Honorable Members of PUPID,

Well, it is already the third week of May and I am in the midst of recommissioning the International Paper mill here in Franklin, Virginia

Just like last newsletter, we still need a Director-Elect, and a symposia coordinator. The Director-Elect will train with me in 2012 and take over as Director for the 2013/2014 biennium. If you can only do it for a single year, then we can look at single terms. In return for the work, you’ll get your ISA Spring and Fall Conference expenses paid by the division.

This September, the ISA Automation Week 2012 will be at the Orange County Convention Center in Orlando, Florida. If you’ve thought about getting involved with a technical conference and/or writing a paper, this is for you. You can bring the family to play at Disney World while you see all of the latest instrumentation and controls at the Fall conference.

Our division membership has increased from 450 to 451 members with 4 new division members since February. The membership has stayed nearly constant since last January Welcome to all of you new members!

I am also pleased to be able to include Rick Van Fleet’s paper and see his presentation for “Bleach Load: A New Inline Sensor based Improvement for Bleach Plant Advance Control” from the PacWest 2012 Conference last month in Jasper, Alberta.

I hope it is an encouragement to you to become more involved with the Division and to enroll more members from the great international pulp & paper community.

Please do not hesitate to contact me at either (251) 454-1200 or brad.carlberg@bsc-engineering.com to discuss how you can help PUPID.

Do feel free to forward the Newsletter to your friends and colleagues who may have an interest in it.
TUNING TIP:

ABSTRACT

This TUNING Tip was excerpted from "" by
ISA Members can download this paper FOR
FREE from the ISA website.

Calendar of Events

Get a quick overview of the ISA PUPID
events for 2011 by going to the Calendar at:
http://www.isa.org/~pupid/2012_PUPID_Cale
nder.htm

2012 Pan Pacific Conference
11/20/2012 to 11/22/2012
Hotel Horison
Bandung, West Java Indonesia
http://www.reptech2012.org/

2012 TAPPI PEERS Conference
10/14/2012 to 10/18/2012
Marriott Savannah Riverfront
Savannah, GA USA
http://www.tappipeers.org/

2012 BLRBAC Fall Meeting
10/1/2012 to 10/3/2012
Crown Plaza Hotel Atlanta Airport
Atlanta, GA
www.blrbac.org

2012 China Paper Technical Conference
9/10/2012 to 9/12/2012
Sheraton Shanghai Hongqiao Hotel
Shanghai
http://www.chinapaperexpo.cn/

2012 ISA FALL LEADERS MEETING
SATURDAY, SEPT 22 2012 AND SUNDAY,
SEPT 23 2012

ISA AUTOMATION WEEK 2011
MONDAY, SEPT 24 2012 THROUGH
THURSDAY, SEPT 27 2012
ORANGE COUNTY CONVENTION CENTER
ORLANDO, FL
Come meet your leaders & get involved!

ABTCP 2012-45th Pulp & Paper
International Congress & Exh
10/9/2012 to 10/11/2012
Transamerica Expo Center
Sao Paulo, Brasil
http://www.abtcp2011.org.br/ingles/
### LISTEN TO THE TECHNICAL SESSIONS FROM ISA AUTOMATION WEEK 2011

#### Wireless Track

**Wireless Measurement and Control Opportunities Tutorial**

**Session Moderator:** Tom Fillers; Filltronic Services; Mobile, AL

<table>
<thead>
<tr>
<th>AUDIO</th>
<th>POWERPOINT</th>
<th>PAPER</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Greg McMillan</td>
<td></td>
</tr>
</tbody>
</table>

**Wireless, CyberSecurity, & Control Systems**

**Session Moderator:** Kenneth R. Williams; Instrument Control Specialist Sr. Alabama Power Company Barry Generating Plant; Bucks, AL

<table>
<thead>
<tr>
<th>AUDIO</th>
<th>POWERPOINT</th>
<th>PAPER</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Wireless In-Core Detector Instrumentation (WIDI) - Jorge Carvajal/Westinghouse Nuclear</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The opportunities and threats of the wireless technology market in process control - Mitra Moghaddam (Presenter) &amp; Peyman Shahsavari</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Wireless, CyberSecurity, Control Systems - Designing a Resilient SCADA System - Peter Fuhr Oak Ridge National Laboratory</td>
</tr>
</tbody>
</table>

