<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>An ABB Perspective on the Pulp and Paper Industry</td>
<td>11</td>
</tr>
<tr>
<td>Percy Barnevik, ABB Asea Brown Boveri Ltd, Switzerland</td>
<td></td>
</tr>
<tr>
<td>The Forest Industry - Progress and Problems in the 1990's</td>
<td>12</td>
</tr>
<tr>
<td>F Keith Hall, International Paper, Corporate Research Center, NY, USA</td>
<td></td>
</tr>
<tr>
<td>The Sustainable Paper Cycle Project</td>
<td>31</td>
</tr>
<tr>
<td>Claes G Hall, Aracruz Environmental Services Ltd, UK</td>
<td></td>
</tr>
<tr>
<td>Trends and Achievements in Pulp and Paper Research</td>
<td>36</td>
</tr>
<tr>
<td>Lennart Eriksson, STFI, Swedish Pulp and Paper Research Institute, Sweden</td>
<td></td>
</tr>
<tr>
<td>Strategy and Tactics for the Pulp and Paper Industry’s R&amp;D</td>
<td>37</td>
</tr>
<tr>
<td>Tom Lindström, MoDo R&amp;D, Sweden</td>
<td></td>
</tr>
<tr>
<td>Intellectual Property Management in the Forest Products Industry</td>
<td>41</td>
</tr>
<tr>
<td>Esko Friman, Valmet Corporation, Finland and Gunther F Hoffmann, Weyerhaeuser Company, WA, USA</td>
<td></td>
</tr>
<tr>
<td>Can Timber Production and Biodiversity Be Combined?</td>
<td>52</td>
</tr>
<tr>
<td>Jan Remröd, Swedish Forest Industries Association, Sweden</td>
<td></td>
</tr>
<tr>
<td>Cycles and Investments - Causes and Effects</td>
<td>64</td>
</tr>
<tr>
<td>Per Gundersby, Jaakko Pöyry Consulting Oy, Finland</td>
<td></td>
</tr>
<tr>
<td>Corrugated Business Development by Advanced Technology and Logistic Systems</td>
<td>79</td>
</tr>
<tr>
<td>Ulf Kilander, AssiDomän Packaging AB, Sweden</td>
<td></td>
</tr>
<tr>
<td>Corrugated Materials Demand Virgin Fibre Input</td>
<td>88</td>
</tr>
<tr>
<td>Leif Brodén, Stora Billerud AB, Sweden</td>
<td></td>
</tr>
<tr>
<td>Recycling of Beverage Cartons</td>
<td>92</td>
</tr>
<tr>
<td>Richard Almgren, Tetra Pak, Sweden</td>
<td></td>
</tr>
<tr>
<td>Packaging and the Environment - Common Sense or Non Sense?</td>
<td>108</td>
</tr>
<tr>
<td>Christer Engman, Iggesund Paperboard AB, Sweden</td>
<td></td>
</tr>
<tr>
<td>Expanding Packaging Needs in Russia and Eastern Europe</td>
<td>112</td>
</tr>
<tr>
<td>Staffan Erenalm, Åkerlund &amp; Rausing Group, Sweden</td>
<td></td>
</tr>
<tr>
<td>Communication 2000: Visions and Strategies</td>
<td>120</td>
</tr>
<tr>
<td>Michael Hancock, Pira International, UK</td>
<td></td>
</tr>
<tr>
<td>Heat-set Printing in the Future</td>
<td>130</td>
</tr>
<tr>
<td>Keith Dalton, Heidelberg-Harris SA, France</td>
<td></td>
</tr>
<tr>
<td>Developments in Future Catalogue Printing and Distribution by CD-ROM</td>
<td>131</td>
</tr>
<tr>
<td>Wolfgang Weide, ERA, Germany</td>
<td></td>
</tr>
<tr>
<td>Next Generation of Digital Printing Presses</td>
<td>132</td>
</tr>
<tr>
<td>Leif Wintzell, Graphic Partners AB, Sweden</td>
<td></td>
</tr>
<tr>
<td>Electronic Daily Newspaper with Profit</td>
<td>133</td>
</tr>
<tr>
<td>Gregory Kearny, Casper Star Tribune, USA</td>
<td></td>
</tr>
<tr>
<td>Are Recycled Fibres an Indispensable Raw Material? - Demands of Industry, Governments, Environmentalists and the Public</td>
<td>134</td>
</tr>
<tr>
<td>Lothar Göttsching, Technische Hochschule Darmstadt, Germany</td>
<td></td>
</tr>
<tr>
<td>Recycled Paper and Producers’ Responsibility in Sweden</td>
<td>142</td>
</tr>
<tr>
<td>Jan Bruzelius, I L Returpapper AB, Sweden</td>
<td></td>
</tr>
<tr>
<td>Energy and Environmental Aspects on Recovery of Recycled Fibres</td>
<td>154</td>
</tr>
<tr>
<td>Stig Byström, Mo och Domsjö AB and SLU, Swedish University of Agricultural Sciences and Lars Lönnstedt, SLU, Swedish University of Agricultural Sciences, Sweden</td>
<td></td>
</tr>
<tr>
<td>Some Aspects of the Biological Processing of Recycled Fibres</td>
<td>168</td>
</tr>
<tr>
<td>Amis Treimanis, Mara Leite, Uldis Viesturs and Marija Elsimonte, IWC, Latvia State Institute of Wood Chemistry, Latvia</td>
<td></td>
</tr>
<tr>
<td>Per Grundström and Thomas Granfeldt, Sunds Defibrator Industries AB, Sweden</td>
<td></td>
</tr>
<tr>
<td>The Effect of Ageing of Waste Paper on the Deinking Efficiency</td>
<td>179</td>
</tr>
<tr>
<td>Päivi Lunabba, Annika Pettersson and Inger Eriksson, SCA Graphic Research AB, Sweden</td>
<td></td>
</tr>
</tbody>
</table>
Thermomechanical Pulping and Stone Grinding - a Comparative Review of Their Fundamental Mechanisms

