

REVISED AND UPDATED WITH NEW INFORMATION!

# TAPPI Kraft Recovery Course

January 7-10, 2008

St. Petersburg, Florida, USA

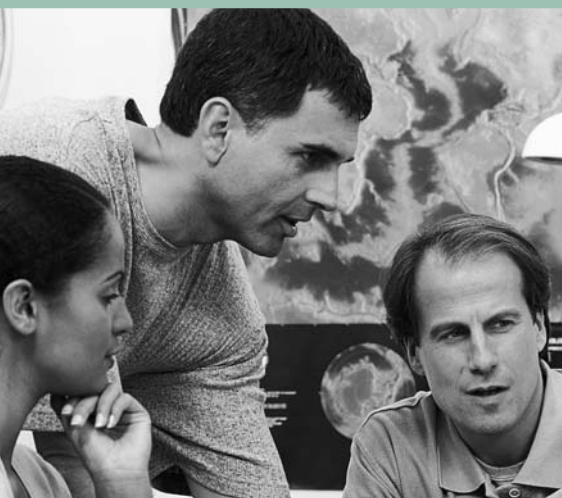


**Register by  
December 10th and Save!  
Visit [www.tappi.org](http://www.tappi.org)**

## Special Benefits

- Increase your problem-solving skills through team activities and practical problem solving 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 autocausticizing technology. He was named a TAPPI Fellow in 2000.

The faculty includes experts who are recognized leaders in their field and veteran instructors: Terry Adams, Bob Bartholomew, Jim Brewster, Douglas Foran, James Frederick, Thomas Grace, Mikko Hupa, Ben Lin, Jean-Claude Patel, Dale Sanchez, Sandy Sharp, David Clay 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 7-10, 2008

Hilton St. Petersburg Bayfront

St. Petersburg, Florida

## MONDAY, JANUARY 7

### 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 Kiln, Reausticizing

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. Reaust. Principles and Practice  
(Continued)

11:00 a.m. Lime Kiln Principles & Operations  
*Terry N. Adams*  
*T.N. Adams Consulting, Tacoma, WA*

11:40 a.m. Team Conference

12:00 p.m. Lunch on Your Own

1:20 p.m. Lime Kiln Principles & Operations  
(Continued)  
*Terry N. Adams*

2:00 p.m. Lime Kiln Chemistry  
*Honghi Tran*  
*University of Toronto, ON, Canada*

2:40 p.m. Afternoon Break

3:00 p.m. Lime Kiln Chemistry (Continued)

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

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

## TUESDAY, JANUARY 8

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  
*David T. Clay*  
*Jacobs Engineering, Portland, OR*

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

11:30 a.m. Team Conference

11:50 a.m. Lunch on Your Own

1:20 p.m. Foul Condensate Stripping  
*Ben Lin*  
*AH Lundberg Systems, Richmond BC*

2:00 p.m. NCG Handling  
*Ben Lin*

2:40 p.m. Afternoon Break

3:00 p.m. Tail Oil Soap Recovery  
*C. Douglas Foran*  
*Arizona Chemical Co., Savannah, GA*

3:40 p.m. Evaporator Operations Workshop

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

## WEDNESDAY, JANUARY 9

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*  
*Babcock & Wilcox, Barberton, OH*

1:50 p.m. Recovery Boiler Safety and Audits  
*Thomas M. Grace*  
*T. M. Grace Company, Appleton, WI*

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 last year's course reported in a recent telephone survey that they have improved efficiency and saved their mills money by implementing what they learned at the TAPPI Kraft Recovery Course.**

**Call TAPPI at**



## Registration

Save by registering early! Fees are \$1395 for TAPPI members and \$2095 for nonmembers who register by December 10, 2007. After that date, fees are \$2230 for TAPPI Members and \$3495 for nonmembers. Onsite Registration is \$2230 for members and \$3495 for nonmembers. Receive an additional discount by having three or more register together from the same company. Multiple registrant fees are \$995 each for TAPPI members and \$1570 for non-members registered by December 10, 2007, after that date, Multiple Registrant fees are \$1980 for members and \$2970 for non-members. For more information or to register by phone, call TAPPI's Registration Line at 1.800.332.8686 (US) 1.800.446.9431 (Canada) or +1.770.446.1400 (Worldwide). You can also fax your form to: +1.770.209.7206 or mail it to TAPPI, P.O. Box 933644, Atlanta, GA 31193-3644, USA.

