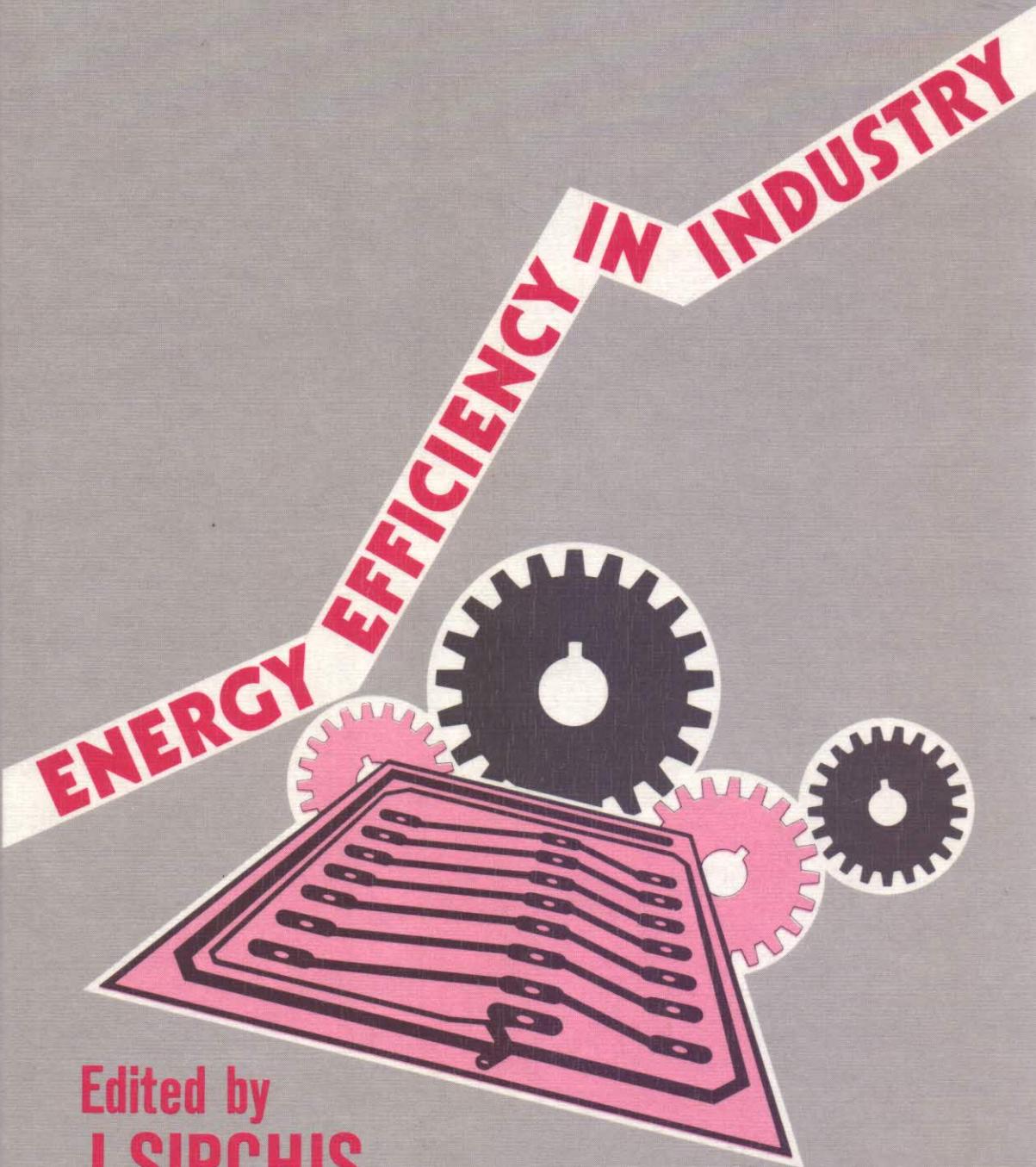


Commission of the European Communities



Edited by
J.SIRCHIS

ELSEVIER APPLIED SCIENCE

CONTENTS

Preface	v
OPENING SESSION	
Opening address	2
<i>G. Turner, Senator for Science and Research, Berlin</i>	
Opening address	5
<i>G. Briganti, ENEA, Rome, Italy</i>	
Opening address	8
<i>C. S. Maniatopoulos, Director-General for Energy, Commission of the European Communities, Brussels, Belgium</i>	
SESSION I: OVERVIEW	
Ways and techniques in the rational use of energy	14
<i>H. Schaefer, Institut für Energiewirtschaft und Kraftwerkstechnik, Munich, Federal Republic of Germany</i>	
SESSION II: PROCESS INTEGRATION	
Energy savings in the manufacture of crankshafts—an example of integrated analysis based on detailed measurements	28
<i>M. Rudolph, Professor of Power Production and Power-station Technology, Munich, Federal Republic of Germany</i>	
Process integration using pinch technology	37
<i>B. Linnhoff, Centre for Process Integration, UMIST, and A. Eastwood, Linnhoff March Ltd, Manchester, United Kingdom</i>	
Process integration in a benzole refinery	52
<i>R. L. Bardsley, Staveley Chemicals, Chesterfield, United Kingdom</i>	

