

TAPPI Kraft Recovery Course

January 11-14, 2010
St. Petersburg, Florida, USA



TAPPI
people resources solutions®

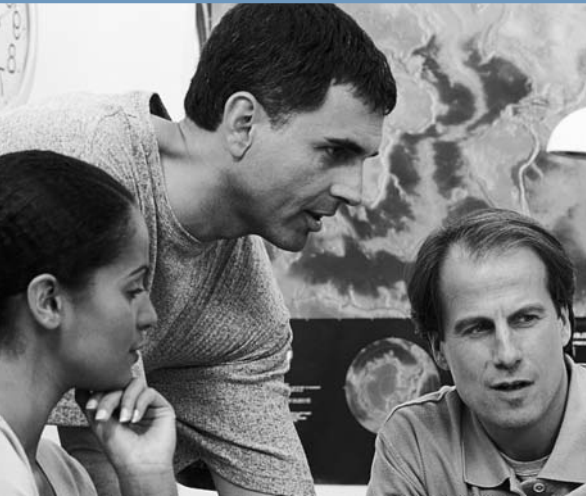


**Register by
December 15th and Save!
Visit www.tappi.org**

Special Benefits

- Increase your problem-solving skills through team activities and practical exercises
- Learn about new energy saving methods at the Energy Reduction Panel Discussion
- Learn from recognized kraft recovery experts from around the world
- Discover new ways to minimize costs, solve environmental problems and increase production

TAPPI Kraft Recovery Course



Who Should Attend?

This course is designed for pulp mill operations personnel, including:

- Engineers and superintendents new to the area
- Senior operators
- Superintendents looking for a refresher course or new ideas
- Process engineers

Technical sales and support staff from chemical, equipment, and consulting companies will also benefit.

Course Overview

The Kraft Recovery Course examines key recovery operations in a kraft pulp mill to help participants increase their ability to improve pulp production efficiency while minimizing operating costs and environmental problems. The course will cover chemistry, physics, and engineering principles relating to kraft recovery.

Course participants are encouraged to bring questions and specific problems to the experts! The expert faculty will provide practical day-to-day information through traditional workshops and team-based problem solving exercises. Teams will work on real-world problems and present their results to the class. The Kraft Recovery Course also features a panel discussion focusing on new ideas for energy reduction.

Learning Outcomes

After successfully completing the course, participants should be able to:

- Describe the kraft recovery process
- Describe the black liquor evaporator operation and list ways to improve it
- Identify causes and solutions for recausticizing problems
- Describe lime reburning principles and devise a means to improve kiln performance
- Identify causes and solutions for recovery boiler problems.
- List the main causes of corrosion in recovery boilers and ways to minimize them
- List ways to reduce energy consumption and to optimize energy utilization

Course Faculty And Sponsor



Course Chairman Honghi Tran serves as Professor and Director of the P&P Centre at the University of Toronto. Tran has authored or co-authored over 200 publications, including chapters 9 and 10 in the TAPPI PRESS book *Kraft Recovery Boilers*, and has obtained eight U.S. patents. Through his company, Tran Industrial Research, Inc, Tran has served as a technical consultant to many companies and mills on problems related to recovery boilers, lime kilns and borate auto-causticizing technology. He was named a TAPPI Fellow in 2000.

The faculty includes experts who are recognized leaders in their field and veteran instructors: Bob Bartholomew, Jim Brewster, David Clay, Doug Foran, James Frederick, Tom Gencarelli, Thomas Grace, Glenn Hanson, Mikko Hupa, Paul Johnson, Jean-Claude Patel, Dale Sanchez, Sandy Sharp, and Richard Wessel.

The course is sponsored by the Steam and Power/Energy Management Committee of TAPPI's Engineering Division and the Alkaline Pulping and Bleaching Committee of TAPPI's Pulp Manufacture Division.