## Hotel Information

### Hilton St. Petersburg Bayfront

333 First Street South

St Petersburg, FL 33701

Phone: 1.800.445.8667 or 727.894.5000

Fax: 727.823.4797 • [www.stpetehilton.com](http://www.stpetehilton.com)

The Kraft Recovery Short Course will be held at the Hilton St. Petersburg Bayfront. Be sure to reserve your room by December 14, 2007 to take advantage of TAPPI's special room rate of \$124 plus tax per night, single or double occupancy.



Delta is the official airline for all TAPPI events. For Special Rates, book your flight online at the course web page at [www.tappi.org](http://www.tappi.org). Simply scroll to the bottom of the webpage and click on the Delta Logo.

Both Hertz and Avis offer discounted car rental rates to course participants.



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.



Save \$5 a day up to \$25 off your rental car during the course. This special offer is valid one week before through one week after the January 7-10, 2008 course dates. Make your reservations on line at [www.hertz.com](http://www.hertz.com) using your CDP #1752380 and Promotional Code #105825. Or, call 1.800.654.2210 in the U.S.

## THURSDAY, JANUARY 10

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. Recovery Boiler Corrosion  
*W. B. A. Sharp*  
*SharpConsultant, Columbia, MD*

11:30 a.m. Lunch on Your Own

1:00 p.m. Recovery Boiler Corrosion Inspection  
*W. B. A. Sharp*

### Session 6 Emerging Issues

1:40 p.m. Biofuel and Fiber Co-Production  
from a Forest Biorefinery  
*W. James Frederick*  
*IPST at Georgia Tech, Atlanta, GA*

2:20 p.m. Afternoon Break

2:40 p.m. Energy Optimization  
*Jim Brewster*  
*Irving Pulp & Paper, Saint John, NB,*

3:20 p.m. Energy Reduction - Panel Discussion

4:00 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, 100% of the participants rated the overall quality as excellent or good and 100% said that the course content would be useful in their work.***



# TAPPI Kraft Recovery Course Registration

## 5 Easy Ways to Register

### 1 Mail

TAPPI, P.O. Box 933644  
Atlanta, GA  
31193-3644, USA

### 2 Online

Go to [www.tappi.org](http://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 17, 2007)). Please note: There will be a 50% refund for all written cancellations made after (December 17, 2007) but no later than 5 business days prior to the start of the conference (December 31, 2007). Understandably, after this time, no refunds can be issued. Substitutions, however, will be accepted any time without a penalty.

## 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 (Check only one)

	On/Before 12/10/07	After 12/10/07	SUBTOTAL
Individual Member of TAPPI	US\$1395	US\$2230	
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	
<input type="checkbox"/> Renew My Membership for 12 months (add \$174)			
<input type="checkbox"/> Join TAPPI now and get member rates (add \$174)			
✓ Must fax in all registration forms at the same time.			
<b>TOTAL \$</b>			

### 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)

- Librarians - 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

## PAYMENT (Must accompany registration.) Please convert checks to equivalent U.S. Currency.

Enclosed is my check for the full amount (Make check payable to TAPPI)

Please bill my credit card (complete the following information)

Amex  Diner's Club  Discover  MasterCard  VISA

Credit Card # \_\_\_\_\_ Exp. \_\_\_\_\_

Signature \_\_\_\_\_

Print name as it appears on card \_\_\_\_\_

  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 and date \_\_\_\_\_

Please photocopy this form as necessary for multiple registrants.

# TAPPI Kraft Recovery Course

January 7-10, 2008  
St. Petersburg, Florida, USA

## Special Benefits

- Increase your problem-solving skills through team activities and practical hands-on problem solving 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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