# RO-MICRO

28 iunie 2024, Brașov

https://www.ro-micro.com/

# Sorin Cismaș

*Opening Remarks*

*Remarci de Deschidere*

# Mihai Ivanovici

*The ROC integrated circuit for the ATLAS Experiment at LHC*

*Circuitul integrat ROC pentru Experimentul ATLAS de la LHC*

# George Toacșe

*The CoBra Inception*

*Cum a apărut CoBra*

# Vasile Prodan

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*CoBra: Concepție, Implementare, Producție*

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# Florin Marcus

*Computer History Museum, Arad*

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# Gheorghe M. Ștefan

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*Mașina Lisp: DIALISP*

# Cristian Baleanu, Dan Tomescu

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*Mașina S, o Architectură pentru Procesare Simbolică*

# Sorin Cismaș

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*De la CoBra la iPhone și Vision Pro*

# Sorin Cismaș

*Q & A*

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# Pauza de Cafea

# Federico Faggin

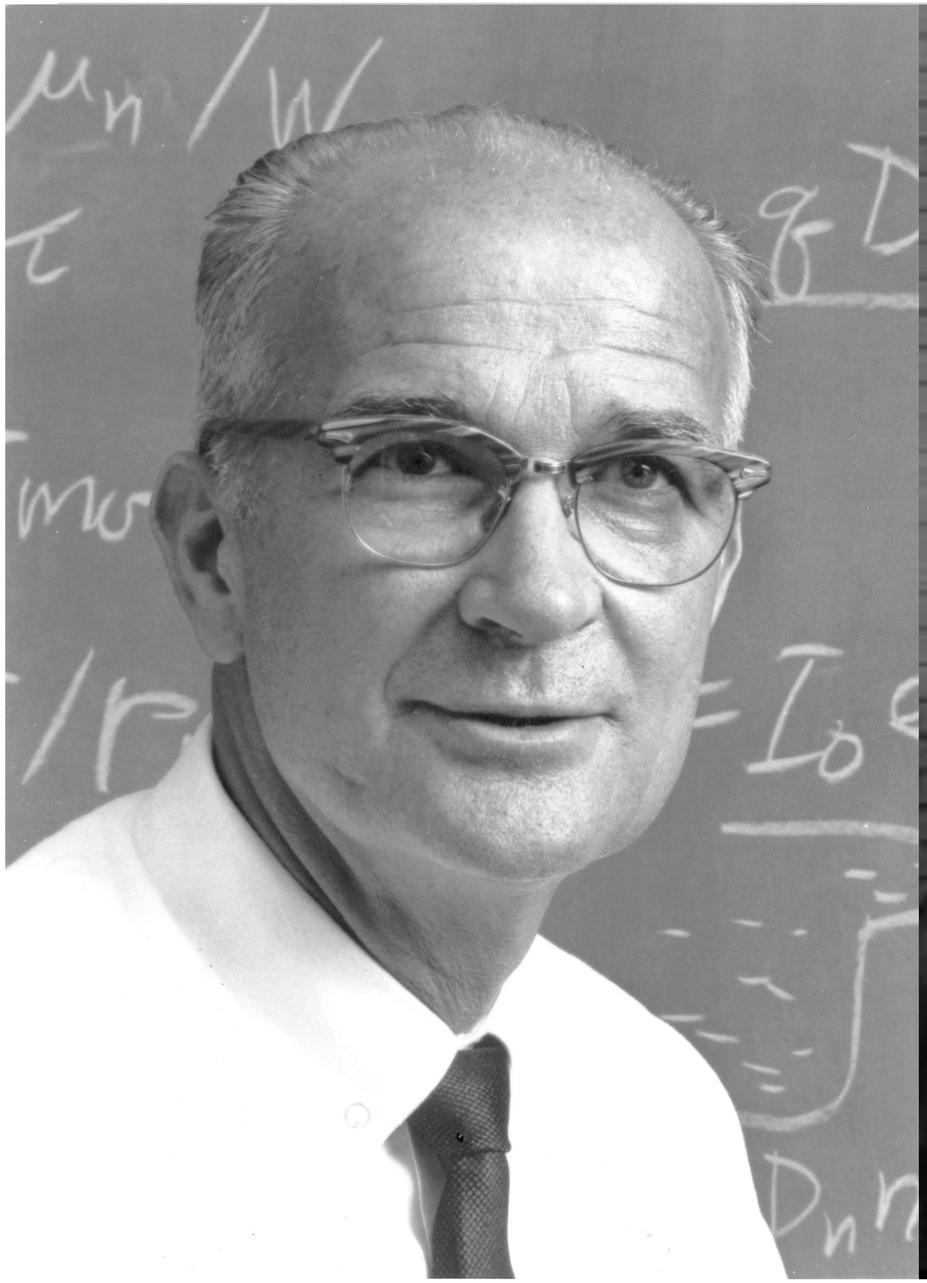
*Microprocessors, Touchscreens, Artificial Intelligence, and Consciousness*