The results of a process integration study to improve energy efficiency at a British brewery

R. Marsh, Chief Engineer and Energy Manager, Tetley Walker Limited, Warrington, United Kingdom

SESSION III: NEW TECHNIQUES FOR LOW-TEMPERATURE HEAT RECOVERY

Harnessing heat pump and steam recompression technology to meet the needs of industry

R. Gluckman, March Consulting Group, Windsor, United Kingdom

Impact of new technologies on future heat exchanger design

D. A. Reay, David Reay & Associates, Whitley Bay, United Kingdom

Energy recovery by mechanical recompression of hydrocarbon vapour

J. P. Livernet, Société Rhône-Poulenc Chimie, Usine de Chalampé, France

Heat exchangers in plastic

J. Huyghe, General Manager, GRETh, Grenoble, France

Vapour compression in a brewery

E. Nolting, MAN Technologie GmbH, Munich, Federal Republic of Germany

Valorization of residual steam in brine evaporation

P. F. Bunge, Akzo Zout Chemie Nederland BV, Research & Technology, Hengelo, The Netherlands

Overview of the European Community research and development actions on low temperature heat recovery

P. A. Pilavachi, Directorate-General Science, Research and Development, Commission of the European Communities, Brussels, Belgium

SESSION IV: INDUSTRIAL PLANT—PROCESS CONTROL AND OPTIMIZATION

Control and optimization of processes

B. Kalitventzeff, University of Liege, Royal Military Academy, Belgium

An unconventional energy recycling project

H. P. van Heel, Managing Director of Hoechst Holland NV, Vlissingen, The Netherlands

The optimized process control of an ethylene plant <i>V. Kaiser and X. Hirstel, TECHNIP, Paris, France and S. Barendregt, PYROTEC, The Netherlands</i>	149
Microprocessor system and digital regulation loops for increasing cowpers energy savings <i>A. Sciarretta, Process Control of Pig Iron Area at Italsider Taranto Steel Works, Taranto, Italy</i>	159
SESSION V: ENERGY MANAGEMENT OF UTILITIES	
New technics for the management of utilities in industrial plants <i>G. B. Zorzoli, Board of Directors, ENEL, Rome, Italy</i>	170
Application of the SECI-MANAGER software to energy systems optimization and on-line industrial processes <i>M. Coeytaux, Serete Engineering, Paris, France</i>	178
Energy savings and economic consequences resulting from the installation of a cogeneration unit (electricity—steam) at the Corinth refinery (Motor Oil Hellas) <i>A. Kalyvas, Motor Oil (Hellas) Corinth Refineries S.A., Athens, Greece</i>	185
Software systems to optimize combined heat and power plant <i>J. Springell and D. Foster, Imperial Chemical Industries PLC, Billingham, United Kingdom</i>	192
SESSION VI: ROUND TABLE ON FINANCING ENERGY EFFICIENCY INVESTMENTS	
The financial engineering activity of the Commission <i>H. Carré and W. Faber, Directorate-General for Economic and Financial Affairs, Commission of the European Communities, Brussels, Belgium</i>	200
Accelerating discrete energy efficiency investments through third party financing <i>D. A. Fee, Principal Administrator, Energy Saving Division, Commis- sion of the European Communities, Brussels, Belgium</i>	204
A new source of finance for investments in energy savings <i>J. Junker, Bayerische Landesbank Girozentrale München, Federal Republic of Germany</i>	208

Financing investment in energy efficiency from the manufacturer's point of view

211

P. Kalyvas, Motor Oil (Hellas), Athens, Greece

DISCUSSION AND CLOSING SPEECH

Discussion	214
Closing speech	219
<i>M. Davis, Director, Directorate-General 'Energy', Commission of the European Communities, Brussels, Belgium</i>	

ZUSAMMENFASSUNGEN IN DEUTSCHER SPRACHE

Einführung	222
Prozeßintegration	223
Neue Techniken zur Rückgewinnung der Niedertemperaturwärme	226
Industrieanlagen—Prozeßüberwachung und Optimierung	231
Energiemanagement in Energieversorgungssystemen	235
Podiumsdiskussion über Finanzierungsquellen für Investitionen zur Verbesserung der effizienten Energienutzung	237

RESUMES EN LANGUE FRANCAISE

Introduction	242
Intégration des procédés	243
Nouvelles techniques de récupération de la chaleur basse température	246
Installations industrielles—Contrôle et optimisation des procédés	251
Gestion énergétique des utilités	255
Table ronde sur le financement des investissements d'efficacité énergétique	257

LIST OF PARTICIPANTS

INDEX OF AUTHORS	261
----------------------------	-----

INDEX OF AUTHORS	273
----------------------------	-----