Preliminary Course Schedule

January 11-14, 2010

Hilton St. Petersburg Bayfront

St. Petersburg, Florida

MONDAY, JANUARY 11

Session 1 Introduction to the Course

8:00 a.m. *Honghi Tran*
University of Toronto, ON, Canada

8:30 a.m. Kraft Recovery Process
Honghi Tran

Session 2 Reausticizing and Lime Kilns

9:00 a.m. Reausticizing Principles and Practice
Dale R. Sanchez
Vector Process Equipment, Inc.
Burlington, ON, Canada

9:50 a.m. Morning Break

10:10 a.m. Reausticizing Principles and Practice
(Continued)

11:00 a.m. Lime Kiln Principles & Operations
Glenn Hanson
Metso Minerals, Atlanta, GA

11:40 a.m. Team Conference

12:00 p.m. Lunch on Your Own

1:20 p.m. Lime Kiln Principles & Operations
(Continued)
Glenn Hanson

1:50 p.m. Lime Kiln Chemistry
Honghi Tran

2:40 p.m. Afternoon Break

3:00 p.m. Refractory Installation and Maintenance
Tom Gencarelli
Harbison-Walker Refractories,
Pittsburgh, PA

3:30 p.m. Kiln/Reausticizing Operations
Workshop

4:30-5:30 p.m.
Homework/Networking Hour

TUESDAY, JANUARY 12

8:00 a.m. Introduction & Team Presentation
Honghi Tran

Session 3 Black Liquor Evaporation

8:30 a.m. Liquor Properties/Evaporation
Principles
David T. Clay
Jacobs Engineering, Portland, OR

9:10 a.m. Evaporator Design and Operations
Jean-Claude Patel
AH Lundberg Associates, Inc.
Naperville, IL

9:50 a.m. Morning Break

10:10 a.m. Evaporator Fouling Basics
and Management
David T. Clay

10:50 a.m. Evaporator Optimization
Jean-Claude Patel

11:30 a.m. Team Conference

11:50 a.m. Lunch on Your Own

1:10 p.m. Foul Condensate Stripping
Paul Johnson
AH Lundberg Systems, Bellevue, WA

1:50 p.m. NCG Handling
Paul Johnson

2:30 p.m. Afternoon Break

2:50 p.m. Tall Oil Soap Recovery
C. Doug Foran
Arizona Chemical Co., Savannah, GA

3:30 p.m. Evaporator Operations Workshop

4:30-5:30 p.m.
Homework/Networking Hour

WEDNESDAY, JANUARY 13

8:00 a.m. Introduction & Team Presentation
Honghi Tran

Session 4 Recovery Boilers

8:30 a.m. Recovery Boiler Equipment
and Operation
Thomas M. Grace
T. M. Grace Company, Appleton, WI

9:10 a.m. Black Liquor Droplet Burning
Mikko M. Hupa
Abo Akademi University, Turku, Finland

9:50 a.m. Morning Break

10:10 a.m. Black Liquor Sprays
Richard A. Wessel
Babcock & Wilcox, Barberton, OH

10:50 a.m. Recovery Boiler Chemical Principles
Mikko Hupa

11:30 a.m. Team Conference

11:50 a.m. Lunch on Your Own

1:10 p.m. Recovery Boiler Air Distribution
Richard A. Wessel

1:50 p.m. Recovery Boiler Safety and Audits
Thomas M. Grace

2:30 p.m. Afternoon Break

2:50 p.m. Fireside Deposits and
Plugging Prevention
Honghi Tran

3:40 p.m. Recovery Boiler Workshop

4:30-5:30 p.m.
Homework/Networking Hour

Cost Savings, Process Improvements

Several attendees of previous courses reported that they have improved efficiency and saved their mills money by implementing what they learned at the TAPPI Kraft Recovery Course.