# Federico Faggin

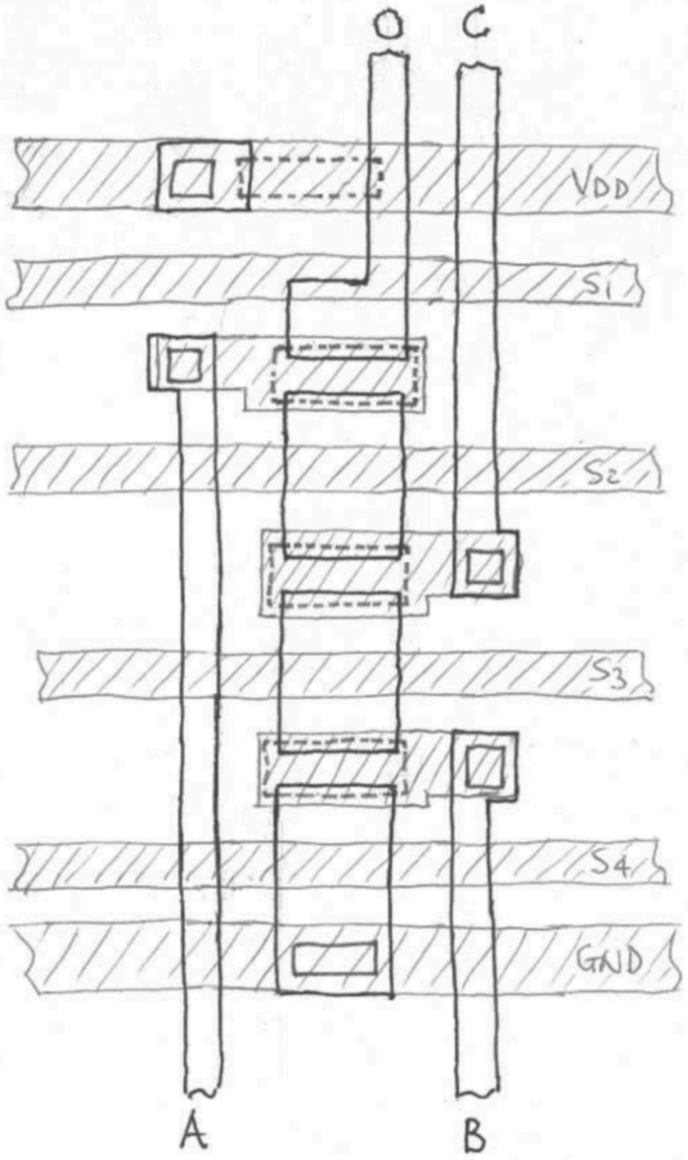
*Q & A*

*moderated by Sorin Cismaș*

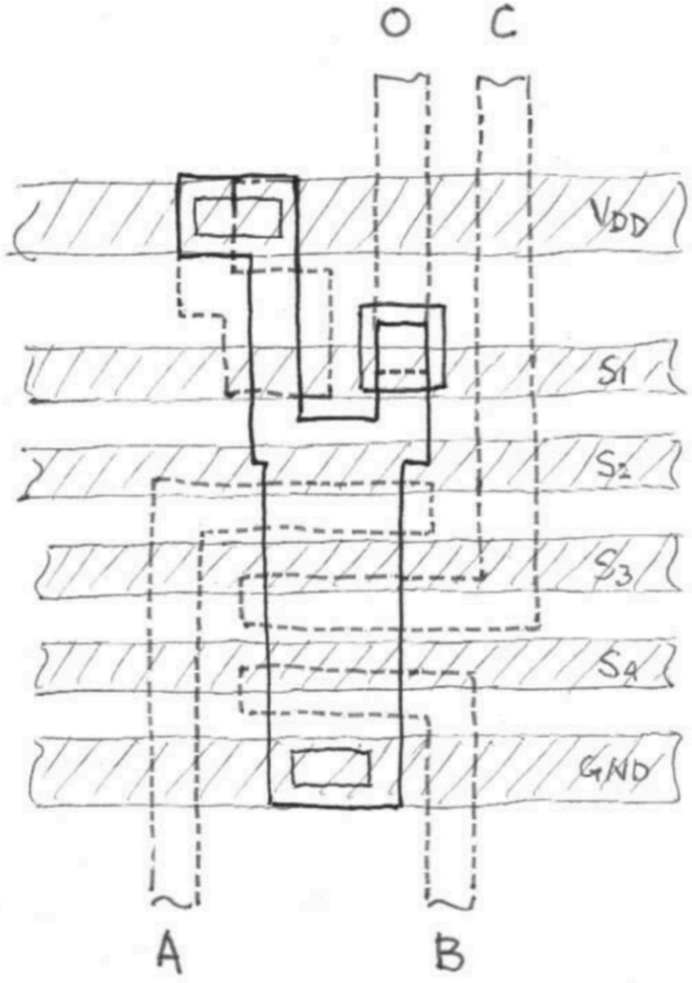
# Ro-Micro | William Shockley and the Traitorous Eight