**Large Scale Sensor Networks Tutorial**

**Session Moderator:** Will Kiser, E&I Resource Leader; Hargrove Engineers & Constructors; Mobile, AL

<table>
<thead>
<tr>
<th>AUDIO</th>
<th>POWERPOINT</th>
<th>PAPER</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Large Scale Sensor Networks - Mark Nixon - Emerson</td>
</tr>
</tbody>
</table>

#### Installation, Operations, and Maintenance Track

**Trends in Instrumentation and Control in the Pulp & Paper Industry Panel**

**Session Moderator:** Richard E. Britton – (Retired) International Paper; Mobile, AL

<table>
<thead>
<tr>
<th>AUDIO</th>
<th>POWERPOINT</th>
<th>PAPER</th>
<th>Panelists</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>David W. Peters – Sigma Associates; Fairhope, AL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bob Barber – (Retired) International Paper: Cantonment, FL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ben Blanchette – Honeywell Process Solutions; Atlanta, GA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Davis McAlpine – Hargrove Engineers &amp; Constructor; Mobile, AL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Larry E. Wells – CCSA LLC; Atlanta, GA</td>
</tr>
</tbody>
</table>

#### Wireless Track

**Utilize All Of The Data From Wireless And Smart Instrumentation**

**Session Moderator:** Michael Jarreau; The JAC Group; Mobile, AL

<table>
<thead>
<tr>
<th>AUDIO</th>
<th>POWERPOINT</th>
<th>PAPER</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Being Smart with Smart Instruments - Ian Verhappen</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Low power long range wireless opens up exciting new possibilities in remote automation - Richard May</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Secure and Easy Access to Data from a Remote Device - Gary Marrs</td>
</tr>
</tbody>
</table>

**Industrial Wireless Applications**

**Session Moderator:** Brad S. Carlberg, P.E.; Invensys; Lake Forest, CA

<table>
<thead>
<tr>
<th>AUDIO</th>
<th>POWERPOINT</th>
<th>PAPER</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Applying Wireless to Ethernet Pipeline Automation Systems - Jim Ralston</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Wireless Technology in Industry - Obaidullah Syed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&quot;Lick and Stick&quot; Wireless Industrial Sensors - Jay Werb &amp; Robert Gooch</td>
</tr>
</tbody>
</table>
### Wireless Track

**Wednesday Session 3**
**(3:30 pm - 5:00 pm)**

**New Technologies for Wireless Applications**

**Session Moderator:** James (Lyn) Givens; Fluid Flow; Mobile, AL

<table>
<thead>
<tr>
<th>Title</th>
<th>Panelist(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Budgets of Thermal Harvesting for Powering Wireless Sensors</td>
<td>Burkhard Habbe</td>
</tr>
<tr>
<td>The Reliability of Wireless Mesh Networks in Industrial Environments</td>
<td>Brian Cunningham</td>
</tr>
<tr>
<td>Ethernet I/O</td>
<td>Jim McConahay</td>
</tr>
</tbody>
</table>

---

**Wireless Track**

**Thursday Session 1**
**(10:00 am-11:30 am)**

**Wireless Applications in Robotics, NC Machines, and predictive Maintenance**

**Session Moderator:** Vincent LoPresti; Director - Process & Energy; PM Services, LLC; Mobile, AL

<table>
<thead>
<tr>
<th>Title</th>
<th>Panelist(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application of the next-generation emergency stop system utilizing functional safety wireless technology to outdoor life-supporting robots</td>
<td>Kazuya Okada</td>
</tr>
<tr>
<td>Wireless enables predictive maintenance for rotating assets</td>
<td>Jim Haza</td>
</tr>
<tr>
<td>Why Lord Kelvin Would Love MTConnect</td>
<td>Dave Edstrom</td>
</tr>
</tbody>
</table>

