G. Joshi is working as a project manager at American Hydrother, a Division of Patterson Process Equipment Corp, of Newark, DE, 19711.

A licensed professional engineer in the state of Ohio, he holds a B.S. in Mechanical engineering and M.S. in Reliability Engineering from Indian Institute of Technology, India.

FUTURE EVENTS

**June 28th - Annual Picnic
Ralph L. Moore Scholarship
Award**

July - Enjoy the Summer!

Speaker Bio Cont:

He has been working on design and engineering of heat transfer systems, using hot water, hot oil and molten salt as heat transfer medium, to server industrial process temperature control applications ranging from ambient to 1000 degrees F.

**A free light meal will be served at
6:00 PM and the presentation will
begin at 6:30 PM.**

Please RSVP to Mike Morkun at
michael.b.morkun@usa.dupont.com

**2005 President's Spring Meeting
By Stephen Prettyman, WISA
President-Elect**

Being new to ISA leadership and not knowing what to expect, I was pleasantly surprised when Ken Lawrence asked me to attend the 2005 President's Spring Meeting in Portland, Oregon. Because this was my first trip to Portland and my first President's Meeting, I really had no sense of what to expect from this adventure; however, the entire journey was truly a rewarding and enlightening experience for me, both personally and professionally. Saturday morning, the first of my three-day visit, began with registration, a meeting schedule, and a nametag with a mysterious blue dot that I soon discovered signified first time attendees and is intended to encourage interaction and dialog with the repeat attendees.

After a whirlwind morning of meeting new people and a delicious steak lunch at Stanford's, I attended the requisite First Timer's Orientation and the Section Finance workshop in the afternoon. After the day's sessions, there was a reception complete with conversation, cocktails, and hors d'ouvres. It was here that I was introduced to several folks from District II and elsewhere with whom I soon enjoyed a wonderful German dinner at Rhineland.

Sunday morning began with attending the very valuable Certified Automation Professional Program workshop presented by Vernon Trevathan, followed by a visit to the Membership Committee where it became clear that recruiting and retaining membership is still very difficult. Later, I attended the Section Leaders Roundtable, which quickly became a debate involving Dalton Wilson and the President of the Toronto section regarding the section's recent legal woes. The day concluded with splendid dinner and a scenic ride on the Willamette River aboard the Portland Spirit.

Monday morning activities included volunteering as Associate Director of Honors & Awards for the Management Division under the leadership of Ted Gibbon. I then struck out on my own to experience the beautiful Portland Test Rose Garden in the early afternoon. The day concluded with a fine seafood meal at McCormick and Schmick's.

My first exposure to the ISA President's Spring Meeting was a tremendously powerful experience. I recommend that all Presidents-Elect attend the Spring President's Meeting prior to their term as President because it provides the fundamentals necessary to set goals, establish direction, and truly understand the mission of the ISA.

**The History of Batch - BBB
Batch Control Systems:
Design, Application, and
Implementation by Thomas
Fisher and Computer Control
of BATCH Processes by
William Shaw
Reviewed by Nick Sands**

Before the S88 standard, there were few resources on the batch control. In 1982 William T Shaw published Computer Control of BATCH Processes through EMC controls and in 1990 Thomas Fisher published Batch Control Systems through ISA. While the computer technology discussed in both books is obsolete, and some terminology may have changed, the authors do provide excellent insight into batch control methods. Both books, especially Batch Control Systems have some very good material.

Dr Shaw has over 28 years of experience at several companies, including Swantech, Hathaway Corp, EMC Controls, Texas Instruments and the Foxboro Corporation. Shaw holds a B.S. Electrical & Computer Engineering from the University of Michigan, a M.S. Engineering Science from Loyola College, and a PhD Computer Science from Kennedy-Western University.

Thomas Fisher, who was widely regarded as the father of batch automation, passed away in 2001 at the age of 60, sadly within a month of retiring from Lubrizol after 34 years. Fisher had BS in Chemical Engineering from Grove City College and a MS in Chemical Engineering from WVU. Fisher was an ISA Fellow, and served as an officer in ISA and chairman of SP88. Fisher was a leader in the World Batch Forum, which awarded him the Dr. Guido Carlo-Stella award. Control Engineering Magazine awarded him Engineer of the Year award in 1997.

Shaw starts by stating that steps and phases are the same, a reflection on the terminology of the time and the progress made since S88 was issued.

He covers batch basics, the basics of computer control, the requirements for a batch computer control system, how to specify a system, the many considerations of installing a computer for control, and finally the development and documentation of batch sequence logic. The book is easy to read with many graphics and a nice example problem in appendix A. Shaw covers a number of topics related to batch and computer control such as grounding and back-up power.

Fisher covers even more ground, with many reference to papers, the state of S88 at the time, and to Shaw's book. Of course he starts with the basics of terminology and batch process characteristics and then covers the models and control structures that were later formalized in S88. Fisher highlights considerations for regulatory control in batch processes as well as alarms and interlocks. There is a large chapter that compares various techniques for documenting sequence control logic, one of the highlights of the book, followed by a discussion of the layers above the actual control like batch and recipe management. The implementation chapters cover the PLC and PC capabilities circa 1990 in great detail. A variety of topics, including justification, reliability, communications and database management are the focus of the final sections. Fisher's writing style makes the book more of a collection of lists than topical paragraphs.

While these books are not current, there are very few affordable books on batch control available. Reading them is a great way to increase your understanding of batch control and the history of batch automation. Because the books are out of date, Shaw refers to printers as typers and Fisher predicts that all systems will use MAP and not Ethernet, they can only be rated borrow (BBB). Both books are out of print, so prices vary with current availability. Computer Control of BATCH Process was available for under \$12 while Batch Control Systems was about \$60.

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