This is volume IV of four volumes of the Proceedings of the Fifth International Alcohol Fuel Technology Symposium. The arrangement of papers is as follows:

<table>
<thead>
<tr>
<th>Vol I</th>
<th>A Resource Base</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B Resource Conversion</td>
</tr>
<tr>
<td>Vol II</td>
<td>Fuel Utilisation</td>
</tr>
<tr>
<td></td>
<td>C1 Petrol Substitution</td>
</tr>
<tr>
<td></td>
<td>C2 Diesel Substitution</td>
</tr>
<tr>
<td></td>
<td>C3 Lubrication</td>
</tr>
<tr>
<td>Vol III</td>
<td>C4 Field Testing (Fuel Utilisation)</td>
</tr>
<tr>
<td></td>
<td>D Environmental</td>
</tr>
<tr>
<td></td>
<td>E Implementation</td>
</tr>
<tr>
<td>Vol IV</td>
<td>Plenary Keynote Speeches</td>
</tr>
<tr>
<td></td>
<td>Concluding Highlight Speeches</td>
</tr>
<tr>
<td></td>
<td>Discussion Sessions</td>
</tr>
<tr>
<td></td>
<td>Late Papers</td>
</tr>
<tr>
<td></td>
<td>List of Participants</td>
</tr>
</tbody>
</table>

**CONTENTS : VOLUME IV**

**LIST OF PAPERS**

Vol-Page

**AUTHOR INDEX**

Vol-Page

**OPENING SESSION**

Vol-Page

**KEYNOTE ADDRESSES**

Vol-Page

1st  "The Prospects for Alcohol Fuels"
     A.L. Titchener
     4-11

2nd  "The Potential Role of Forest Biomass as a Source of Alcohol Fuels, with special reference to Canada"
     A. Dolenko & S. Pneumaticos
     4-21

3rd  "Coal as a Resource for Alcohol Fuels"
     R.K. Dutkiewicz
     4-51

4th  "Survey of Engine and Vehicle Development in Relation to Alcohol Fuels"
     H.J. Forster
     4-67

(iii)
5th "Thailand's Fuel Alcohol Development: Prospect and Problems"
   T. Vicharangsan 4-101
6th "The French Alcohol Fuels Programme"
   M.P. Le Prince 4-109
7th "Implementation of Alternative Fuels in Developing Countries with Special Reference to Papua-New Guinea"
   K.J. Newcombe & E.B. Holmes 4-127
8th "Implementation Factors in the Brazilian Alcohol Programme"
   J.L. Acioi 4-143
9th "Implementation of Alcohol Fuels as Replacement of Crude Oil"
   J.R. Bowden & R.G. Jackson 4-155

Keynote Papers - Questions & Answers 4-165

HIGHLIGHT PAPERS 4-171

1st "Resources and Resource Conversion"
   S. Trindade & V. Yang 4-173
2nd "Alcohol Fuel Utilisation"
   W. Bernhardt 4-193
3rd "Transitional and Implementational Problems"
   B.V. Walker 4-219

LATE PAPERS 4-231

<table>
<thead>
<tr>
<th>Paper</th>
<th>Author/Affiliation</th>
<th>Title</th>
<th>Vol-Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-4</td>
<td>Goldhammer, J.S. &amp; Murphey, W.K.</td>
<td>Development plan for the production of methanol from biomass in southeast Colorado.</td>
<td>4-233</td>
</tr>
<tr>
<td></td>
<td>University of Lowell, Ma./Texas A &amp; M University, Texas, USA.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A-13</td>
<td>Yeganiatz, L., Palma, V. &amp; Richter, H.V.</td>
<td>Energy crops' marketed surplus response to farm gate prices and its implications for fuel alcohol production.</td>
<td>4-241</td>
</tr>
</tbody>
</table>
B : CONVERSION

B-8 Carioca, J.O.B., Arora, H.L., & Filho, R.C. Federal University of Ceara, Brazil.
Vegetal diesel by cracking process.

B-12 deAraujo, P.F.C., Goldemburg, J., Lima, U.de A. & Neto, E.W.W. Promocet, Brazil
Energy balance for the production of ethyl alcohol in a micro-distillery.

Continuous Cellulose hydrolysis by the New York University Process.

C1 : PETROL SUBSTITUTION

C1-26 Gambino, M., Polletta, A. & Rapone, M. Instituto Motori de C.N.R. Naples, Italy.
High Compression/car burning engines : a good chance for methanol-gasoline blends?

C2 : DIESEL SUBSTITUTION

C2-26 Raje, N.R., Goel, P.K. Indian Oil Corporation Research & Development Centre, Faridabad, India.
The role of Methanol as substitute transport fuel in India.

C4 : FIELD TESTING

C4-6 Finch, E.O., Brandini, A. & Brick, A. IICA - EMBRAPA - CNPMS/EMBRAPA Brazilia/Ford Brazil, S.A., Brazil.
Alcohol fuelled farm tractor efficiency and reliability.

C4-14 Shears, T.W. & Judd, B.T. Ministry of Works & Development Auckland/Industrial Processing Division, DSIR, New Zealand.
Operating a vehicle fleet on methanol blend fuels 1978 to 1981.

D : ENVIRONMENTAL & SOCIAL

D-12 Kasturi, P. University of Hawaii, Ha., USA.
The economics of alternate stillage disposal methods in alcohol production.

D-16 Yeganiantz, L. Brandini, A. & da Cruz, E. Brazilian Agricultural Research Corporation, Brazil.
Environmental impact of Brazilian bio-energy program.
E : IMPLEMENTATION

E-8 Celis. R., Vedova, M. & Villasuso, J.M.
Economic Research Institute,
University of Costa Rica,
Costa Rica.

Balance of payments and food production as possible barriers to implementation alcohol fuel programs in developing countries. the case of Costa Rica.

E-20 Maund, G., Sage, R. & Webb, R.F.*
Transportation Energy Division
Energy, Mines & Resources
Canada/*R.F. Webb Corporation
Ottawa, Canada.

Canadian developments and prospects for alcohol fuel.

DISCUSSION SESSIONS

Section A - Resource Base
Presentations

Section B - Conversion
Presentations
First Panel Discussion
Second Panel Discussion
Third Panel Discussion
Fourth Panel Discussion

Section C1 - Petrol Substitution
Presentations
First Panel Discussion
Second Panel Discussion

Section C2 - Diesel Substitution
Presentations
First Panel Discussion
Second Panel Discussion
Third Panel Discussion

Section C3 - Lubrication
Panel Discussion

Section C4 - Field Testing
Presentations
First Panel Discussion
Second Panel Discussion

Section D - Environmental & Social
Presentations
Panel Discussion

Section E - Implementation
Presentation
First Panel Discussion
Second Panel Discussion
EPRATA/ADDITIONS

WORKSHOP - DIESEL FUEL SUBSTITUTION

CLOSING SESSION

DELEGATES