---

**Wireless Track**

**Thursday Session 2**
**(1:30 pm-3:00 pm)**

**“Ask The Wireless Experts” Panel**

**Session Moderator:** Brad S. Carlberg, P.E.; Invensys; Lake Forest, CA

<table>
<thead>
<tr>
<th>Panelists:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Penny Chen Yokogawa; Palo Alto, CA</td>
</tr>
<tr>
<td>Brad Lazenby – N-Tron Inc; Mobile, AL</td>
</tr>
<tr>
<td>Wayne Manges – Oak Ridge National Laboratory</td>
</tr>
<tr>
<td>Jim McConahay – Moore Industries; North Hills, CA</td>
</tr>
<tr>
<td>David McKay – Wingtip LLC; Kennewick, WA</td>
</tr>
<tr>
<td>Eric Rotvold – Emerson Process Management; Twin Cities, MN</td>
</tr>
<tr>
<td>Steven Toteda – VP &amp; GM - Wireless at Cooper Industries Ltd.; San Francisco Bay Area , CA</td>
</tr>
<tr>
<td>Ian Verhappen – Director at Industrial Automation Networks Inc.; Edmonton, AB</td>
</tr>
</tbody>
</table>

---

**Wireless Track**

**Thursday Session 3**
**(3:30 pm-5:00 pm)**

**Learn How The Oil & Gas Companies In Saudi Arabia And Northern Alberta Are Using Wireless**

**Session Moderator:** Ric McNaughton; Maverick Technologies; Mobile, AL

<table>
<thead>
<tr>
<th>Title</th>
<th>Panelist(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aramco’s environmental monitoring data center</td>
<td>Paul Richards</td>
</tr>
<tr>
<td>Server Virtualization Services for Oil &amp; Gas Applications: a User Prospective</td>
<td>Hassan Al Yousef</td>
</tr>
<tr>
<td>Wireless Application in Oil Sands Projects</td>
<td>James Wang</td>
</tr>
</tbody>
</table>
Welcome to the 2 New ISA Pulp & Paper Industry Division Members since May 2012

Maxwell T. Gray  Stephen C. Kaishian

Welcome to the 2 ISA Pulp & Paper Industry Division Members who have renewed their membership since May 2012

Maxwell T. Gray  Stephen C. Kaishian

Here’s a reminder to the 33 ISA Pulp & Paper Industry Division Members who need to renew their membership

Ricardo Alegria Cifuentes  Lakshmi Govindarajan  Prabu Govinda Perumal
Ms. Lakshmi Aravindhran  Patrick W. Hall  Brian P. Plamondon
John L. Arnold  Gustavo E. Hernandez Cardenas  Arunkumar Ponnuswamy
Paul Burnett  Ezhil Raja Lakshmanan  Thomas M. Porter, CCST
Marcio Vieira De Camargo  Adriano Roberto Ferreira Lopes  Ms. Monica S
Paul G. Castanuila  Carlos A. Maguina  Mervin Saunders
Randal R. Claus, CCST  Mike Muglia  Peter Bruce Slade
Kevin Anton DeWitt  Josep Maria Net Camús  Alvin Smith
Bron Dodds  Ms. Mary Ann O’Connor  Slavko Stuhec
Ashwin Kumar G  Bruno Luis Pereira Oliveira  A Subramanian
David Gaillard  Juan Fernando Ordonez Fajardo  Adam Thomas

Don’t forget to renew!
Buckeye Technologies Inc. (NYSE:BKI) today announced that it has made the repairs on the #1 specialty pulp machine that was damaged on June 17, due to the significant failure of a steam drum on the #2 fluff pulp machine. Structural damage to the paper machine building has been addressed and the specialist machine will begin start up today. Both paper machines have been idled since Sunday evening June 17, when the incident occurred.

There were no injuries to any personnel and there wasn’t a fire. A team at the plant, including contractor resources and structural engineers, continue the investigation to determine the root cause of the drum failure. All drums are being inspected prior to the startup based on the early findings of the comprehensive failure analysis.

With the paper machine building secure, workers have begun the plans and repairs for the #2 paper machine where Buckeye produces all of their fluff pulp. Because the drum failure was on this machine, most of the damage was limited to one area of the paper machine. While it is too early in the repairs and planning to provide a firm timeline, we will provide an estimate early next week. The timeline depends on procurement of materials and the amount of work to repair and replace drums, pedestals and sole plates.

Insurance company representatives have been on site helping assess the damage. We expect our property damage and business interruption insurance will cover most of the property damage and business interruption losses in excess of our $2 million deductible. Our 4th quarter earnings will be impacted by more than this amount as we will not be able to recognize the business interruption insurance benefit until the insurance claim is settled, which will result in a benefit to income in fiscal year 2013.