Call TAPPI at +



THURSDAY, JANUARY 14

8:00 a.m. Introduction & Team Presentation
Honghi Tran

Session 5 Recovery Maintenance & Management

8:30 a.m. Gas Emissions and Emission Control
Mikko Hupa

9:10 a.m. Recovery Boiler Water Treatment
Bob Bartholomew
Sheppard T. Powell Associates,
Baltimore, MD

9:50 a.m. Morning Break

10:10 a.m. Recovery and Utility Management
Jim Brewster, Irving Pulp & Paper,
Saint John, NB, Canada

10:50 a.m. Corrosion & Cracking in
Recovery Equipment - I
W. B. A. Sharp
SharpConsultant, Columbia, MD

11:30 a.m. Team Conference

11:40 a.m. Lunch on Your Own

1:00 p.m. Corrosion & Cracking in
Recovery Equipment - II
W. B. A. Sharp

Session 6 Emerging Issues

1:50 p.m. Biorefineries and Potential Impacts
W. James Frederick
NREL, Golden, CO

2:30 p.m. Afternoon Break

2:50 p.m. Energy Optimization
Jim Brewster

3:30 p.m. Energy and Cost Reduction Workshop

4:15 p.m. Concluding Remarks
Honghi Tran

CEUs

The Education Project Center of TAPPI has been reviewed and approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 1620 I Street, NW, Suite 615, Washington, DC 20006. TAPPI will award 2.8 CEUs to participants who attend at least 80% of the educational sessions and complete a final program evaluation.

Kraft Recovery continues to be one of TAPPI's highest rated courses. The last time this course was held, 96% of the participants rated the overall quality as excellent or good.

Past Participants Have Said...

"Now I will be better able to communicate with our customers and offer suggestions for improving recovery operations."

"I really liked the team conferences and being able to talk to the instructors to ask individual questions."

Hotel Information

Hilton St. Petersburg Bayfront

333 First Street South

St Petersburg, FL 33701 USA

Phone: 1.800.445.8667 or +1.727.894.5000

Fax: +1.727.823.4797 •

www.stpetersburg.hilton.com

The Kraft Recovery Short Course will be held at the Hilton St. Petersburg Bayfront. Be sure to reserve your room by December 15, 2009 to take advantage of TAPPI's special room rate of \$139 plus tax per night.

AVIS

Avis offers special discounts off regular rates for course participants. To reserve your car, call 1.800.831.8000 and refer to the code AWD: #U226600.

5 Easy Ways to Register

- 1 Mail
TAPPI, P.O. Box 933644
Atlanta, GA
31193-3644, USA
- 2 Online
Go to www.tappi.org
- 3 Fax completed registration form to
+1.770.209.7206
- 4 Phone
1.800.332.8686 (US)
1.800.446.9431
(Canada) or
+1.770.446.1400
(Worldwide)
- 5 Wire Transfer
Call +1.770.446.1400
for details

GENERAL INFO & GUARANTEE

Expenses for continuing education taken to maintain or improve professional skills may be tax deductible. Certain restrictions apply. Check with your accountant for details.

At TAPPI, we stand behind the quality of our courses. If you are not completely satisfied that the course delivered what was promised, we will refund your registration fee.

CANCELLATION POLICY

If you find that you have to cancel, your full registration fee will be refunded if TAPPI's Registration Department receives written notification (fax acceptable at +1.770.446.6947 by December 15, 2009). Please note: There will be a 50% refund for all written cancellations made after December 15, 2009 but no later than 5 business days prior to the start of the conference (January 4, 2010). Understandably, after this time, no refunds can be issued. Substitutions, however, will be accepted any time without a penalty.

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Registration

10KROS

Please photocopy this form as necessary for multiple registrants.

