<table>
<thead>
<tr>
<th>SESSION</th>
<th>TITLE, AUTHOR</th>
</tr>
</thead>
</table>
| 1-1     | A Cost-Benefit Assessment of Black Liquor Gasifier/Combined Cycle Technology Integrated into a Kraft Pulp Mill  
Eric D. Larson, Thomas G. Kreutz, George W. McDonald, Wenrui Yang, Wm. James Frederick, Kristiina Iisa, Earl W. Malcolm and Craig A. Brown / 1 |
| 1-2     | The Fate of Nitrogen in the Chemical Recovery Process in a Kraft Pulp Mill  
M. Kymäläinen, M. Forssén, and M. Hupa / 19 |
| 1-3     | Falling Film Evaporator and Concentrator Fouling in an RDH Bleached Pulp Mill (One Mill’s Experience)  
Christopher Gore / 33 |
| 2-1     | Non-Cooled Smelt Spouts - Recent Field Experiences with Improved Alloy  
Christopher J. Beveridge and Dennis Hollenbach / 43 |
| 2-2     | Advanced Technology for Corrosion Resistant Materials for Recovery Boilers  
H. Matsumoto, A. Notomi, T. Nishio, H. Takatsuka and Y. Arakawa / 51 |
| 3-1     | Relations between Superheater Corrosion in Recovery and Power Boilers in a Modern Pulp Mill  
Keijo Salmenoja and Kari Mäkelä / 61 |
| 3-2     | Overview of the DOE Studies of Recovery Boiler Floor Tube Cracking  
| 4-1     | Closed Cycle Recovery of TCF-Bleach Filtrates in Integrated Kraft Paper Production - Trends in Sweden  
Stina Blombäck, Jan-Erik Eriksson, Kristina Idner, and Björn Warnqvist / 87 |
| 4-2     | A New Approach to Handling ECF Bleach Plant Effluent  
G. H. Covey, R. J. Wellwood and P. J. Johnson / 97 |
| 4-3     | A Practical Method to Studying NPEs in a Kraft Mill  
Risto Järvinen and Olli Valttilä / 107 |
| 4-4     | Towards Closed-Cycle Kraft Processing: Mill Balance for Tasman Pulp and Paper Company Ltd.  
Murray Ellis, Peter Gleadow and Margaret Murnane / 117 |
| 4-5     | The Solubility of Aluminosilicates in Kraft Green and White Liquors  
P. N. Wannenmacher, Wm. James Frederick, K. A. Hendrickson and K. L. Holman / 131 |
| 4-6     | Chloride Removal from the Kraft Recovery Boiler ESP Dust Using the Precipitator Dust Purification (PDP) System  
N. Jemaa, M. Paleologou, R. Thompson, B. Richardson, C. Brown and M. Sheedy / 141 |
| 5-1     | Viscosity Changes in Black Liquor When Bleach Plant Filtrates are Added  
Lars Ledung and Per Ulmgren / 157 |
| 5-2     | Factors Influencing Heat Treatment of Black Liquor  
Liva Söderhjelm, Per-Erik Sågfors and Erkki Kiiskilä / 169 |
| 5-3     | Relationships Between the Chemical Composition and the Combustion Properties of Black Liquor  
Raimo Alén and Heikki Siistonen / 185 |
| 5-4     | Oxidative Heat Treatment for Increasing Recovery Boiler Capacity: Concept & Initial In-Mill Pilot Evaluation  
Jack Porter, Vincent Magnotta, Tom Mullen, and Julie Zielinski / 193 |
| 5-5     | Irreversible Black Liquor Viscosity Reduction by High Intensity Shearing  
James W. Smith, Douglas L. Hopkins, D. T. Ellenor, J. N. Harbinson and Jack Porter / 213 |
<table>
<thead>
<tr>
<th>SESSION</th>
<th>TITLE, AUTHOR</th>
</tr>
</thead>
</table>
| 5-6     | Effects of Liquor Heat Treatment on Black Liquor Combustion Properties  
Esa Vakkilainen, Rainer Backman, Mikael Forssén, and Mikko Hupa / 229 |
| 6-1     | High Solids Firing in an Operating Recovery Boiler - Comparison of CFD Predictions to Practical Observations in the Furnace  
Esa Vakkilainen, Lars Kjäldman, Veikko Taivassalo, Pia Kilpinen and Tommy Norström / 245 |
| 6-2     | New Black Liquor Drop Burning Model  
T. M. Grace, W. J. Frederick Jr., K. Iisa, and K. Wåg / 257 |
| 6-3     | Validation of CFD-Based Recovery Furnace Models  
Thomas M. Grace, Steven Lien, Wolfgang Schmidl, Daniel Tse, Zia Abdullah, and Martha / 271  
Salcudean |
| 6-4     | Artificial Neural Network Modeling of a Kraft Recovery Boiler  
Robert R. Horton, Mark A. Denlinger, Steven J. Lien, Wolfgang Schmidl, and Thomas M. Grace / 283 |
| 6-5     | Use of a Computer Model for Evaluation of Combustion and NOx Control Alternatives in a Kraft Recovery Boiler  
L. Tao, W. Blasiak, and R. Fakhrai / 299 |
| 7-1     | The Real Benefits of High Solids Firing  
Andrew K. Jones, Ted Mao, Alfredo Nagel and Fred Casale / 313 |
| 7-2     | Recovery Modernization at Stora Cell Skutskär. Experience with New Technology  
Kaj Båckman, Hans Sjöberg and Hans Lindberg / 323 |
| 7-3     | Recovery Boiler Modernisation:Converting Old Recovery Boilers from Bi-Drum to Single Drum Type  
Kjell Ljungkvist, Ulf Bergström, Mike LeClair and Bert Hansson / 337 |
| 7-4     | Determination of the Residence Time Distribution of Combustion Air in a Recovery Boiler by Helium Injection and Concentration Measurement  
Jan-Erik Gustafsson and Vikram Kaul / 343 |
| 7-5     | Bed Cooling Following an ESP  
Thomas M. Grace / 355 |
| 8-1     | Current Trends in Evaporator Fouling  
Wolfgang Schmidl and Wm. James Frederick / 367 |
| 8-2     | Calcium Supersaturation and Evaporator Scaling  
Staffan Magnusson, Christin Sjölander, and Jan Lidén / 379 |
| 8-3     | Evaporator Upgrading Experience at Irving Pulp & Paper, Limited (Part I)  
F. Piroozmand, D. Mott, and F. Slater / 385 |
| 8-4     | TUBE LI2 - A New Black Liquor Concentrator Technology for Modern Mill Demands  
Lars Olausson and Anssi Mäkelä / 393 |
| 8-5     | NAELS: A New Method for Calculating Equilibrium Solubility of Burkeite and Sodium Carbonate in Black Liquor  
G. P. Golike, Q. Pu, K. L. Holman, K. R. Carlson, P. C. Wollwage, and H. G. Folster and S. Rankin / 403 |
| 8-6     | Solving Calcium Scaling Problems in Black Liquor Evaporators  
Jarmo Kaila, Heikki Jaakkola and Hannu Kytö / 419 |

Subject Index / 1175 (Volume Three)