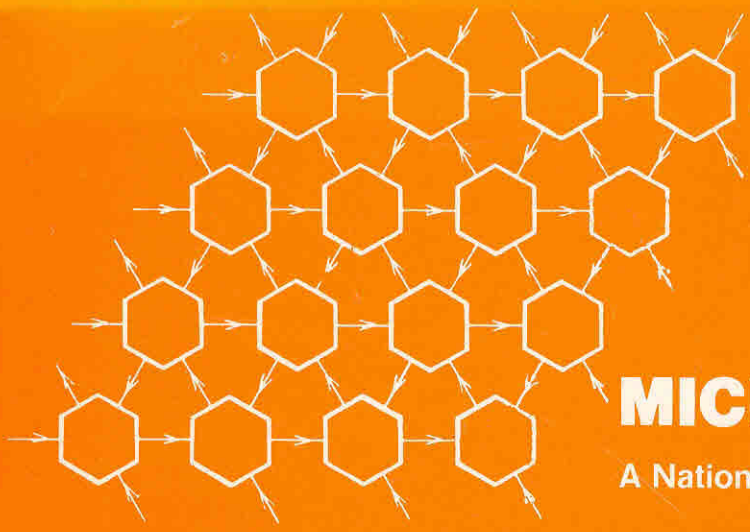

MICROELECTRONICS '82

A National Conference on Microelectronics

Adelaide, SOUTH AUSTRALIA, 12-14 May, 1982

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PREPRINTS OF PAPERS

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Preface

Within a year or two, it will be possible to fabricate 100,000 transistors on a single silicon chip. This VLSI (Very Large Scale Integration) era poses several key problems for researchers and for the microelectronics industry, as we move beyond the microprocessor era.

This Conference, the first national conference on the topic in Australia, brings together leaders in processing technology, computer-aided design, testability, packaging, and concurrent architecture.

Six invited papers will be presented by international leaders in the field. Thirty four papers, in all, will be presented; sixteen from overseas. In subsequent conferences, a higher proportion of Australian authors should occur partly as a result of the boost to the field from this conference.

The conference is particularly timely for Australia. In October 1981, the ASTEC committee submitted its report on microelectronics to the Prime Minister. Several teaching institutions introduced courses on VLSI design in 1982. The small local microelectronics industry is receiving more attention. CSIRO recently initiated its VLSI Programme. Industry at large is beginning to apply microelectronics more in products and processes.

All of these activities are helping Australians determine the country's posture for microelectronics in the mid-to-late 1980's.

J.C. MUDGE
Chairman
Programme Committee

SPONSORSHIP

The Organising Committee sincerely appreciate the generous sponsorship afforded it by the following organisations. This enabled an unusually large number of overseas speakers to be invited, greatly contributing to the Conference.

- Ansett Airlines of Australia
- Codan Pty. Ltd., South Australia
- C.S.I.R.O., Division of Computing Research
- Digital Equipment Corporation, U.S.A.
- Siemens Limited, Melbourne
- Siemens AG, West Germany
- South Australian Government (Department of Trade and Industry)
- Various unrecorded support for attendance of speakers and delegates.

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Invited Speakers

PROFESSOR JAMES H. CLARK, Department of Electrical Engineering, Stanford University, California, USA.
"Asychronous Timing Structures in a VLSI System"

MR W.R. DEMMER, Vice President, Engineering, Digital Equipment Corporation, Massachusetts, USA.
"Distributed Processing — A Significant VLSI Opportunity"

DR JOHN P. GRAY, Department of Computer Science, University of Edinburgh, U.K.
"Structured Design and Unstructured Implementation or Gate Arrays Revisited"

DR EGON HÖRBST, Head, VLSI Research, Siemens, Munich, Germany.
"Case Studies on the Interaction between Process Technology, Architecture and Design Methodology"

PROFESSOR CARVER A. MEAD, Chairman, Department of Computer Science, California Institute of Technology, Pasadena, USA.
"VLSI: The Next Revolution"

PROFESSOR RICHARD A. NEWTON, Department of Electrical Engineering, University of California at Berkeley, USA.
"An Integrated Design System for VLSI"

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