Buckeye Chief Executive Officer John Crowe stated, “A successful restart of the specialty machine has been a high priority after personnel safety. We are using preliminary findings from the comprehensive failure analysis and plan to inspect all drums prior to returning them to service. That has been completed for the specialty machine that we are returning to operations today. Getting back to normal operations on the specialty machine is important to our specialty customers. We will work around the clock to return the #2 paper machine to operations and are making arrangements with all customers to minimize the impact of the outage on their business.”

Mr. Crowe went on to say, “I am extremely proud and impressed with the teamwork I have observed from Buckeye’s employees, our onsite contractor, vendors, and customers. We also, are using the downtime opportunity to complete scheduled maintenance items that will come off our downtime planning list and this will help us avoid downtime in the future.”

Buckeye, a leading manufacturer and marketer of specialty fibers and nonwoven materials, is headquartered in Memphis, Tennessee, USA. The Company currently operates facilities in the United States, Germany and Canada. Its products are sold worldwide to makers of consumer and industrial goods.
Verso Paper Corp. Announces Grant Program To Increase Certified Forest Acreage Near Its Paper Mills

June 28, 2012

**MEMPHIS, TENN.-(BUSINESS WIRE)--**

Verso Paper Corp. (NYSE:VRS) today launched the Verso Forest Certification Grant Program, an initiative aimed at increasing certified fiber and certified acreage on lands near the company’s four paper mills. The program will provide start-up funding to encourage and assist landowners, consulting foresters and other stakeholders in developing innovative new projects that will help expand and maintain certification in Verso’s wood procurement zones.

“Verso’s Forest Certification Grant Program helps us meet two important sustainability commitments,” says Verso Senior Vice President for Manufacturing and Energy Lyle Fellows. “By encouraging expanded forest certification, we’re advancing responsible management practices that keep U.S. forests vibrant and healthy. We’re also helping to increase the available supply of certified fiber which, in turn, allows us to keep our pledge to provide paper products that help our customers meet their own sustainability objectives,” he says.

“Verso already uses a high percentage of fiber that’s certified to credible forest management certification standards – about 70 percent, but the availability of certified fiber in the United States remains limited with only about 28 percent of privately owned U.S. land certified,” explains Verso Senior Vice President for Sales, Marketing and Product Development Mike Weinhold. “With customer demand for certified paper products increasing significantly, it’s vital that we do all we can to make sure the supply of certified fiber keeps pace.”

The Forest Certification Grant Program builds on Verso’s track record of successful forest certification expansion initiatives. In 2011, the company completed a two-year group certification project in partnership with several of its customers and other stakeholders that resulted in an additional 1.4 million certified acres in Maine. In 2009 and 2010, a Verso grant to the Trust to Conserve Northeast Forestlands resulted in 160,000 additional certified acres across six Northeast states. Verso regularly encourages certification through collaboration with state forestry associations and certification organizations, and through its relationships with private landowners.

Anyone interested in learning more about the Verso Forest Certification Grant Program or in obtaining a grant application may contact:

Greg Barrows (greg.barrows@versopaper.com)
Verso Paper Corp. Bucksport Mill
P.O. Box 1200
2 River Road
Bucksport, ME 04417

About Verso

Based in Memphis, Tennessee, Verso Paper Corp. is a leading North American producer of coated papers, including coated groundwood and coated freesheet, and specialty products. Verso’s paper products are used primarily in media and marketing applications, including magazines, catalogs and commercial printing applications such as high-end advertising brochures, annual reports and direct-mail advertising. Additional information about Verso is available on the company’s website at www.versopaper.com.
WHO’S DOIN’ ANYTHING?: (CONTINUED)

Nippon Paper Group And SCG Paper Start Joint Venture

June 18, 2012

A new joint venture company named Siam Nippon Industrial Paper Company has been formed. The JV is to produce 42,000 tpy of machine glazed paper which will enter the market in 2014, according to plans published by the two partners, Nippon Paper Group and SCG Paper.

Paper manufacturer SCG Paper Public Company (SCG) and two subsidiaries of Japanese Nippon Paper Group have formed a joint venture in June. The new company named Siam Nippon Industrial Paper Company Limited is to produce machine glazed paper for several sectors including the packaging sector at its site in Thailand.