Göran Gros and Bruno Lönnberg,
Åbo Akademi University, Finland

The Influence of Fines on the Energy Demand of Disc Refined Mechanical Pulp

John D Richardson, Ross F Wakelin and Stuart R Corson, PAPRO New Zealand, New Zealand

Mill Experience with New Two-Stage Mechanical Pulp Refiner Concept

Bertil Ferrari, Kvaerner Hymac AB, Sweden

Thermopulp™ - A New Energy Efficient Mechanical Pulping Process

Michael Jackson, Ove Danielsson and Bo Falk, Sunds Defibrator AB, Sweden

Control of Fundamental Pulp Properties in TMP and SGW Production by the Use of Factor Analysis

Olof Ferritsius, Stora Corporate Research AB, Sweden

Improved Technology for Dewatering of Low-Freeness Pulps

J Kappel, F Petschauer and J Sbaschnigg, Pulp Division, Andritz AG, Austria

A Surface Properties Sensor for the Paper Industry

Lee Chase and John Goss, Measurex Corporation, CA, USA

How Can New Control Methods Improve Pulp Mill Performance?

Jarmo Kosunen, Honeywell Oy, Richard J. A. Fleet, Honeywell Inc, USA and Örjan Forslund, Honeywell AB, Sweden

Gamma Attenuation Based Consistency Measurement

Mark MacKinnon, Fisher-Rosemount, Division Kay-Ray/Sensall, IL, USA

Control of Customized, Closed, Chlorine-Free Pulping

Carl Johan Morell and Roland Åberg, ABB Industrial Systems AB, Sweden

CD Caliper Control Requirements for Soft Nip Calenders

G Burma, M Heaven and R Vyse, Measurex Devron Inc, Canada

New Consistency Measurement Technology Creates Control Opportunities

Mikko Laurikkala, Mikko Vuoti, Taisto Huhtelin and Heikki Koivo, Tampere University of Technology, Finland

Customized Production of High Quality Products Based on New Views on Organizational Design and System Development

Sven Gunnar Edlund, NUTEK, Swedish National Board for Industrial and Technical Development, Sweden

Integrated Process Analysis, Simulation and Optimization for Improved Efficiency

Juha Piipponen, Karl Holmström, Heimo Ihalainen and Risto Ritala, KCL Development Oy, Finland and Markus Jalkanen, The Finnish Pulp and Paper Research Institute, Finland

A Process Simulator for Recovery Boiler ..

Ewa Ekholm-Stenberg,
Assidömän Karlsborg AB, Sweden

An Advanced Platform for Dynamic Simulation of Paper and Board Mills

Anne Niemenmaa, Ismo Laukkonen and Jari Lappalainen, Finntech Oy and Kaj Justin, VTT Automation, Finland

Applications of Factor Network Analysis in the Pulp and Paper Industry

Bill Strand, Pacific Simulation, ID, USA

The Modern Wood Yard - a Combination of Process, Economy, Environment and Attractive Working Place

Åke Svensson and Kurt Johansson,
BMH Wood Technology AB, Sweden

Effect of Modern Woodhandling Technology on Wood Loss, Chip Quality and Profitability in Pulping

Tapani Havu,
Sunds Defibrator Woodhandling Oy, Finland

Improved Method of Overthick Chip Treatment and its Process Design Implications

Shannon Javid, Desmond Smith and Kendall Kreft, Acrowood Corporation, WA, USA

Modified Kraft Cooking - Present and Future

Nils Hartler,
KTH, Royal Institute of Technology, Sweden
Part 2

High Cationic Starch and Microparticles for Furnish Systems with High Levels of Disturbing Substances ........................................ 567