GENERAL INFORMATION

Please circle: Mr. Ms. Mrs. Dr. Sr. Jr. TAPPI Membership Number _____

Last Name _____

First Name _____ Middle Initial _____

Badge Name _____

Job Title _____

Company Name _____

Address _____

City _____ State/Province _____

Zip/Postal Code _____ Country _____

Work phone _____ Work Fax _____

Email _____

REGISTRATION FEE (Select only one)

	On/Before 12/15/09	After 12/15/09	SUBTOTAL
TAPPI Member	US\$1395	US\$2330	
Nonmember	US\$2095	US\$3495	
Multiple Registrant (3 or more TAPPI Members)	US\$995	US\$1980	
Multiple Registrant (3 or more, non-member)	US\$1570	US\$2970	
TAPPI Membership Fee			
<input type="checkbox"/> Renew/Join TAPPI - Annual Membership \$174			
Non-US members please add US\$14 for postage fee			
TOTAL \$			

1. WHAT TYPE OF COMPANY DO YOU WORK FOR? (choose only one)

- Pulp and Paper/Paperboard Manufacturing (1)
- Paperboard Packaging Integrated Converting Plant (4AD)
- Paperboard Packaging Independent Converting Plant (4AO)
- Paperboard Packaging Headquarters (4AH)
- Independent Consultant: Engineering, Technical Production or Research (2)
- Manufacturer of Machinery, Equipment, Chemicals or Supplies (7)
- Woodlands Operation (3)
- Flexible Packaging Converting Plant (4BO)
- Flexible Packaging Headquarters (4BH)
- Dealer or Distributor of Supplies (8)
- University Professor (9A)
- Full Time Student (9B)
- University Library (9C)
- Press (10A)
- Library (10B)
- Association (10C)
- Government (10D)
- Retired (13)
- Nonwovens (14)
- Printing/Graphic Arts (15)
- Industry Customer (End User) (16)
- Allied to the Industry (12)

2. WHAT IS YOUR PRIMARY JOB FUNCTION? (check one)

- Librarian - Corporate (A)
- Corporate Management (B)
- Production (C)
- Technical/Research & Development (D)
- Engineering (E)
- Purchasing (F)
- Marketing & Sales (G)
- Traffic & Shipping (H)
- Other Management & Administrative Personnel (I)
- Other (J)

3. WHAT IS YOUR PRIMARY INDUSTRY? (check one)

- Pulp Mill Only (P)
- Technical/R&D Facility/Headquarters (H)
- Paper/Paperboard Mill Only (R)
- Independent Operations or Converting Plant (O)
- Integrated Pulp/Paper/Paperboard Mill (D)

4. HOW DID YOU HEAR ABOUT THE CONFERENCE?

- Tappi.org website
- Brochure
- Colleague/Co-worker
- Other: _____
- Email
- Newsletter

5. WHEN CHOOSING A CONFERENCE THE MOST IMPORTANT FACTOR TO ME IS:

- Registration Fee
- Program Content
- Networking/Peer Interactions
- Access to new technology
- Access to customers
- Travel Costs
- Meeting Location

METHOD OF PAYMENT

(All fees must be paid in U.S. Dollars and must accompany registration forms)

Enclosed is check number _____ for the full amount of \$ _____ . Please make checks payable to TAPPI in US Dollars and mail to: TAPPI, P.O. Box 933644, Atlanta, GA 31193-3644, USA

Wire Transfer: \$ _____ was wired as payment on _____ (date)

Please bill my credit card. (Complete credit card information below)

AMEX Diner's Club Visa MasterCard Discover

Credit Card # _____ Exp _____

Signature _____



Check here if you have special requirements, and we will contact you.

The contact information you provide may be used by TAPPI or its business associates to notify you of items that may be of interest to you. I understand that under certain laws and regulations, TAPPI must have written permission in order to communicate with me via fax or email. I hereby give TAPPI, TAPPI's business associates, the TAPPI Foundation, and TAPPI's Local Sections written permission to communicate with me via fax and/or email.

Signature _____ Date _____



15 Technology Parkway South • Norcross, GA 30092

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Special Benefits

- Increase your problem-solving skills through team activities and practical hands-on exercises
- Discuss energy savings with suppliers during the new Emerging Issues session
- Learn from recognized kraft recovery experts from around the world
- Discover new ways to minimize costs, solve environmental problems and increase production

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