The two companies reported that THB2.2bn (€55.6m) are to be invested in the plant which is located in the Ban Pong district of Ratchaburi province and will produce machine glazed paper with a capacity of 43,000 tpy. Production is expected to be commenced in mid-2014, they added.

Through its subsidiaries Nippon Paper Industries Company and Nippon Paper Trading Company, Nippon Paper owns 5 and 50 %, respectively, of the shares in the joint venture company while SCG, a subsidiary of Thai Siam Cement Group, has a 45 % stake. The two partners formed an alliance in 2008, intending to concentrate their forces in South-East Asia.

SOURCE: Nippon Paper

Soundview Paper Company LLC Launched With Purchase Of Marcal Paper Mills, LLC

April 25, 2012

Elmwood Park, N.J. /PRNewswire/ - Soundview Paper Company LLC has acquired Elmwood Park, New Jersey based Marcal Paper Mills, LLC, a tissue and paper products manufacturer and distributor.

With the acquisition of Marcal, Soundview Paper Company is positioned to be a leading world class manufacturer and distributor of finished paper products including tissue, towel and napkin products to retailers, distributors and other customers. "We plan to focus on superior customer service and product excellence by building on the quality of our people, our equipment, our papermaking skills and our core brand, Marcal®," said George Wurtz, CEO of Soundview Paper Company. "Soundview's leadership team is comprised of industry veterans with unparalleled experience in the tissue business. With the strong focus and high standards of this team, Soundview is well-positioned to transform this business, better serving our customers.” Wurtz has a long successful history in the paper industry including as a former Executive Vice President of Georgia Pacific.

"We are excited about the acquisition of Marcal by Soundview,” said Tim Fazio, Managing Partner at Atlas Holdings. "Soundview fits well with our core investment strategy of investing in and revitalizing businesses that are critical to the markets they serve. The Soundview employees have unmatched tissue industry experience and are a welcome addition to the Atlas family."

"While there are certainly challenges inherent to running a successful manufacturing business in New Jersey, we believe New Jersey's pro-growth policies create an environment in which we can save and eventually grow this important business.”
Atlas Holdings owns and operates more than 70 facilities with nearly 8,500 employees worldwide. Its businesses are engaged in a broad spectrum of industries, including pulp, paper, and tissue manufacturing, food and agriculture, wood products and building materials, packaging, capital equipment, and industrial and business services. Atlas Holdings specializes in the purchase and revitalization of middle-market companies in distress or facing complex issues, including bankruptcy reorganizations, restructurings and challenging corporate divestitures. Atlas works closely with its operating partners and management teams to build strong standalone companies that can sustain long-term success. Visit www.atlasholdingsllc.com to learn more about Atlas Holdings.

For more information about Soundview Paper Company LLC, please visit the company's new website at www.soundviewpaper.com.

SOURCE Soundview Paper Company
BLEACH LOAD: A NEW INLINE SENSOR BASED IMPROVEMENT FOR BLEACH PLANT ADVANCE CONTROL

RICK VAN FLEET, HONEYWELL INTERNATIONAL, AND SANDY BEDER-MILLER - BTG AMERICAS

PRESENTED AT THE PACWEST CONFERENCE 2012
"SUSTAINABILITY THROUGH PEOPLE & TECHNOLOGY"
FRIDAY, JUNE 1
AT THE FAIRMONT JASPER PARK LODGE, ALBERTA, CANADA
Bleach Load: A New Inline Sensor Based Improvement For Bleach Plant Advanced Control

Rick Van Fleet, Honeywell International
Sandy Beder-Miller, BTG Americas

PACWEST Conference Jasper, AB
June 1, 2012
Overview

- Background
- Sensor Overview
- Calibration and Validation
- Controller Design
- Results
- Questions
An Age Old Challenge

“The need for dependable and accurate meters and instruments for application to the many phases of pulp and paper making is well recognized by everyone connected with the industry”

TAPPI - Technical Association Papers - Twelfth Series, May 1929
Bleaching Has Changed!

- Bleaching control concepts are rooted in chlorine/chlorine dioxide configurations of the pre-1990’s
  - Kappa numbers into the bleach plant were higher, pre EMCC, O2 Delig
  - up to 30 Kappa, now around 18 or lower
  - DE Kappa were 5 to 6, now are well below 2

- Not much lignin left to measure!