Michael Persson and Annika Pal, Eka Nobel and Olle Wikström, Lyckeby Stärkelsen, Sweden

Influence of Polymer Stock Sizing on the Coated Quality, Especially of Wood-Containing Papers ............. 584

Dieter Meck, BASF AG, Germany and Rudi Lorz, BASF Oy - FNP, Finland

Microparticle Retention System .................................. 596

Tore Duvnäs, Kemira Chemicals Oy, Finland

Some Paperchemical Aspects on Formation - Floc Strength, Pilot Experiments and Computer Simulations ...... 603

Agne Swerin and Ulf Sjödin, STFI, Swedish Pulp and Paper Research Institute, Sweden

Installation of a Hybride Former on AssiDomän Kraftliner PM 2 ........................................ 606

Björn Pettersson, Lars Bergström and Staffan Persson, AssiDomän AB, Sweden

New Developments in High Consistency Forming .......................................................... 616

Börje Sandgren, Valmet Karlstad AB, Sweden

Man-made Press Rolls: Good Substitutes for Granite ....................................................... 629

Hans M Ericsson, Holmen Paper AB, Sweden

The Revolution of the Press Section .................. 639

Carl Håkansson, Valmet Karlstad AB, Sweden and Juha Kivimaa, Valmet Corporation, Finland

A Holistic Perspective on Environmental Research - Progress and Possibilities ............... 649

Bengt Hultman, Mo och Domsjö AB and Lars Strömberg, AssiDomän AB, Sweden. Chairman respectively Secretary of the Swedish Forest Industries’ Environmental Project

Evaporation in Pulp and Paper Mill Water Pollution Control - Comparison with Membrane Filtration and Other Methods .... 656

Karin Lilja and Peter Ullman, Jaakko Pöyry Consulting AB, Sweden

Modern Pulp Bleaching and the Aqueous Environment ................................................... 677

Kari Ebeling and Esko Meloni, Kymmene Corporation, Finland
Removal of Extractives and Heavy Metals with the NetFloc System ........................................ 696
K Jansson, C Rampotas and Hans Terelius, Kemira Chemicals Oy, Finland

Microfilters - A New Approach to Water and Effluent Treatment Using an Established Concept ........................................ 709
Len W Dewhurst, Algas Fluid Technology Systems A/S, Norway

Kraft Recovery after 2000 ........................................ 717
Björn Warnqvist, ÅF-IPK AB, Sweden

Vapour Recycling for High Solids Evaporation ........................................ 725
Olle Wennberg, Kvaerner Pulping AB, Sweden

Operating Experience of Large Recovery Boilers ........................................ 731
Kari Haaga, Tampella Power Inc, Finland

Experiences of the Kebizuta® Scrubber in Different Applications ........................................ 744
Thomas K Wahlberg, Thomas Wahlberg Konsult AB, Sweden

Green Liquor Processing ........................................ 755
E Kiiskilä, J Jäntti and R Puumalainen, Ahlstrom Corporation, Finland

Green Liquor Filtration - Implementation and Performance in the Modern Kraft Mill ........................................ 768
Patrik Löwnerz, Magnus Ingelman, Caustec AB and Martin Wimby, Kvaerner Pulping AB, Sweden

Market and Environment or Environment and Market ........................................ 777
Helge Eklund, Södra Skogsägarna AB, Sweden

Enhanced Two-Stage Oxygen Delignification ........................................ 778
Johan Devenyns, François Desprez and Annie Renders, Solvay Interox, Belgium

High Pressure Peroxide Bleaching ........................................ 790
Kaj Henrikson and Olavi Pikka, Ahlstrom Corporation, Finland

Ozone Utilization in ECF Bleach Sequences ........................................ 802
Matts O G Sundin, Sunds Defibrator AB, Sweden and Bruce F Griggs, Union Camp Corporation, USA

Long-Term Experience of Using Enzyme in TCF Pulp Bleaching at Wisaforest ........................................ 813
Vidar Grönborg, Clariant UK Ltd, UK, Kenneth Winberg, UPM-Kymmene/Wisaforest and Tomas Jakobsson, Clariant Finland, Finland

Sustainable Development in STORA Pulp Mills ........................................ 821
Brita Swan, Stora Corporate Research AB, Peter Kinell, Stora Gruvön and Karl-Eric Ström, Stora Cell AB Gävle, Sweden

Towards the Closed Bleach Plant ........................................ 832
Peter Sandström, SCA Graphic Sundsvall AB and Göran Annergren, SCA Research AB, Sweden

Five Years Experiences of Closed-Loop TCF-Bleaching at Domsjö Sulphite Mill ........................................ 840
Bertil Lindqvist, Sten Häggström and Kent Sondell, MoDo Paper AB, Sweden

