

# CONTENTS

## VOLUME 1

### Session 1—Pulp

#### Growth Structure and polymorphy

Chairman: **D. Attwood**

- Tissue Culture and the Pulp and Paper Industry 1  
 D.W. **Einspahr** and M. Johnson
- Pulp and Paper Properties as Influenced by Wood Density  
 — Same Species and Age of Eucalyptus 7  
 R.L. **Vasconcellos** Dins and E. **Claudio-da-Silva** Jr
- Solid State NMR of Cellulose, Wood and Pulp 37  
 R.H. **Marchessault**, M.G. Taylor, G. Hamer and Y. **Deslandes**
- Studies on Polymorphy in Native Cellulose 59  
 R.H. **Atalla**

### Fibre and sheet properties

Chairman: **T. Lindstrom**

- Strength and Chemical Composition of Wood Pulp Fibres 77  
 D.H. Page, R.S. Seth and F. **El-Hosseiny**
- Qualities of Kraft and Thermomechanical **Radiata** Pine  
 Papermaking Fibres 93  
**R.P.** Kibblewhite
- Visco-Elastic Properties of Wet Webs under Dynamic  
 Conditions 133  
 J. Jnntunen

### Session 2—Fibres

Chairman: **P. Howarth**

- The Surface Potential of Cellulose 165  
**T.M.** Herrington
- Curl, Crimps, Kinks and Microcompressions in Pulp  
 Fibres — Their Origin, Measurement and Significance 183  
 D.H. Pnge, R.S. Seth, B.D. Jordan and M.C. **Barbe**

Effect of Paper Structure on the Load Elongation Behaviour of Fibre-to-Fibre Bonds	229
E. Relulainen and K. Ebeling	
The Flocculation of Pulp Fibres	265
R.J. Kerekes, R.M. <b>Soszynski</b> and P.A. Tam Doo	
The Effect of Wet Fibre Flexibility on Sheet Apparent Density	311
R. <b>Steadman</b> and P. Luner	
Chairman: D.H. Page	
Z-Direction Properties:	
The Effects of Yield and Refining	339
B.F. <b>Berger</b> and C.A. Baum	
Measuring Flocculation using Image Analysis	363
J. <b>Gorres</b> , H.W. <b>Kropholler</b> and P. Luner	
Conduction of Heat in Paper	381
I. Kartovsara. R. <b>Rajala</b> , M. Luukkala and K. Sipi	
Mechanical Treatment of Pulp Fibres for Paper Property Development	413
R.R. <b>Hartman</b>	

## VOLUME 2

Session—Water	
Chairman: B.W. Attwood	
The Origin and Alleviation of the CD Variations in the Physical Properties of Paper	445
O.J. <b>Kallmes</b> , W. Kufferath and B.A. Thorpe	
The Areal Distribution of Liquid Penetration of Paper	483
P. <b>Howarth</b> and M.K. <b>Schindler</b>	
The Relative Moisture Sensitivity of Compression as Compared to Tensile Strength	497
<b>E.L. Back</b>	
The In-Plane and Out-of-Plane Hydroexpansional Properties of Paper	511
<b>L. Salmen</b> , C. <b>Fellers</b> and M. <b>Htun</b>	
The Impact of Water Sorption on the Compression Strength of Paper	529
C. <b>Fellers</b> and A. <b>Bränge</b>	

## Session 4—Fillers

Chairman: B. Radvan

- The Relationship between Strength and Light Scattering  
Co-efficient for Filled Papers 543  
**R. Bown**
- A Method for Measurement of Chalk Distribution in  
Paper Sheets 577  
B. Norman and **O. Axell**
- The Dry Strengthening Effect of **Cationic** Starch Wet End  
Addition of Filled Papers 589  
T. **Lindström**, P. Kolseth and P. **Näslund**
- The Preparation of Lumen-loaded Pulp 613  
A.M. **Scallan** and S.R. Middleton

## Session 5—Coating

Chairman: G.A. Baum

- Evaluating the Quality of Pressure Sensitive Copy Papers 633  
D. Horand
- On the Dry and Wet Surface Strengths of Coated Paper 655  
I. Pettersson, M. Rigdahl, **I. Fineman** and G. **Engström**
- Surface Structure of Coatings 673  
A.E. Ranger
- Rheology of Dispersions as Two Phase Systems 687  
J.E. **Kline**

## Session 6—Sizing and Pitch

Chairman: N.K. Bridge

- Mechanism of Self-sizing of Paper 707  
J.S. Aspler, N. **Chauret** and M.B. Lyne
- A Review of Kraft Pulp Deresination and  
Pitch Problems 729  
M. **Björklund Jansson**, E.L. Back and **M.I.** Tufvesson
- Sizing and its Effect on Paper-Polymer Adhesion 761  
J. Borch
- Sizing Mechanisms and the Effect of Fillers 785  
**J. Marton**
- Neutral Sizing and the Mechanism of **Alkyl** Ketene  
Dimer Sizing 815  
**J.C.** Roberts, D.N. Garner and U.D. Akpabio

Session 7—Additives

Chairman: J.C. Roberts

- The Time-dependent Change in Zeta Potential of  
Particles with **Cationic** Polymer 841  
**H. Tanaka**
- Chemical Modification of Pulp Refining Rates 879  
**G.G. Allan, R. Aravamuthan, C. Christien and M.K. Reghuraman**
- The Chemistry of Aluminium Salts in Papermaking:  
Influence on the Adsorbtion of a **Cationic**  
Polyelectrolyte 895  
**R.D. Crow and R.A. Stratton**
- Determination of Ion-exchanged Capacity of  
Carboxymethylated Cellulose Fibres using Colloid and  
**Conductometric** Titrations 917  
**L. Wagberg, L. Winter and T. Lindström**