PACWEST Conference Jasper, AB  June 1, 2012
Typical 2012 Bleach Plant Configuration

- Kappa Analyzer & Washed Brightness
  - Measuring from the digester, pre and post O2 Delig, Bleach Plant through the Eop stage
  - Washed sample, no carryover measured
  - Need faster update time for Kappa Factor control, can adjust polling
  - Regular maintenance crucial for high uptime.

PACWEST Conference Jasper, AB  June 1, 2012
Kappa Factor Limitations

- Response to chemical addition is non-linear
  - different if the kappa is high or low
  - species dependant
  - Operator “bias” often a requirement
  - Based on “bound lignin” only
  - Black liquor solids from washer carryover-“dissolved lignin”- also consumes delignification chemicals in 1st stage.
D0 Kappa Factor Control

Compensated Brightness, Mode 1

Kappa Factor, Mode 2

ClO₂ % Substitution

Mode 0
% Applied, SP
Manual

0 – 100%
SP, x

Auto
Mode 1

Auto
Mode 2

Compensated Brightness,
Mode 1

Kappa Factor,
Mode 2

FFIC

FFIC

Tracked Tonnage
to subsequent
stages, TON

NaOH
Steam
Cl₂
ClO₂
H₂SO₄
H₂O₂
O₂

PACWEST Conference Jasper, AB June 1, 2012
Introduction to Bleach Load

The Optical Bleach Plant:

- Joint development project between Honeywell and BTG
- Based on UV measurement
- Provide separate inputs for lignin and black liquor solids.
- “Bound lignin”- optical
- “Dissolved Lignin”- optical
- Sum is known as “Bleach Load”
Bleach Load

- Uses an optical in line sensor that measures both dry fiber lignin and wet lignin (lignin in the washer mat squeezing)
- Measurement must be taken before chemical addition (Feed to Bleach)

- Bleach Load = Fiber Kappa + Filtrate Kappa
Lignin Absorbance Spectra

PACWEST Conference Jasper, AB  June 1, 2012
BLT Measuring Principle

LED Measuring: UV-IR-red-green-blue

Detector Measuring

Same UV Source that is used in Kappa Analyzers
No Halogen Source. Proven LED Technology.

PACWEST Conference Jasper, AB June 1, 2012
Bleach Load Transmitter BLT-5500
Installs in Feed to Bleach Line, 70 degree angle into pulp flow.

PACWEST Conference Jasper, AB  June 1, 2012
Validation Range Chart for Fiber K Number

Validation Range Chart for Fibre K Number

Range

Lab Range Fibre K #  UCL  RBAR  LCL

PACWEST Conference Jasper, AB  June 1, 2012
Bleach Load Versus Percent Lignin in Filtrate

PACWEST Conference Jasper, AB  June 1, 2012
Bleach Load Calibration - Sulfite

Calibration results

Instrument type: BT-5400
Calibration type: Method 1
Calibration mode: Auto

<table>
<thead>
<tr>
<th>Coefficients</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>Value</td>
</tr>
<tr>
<td>r2</td>
<td>0.7016</td>
</tr>
<tr>
<td>r2sd</td>
<td>0.6899</td>
</tr>
<tr>
<td>STDerr</td>
<td>1.87</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.001</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>User Adjust</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>1928.85084</td>
</tr>
<tr>
<td>Red</td>
<td>-2649.18946</td>
</tr>
<tr>
<td>Green</td>
<td>3010.50610</td>
</tr>
<tr>
<td>N</td>
<td>1315.70306</td>
</tr>
<tr>
<td>UV</td>
<td>9038.22348</td>
</tr>
</tbody>
</table>
Bleach Load Calibration - Kraft
What is Different From Compensated Brightness/Kappa???

- CB or CK is a weighted \textit{linear} function
- Requires Brightness Indication AFTER Chemical addition
- Residual used as a constraint variable if available
CEK vs. Brightness

\[ y = -0.5424x + 81.563 \]

\[ R^2 = 0.0027 \]

PACWEST Conference Jasper, AB June 1, 2012
Bleaching or Delignification?