TCF at Värö Pulp Mill - Development and Experiences ........................................ 848
Lennart Igerud, Jan Malmström and Per Larsson, Södra Cell AB, Sweden

Concurrent Bleaching and Metal Management by Addition of EDTA to a Chlorine Dioxide Stage ........................................ 857
Otto Lindeberg and Jan Lidén, MoDo R&D and Lars Ahlenius and Göran Svensson, MoDo Paper AB, Sweden

The New Concept for Pulp Sheet Formers Based on the Double Wire Press Principle ........................................ 867
F Petschauer, E Progyanyi and J Kappel, Pulp Division, Andritz AG, Austria

Recent Developments in Pulp Drying ........................................ 875
Ola Larsson and Bengt Lindström, ABB Fläkt Industri AB

The Shoe-Press Installation in Braviken’s PM 53 ........................................ 885
Olle Svensson, Per Bjurbom and Airi Nikko, Holmen Paper AB, Sweden

Closed Sheet Transfer in Paper Machines ........................................ 888
Juha Tiiilikka, Nils O Eklund and Lars Fagerholm, Albany Nordiskafill AB, Sweden

Recent Progress in High Intensity Pressing and Drying Processes ........................................ 898
Stig Stenström, Rikard Krook and Håkan Persson, LTH, Lund Institute of Technology, Sweden

High Performance Tissue Machine Dry End ........................................ 910
Ingvar Kleredåf and Tord Svanqvist, Valmet Karlstad AB, Sweden

New On-Line Technology for LWC Production ........................................ 930
Michael Trefz, Voith Sulzer Papiermaschinen GmbH, Germany
STORA Building a Paperboard Mill in Skoghall for the 21st Century ............................... 942
Carl Zotterman, Stora Billerud AB, Sweden

The Influence of Ultrafiltered Coating Colour on LWC Paper Properties in Pilot Coater Trials ........................................ 948
Martti Mäkinen, Jouni Alho and Mika Leiritie, Jylhäräisio Oy, Finland

Coating with Automatic Blade Control Profiling Presented by Mill Operation Results ........................................ 961
Per Emilsson, BTG Källe Inventing AB, Lars Munter, Holmen Paper AB and Eivind Sundløf, MoDo Paper AB, Sweden

Improved Runnability of Film Press Coatings ........................................ 975
D Glittenberg, J-L Hemmes and N-O Bergh, Cerestar Application Centre Paper & Corrugating, Germany

A New Dimension in Controlling Drying Related Coating Quality ........................................ 995
Sture Ahlskog and Harri Peltoniemi, IRT Finland Oy, Finland and Leif Johansson, Infrarödt Teknik AB, Sweden

Optimizing the Finishing Process by Applying Advanced Finishing Technology ........................................ 1005
R Vyse, J King and M Heaven, Measurex Devron Inc, Canada

Innovations on Elastic Calender Covers .. 1014
Norbert Gamsjäger and Benno Bader, Scapa Kern GmbH, Austria

Christer Idhammar, Idcon Inc, NC, USA

Corrosion Probes as a Tool for Material Investigation in Boilers ........................................ 1048
Thomas Eriksson and Eric Häggbloom, Studsvik Material AB, Sweden

New High Advanced Roll Measurement Technology ........................................ 1056
Petri Kuosmanen and Pekka Väänänen, Helsinki University of Technology, Finland

Condition Monitoring with PC-Based Three Dimensional Vibration Measurement and FFT-Based Frequency Analysis ........................................ 1064
Olov Åkerlund and Lars Johansson, Nåden Teknik AB, Sweden

Some Experiences with Duplex and Super-Austenitic Stainless Steels in the Pulp and Paper Industry ........................................ 1078
Jacques Charles, J P Audouard, J C Gagnepain and M Verneau, Creusot-Loire Industrie, France

Göran Sund, SAQ Kontroll AB, Sweden

Anders Nordstrand, Mo och Domsjö AB. Chairman of the Swedish Forest Industries’ Environment and Energy Committee, Sweden

Energy and Environmental Trends in Chemical Pulping and Recovery ........................................ 1103
Lars L Stigsson, Kvaerner Pulping Technologies AB, Sweden

Energy Conservation in the Pulp and Paper Industry with Absorption Heat Transformers ........................................ 1125
Anders Gidner, Anders Ernblad and Hans Gyllensten, Chematur Engineering AB, Åke Jernqvist and Gharib Aly, University of Lund, Sweden

Pressurized Steam Drying of Sludge, Bark and Wood Chips ........................................ 1136
Arne Sloth Jensen, Niro A/S, Denmark

Pressure and Power - Possibilities to Generate More Electric Power from the Kraft Recovery Process ........................................ 1140
Hans Magnusson, KPA i Karlstad AB, Sweden