KAPPA after COOKING

KAPPA REDUCTION 60 %
KAPPA FEED FORWARD AND FEEDBACK CORRECTION

KAPPA REDUCTION 50 %
KAPPA FEED FORWARD AND BRIGHTNESS FEEDBACK CORRECTION

BRIGHTNESS FEED FORWARD AND/OR FEEDBACK CORRECTION

Final Brightness

Bleached Pulp Kappa

O2-DELIGN.  1-STAGE  2-STAGE  3-STAGE  4-STAGE

PACWEST Conference Jasper, AB  June 1, 2012
Process Dynamics – Bleaching

Stock Flow

Chlorine Dioxide Flow

Incoming Kappa

Residual

Brightness

Reaction Rates
MPC Structure Overview

- MPC Technology
- Controlled Variables (CV’s)
- Disturbance Variables (DV’s)
- Manipulated Variables (MV’s)
- Optimization Parameters (Prices, Costs, Directions, Targets)
- Control Targets (Setpoints/Ranges)

PACWEST Conference Jasper, AB June 1, 2012
# MPC CONTROL MIMO - D0/E1

<table>
<thead>
<tr>
<th>MV / DV</th>
<th>CV</th>
<th>MV01 D0 ClO2</th>
<th>MV02 E1 NaOH</th>
<th>MV03 E1Oxygen</th>
<th>MV04 E1 Peroxide</th>
<th>DV01 Incoming Kappa</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV01 D0 Residual</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CV02 E1 pH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CV03 Eop Bright</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PACWEST Conference Jasper, AB  June 1, 2012
Step Response Trials

PACWEST Conference Jasper, AB  June 1, 2012
Final Models
## Results

<table>
<thead>
<tr>
<th></th>
<th>Before</th>
<th>After</th>
<th>Delta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bleach Load</td>
<td>17.87</td>
<td>18.60</td>
<td></td>
</tr>
<tr>
<td>D0 Chlorine Dioxide lb/adt</td>
<td>44.21</td>
<td>40.64</td>
<td>3.57</td>
</tr>
<tr>
<td>Eop Caustic lb/adt</td>
<td>31.51</td>
<td>28.71</td>
<td>2.80</td>
</tr>
<tr>
<td>Eop Peroxide lb/adt</td>
<td>10.39</td>
<td>12.53</td>
<td>+2.14</td>
</tr>
<tr>
<td>D1 Chlorine Dioxide lb/adt</td>
<td>10.50</td>
<td>9.80</td>
<td>0.70</td>
</tr>
</tbody>
</table>

**Net Savings $1.97/adt**

PACWEST Conference Jasper, AB  June 1, 2012
CONCLUSIONS

- Inline sensors can provide a lower cost alternative to analyzers.
- The Bleach Load Sensor is an effective measure of chemical demand.
- MPC combined with accurate sensors can be used to lower bleaching costs.
Questions?
2012 ISA PUPID SCHOLARSHIP WINNER
MEET DANIELLE VALDIVIA

The ISA Pulp & Paper Industry Division is pleased to award a $2000 scholarship to a college student pursuing a career in pulp & paper. This year, the winner is another “top-notch” student with an impressive scholastic record as well as extracurricular activities and having demonstrated a significant interest in the pulp and paper industry. The winner is Danielle C. Valdivia. Danielle sent in her completed application form from the PUPID website, an official transcript from her university, three letters of recommendation from persons familiar with her character, and answered three questions describing her interest in the pulp and paper industry, her educational accomplishments, her school activities and her leadership roles. You can read a little bit about her in the rest of this article.

Danielle C. Valdivia, a junior with a dual degree in Chemical Engineering and Paper Engineering at Western Michigan University in Kalamazoo, Michigan, hails from Forest Hill, Maryland. Danielle is the daughter of Richard M. Valdivia and Dawn M. Valdivia, who both work for the federal government as Environmental Specialists.

Danielle will graduate in May 2013 and currently has a GPA of 2.78 while working for the Chemical and Paper Engineering coating pilot plant. This summer Danielle has an internship with a coating company in their research and development branch. Danielle says that Coatings have always been my favorite part of the paper industry and it is where she hopes to work after finishes her Masters Degree.

While studying at Western, she has become a member of Ts'ai Lun, the organization of Paper Engineers, and a member of SWE, the Society of Women Engineers.

For fun (when the weather decides to stop snowing), Danielle enjoys playing beach volleyball or Frisbee with her friends. She is an avid lover of badminton and racket ball and has recently found a liking for tennis.
LETTERS TO THE EDITOR

Send your comments on this newsletter to the ISA PUPID Technical Discussion Forum & “get something started”!

You can reach the site at http://www.isa.org/scripts/lyris.pl?enter=pupid&text_mode=&lang=english
or by going to the PUPID or the main ISA websites and looking for the “ISA Technical Divisions”


**Links to Related Websites**

**ISA Pulp & Paper Website**  
http://www.isa.org/~papier/

**ISA Pulp & Paper Technical Discussion Forum**  
http://www.isa.org/scripts/lyris.pl?enter=pupid&text_mode=0&lang=english

**ISA Technical Conference Session Schedule**  
http://www.isa.org/Template.cfm?Section=Conferences_and_Exhibitions&template=taggedpage/conferencesbydate.cfm&icid=61

**Pulp & Paper Research Institute of Canada**  
http://www.paprican.ca/

**TAPPI**  
http://www.tappi.org/

**PIMA**  
http://www.pima-web.com/

**American Forest and Paper Association**  
http://www.sfpa.org/

**National Society of Professional Engineers**  
http://www.nspe.org/

**Swedish Royal Institute of Technology**  
http://www.pmi.kth.se  
http://www.hut.fi/English/

**Helsinki University of Technology**  
http://www.hut.fi/English/

**Technical Association of the Australian and New Zealand Pulp & Paper Industry (APPITA)**  

**Australian Pulp & Paper Institute**  

**ISO Standards Technical Committee List**  
http://www.iso.ch/iso/en/stdsdevelopment/tc/list/TechnicalCommitteeList/  
http://www.isa.org/shellcgi/lyris.pl?site=isa&page=topic&topic=standards+committees&text_mode=0&lang=english

**Quickies**

**ISA Pulp & Paper Technical Discussion Forum**

Anybody (not necessarily an ISA or PUPID member) can subscribe to the PUPID Pulp & Paper Technical Discussion Forum. To subscribe, go to the PUPID homepage at http://www.isa.org/~pupid/1, select “Pulp & Paper Technical Discussion Forum” in the pick box, click “Go”, and enter your email address and a password.

**ISA Email Address for ALL Members**

Any ISA member can register for a free email address and online mailbox. If you set it up, your ISA email address will be yourname@member.ISA.org. To register, go to http://www.isa.org/membership/benefits/, and follow the registration instructions.

**ISA PUPID Calendar**

Get a quick overview of ISA PUPID events for 2002 by going to the Calendar at:

http://www.isa.org/~pupid/2002_PUPID_Calendar.htm
## World Corners

### Canada Corner

Nothing from anyone there this time!

### Central & South American Corner

Nothing from anyone there this time!

### Far East Corner

Nothing from anyone there this time!

### From the Land of the Midnight Sun

Nothing from anyone there this time!

### European Corner

Nothing from anyone there this time!
2011 Pulp & Paper Industry Division Officers

**Director**
Brad S. Carlberg, P.E.
Invensys Operations Mgmt
(251) 454-1200
brad.carlberg@bsc-engineering.com

**Past-Director**
Paul Burnett
(203) 482-3553
paulburnett@att.net

**Director - Elect**
vacant

**Education Chairman**
Patrick J. Dixon
Dixon Process
Automation Services, Inc.
PatJDixon@DPAS-INC.com

**Advisor**
Richard E. Britton, P.E.
Retired – International Paper
richardbritton1@comcast.net
(251) 342-0998

**Advisor**
Larry E. Wells, P.E.
CCSA, LLC
ccsallc@bellsouth.net

**Paper Review Coordinator**
vacant

**Environmental Chairman**
vacant

**Secretary / Treasurer:**
Vacant

**Programs / H&A:**
vacant

**Standards & Practices**
vacant

**Associate Newsletter Editor**
Frank Wilson
Pacific Lumber Company
fwilson@palco.com
(707) 764-4210

ISA Pulp & Paper Industry Division
P.O. Box 12277
Research Triangle Park, NC 27709

ADDRESS CORRECTION REQUESTED