# Ro-Micro | NAND3:  O = !(A & B & C) w/o and w/ SGT

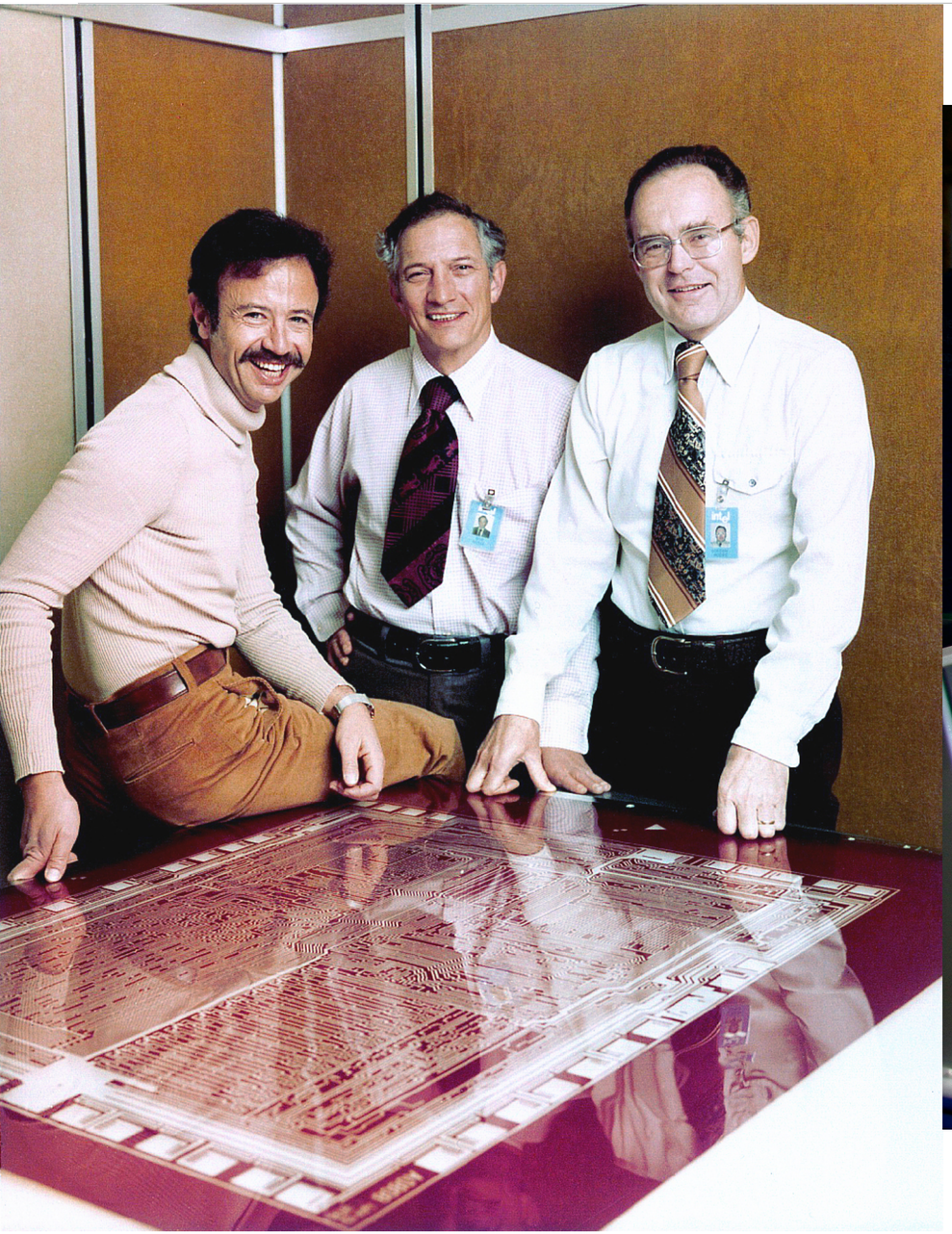


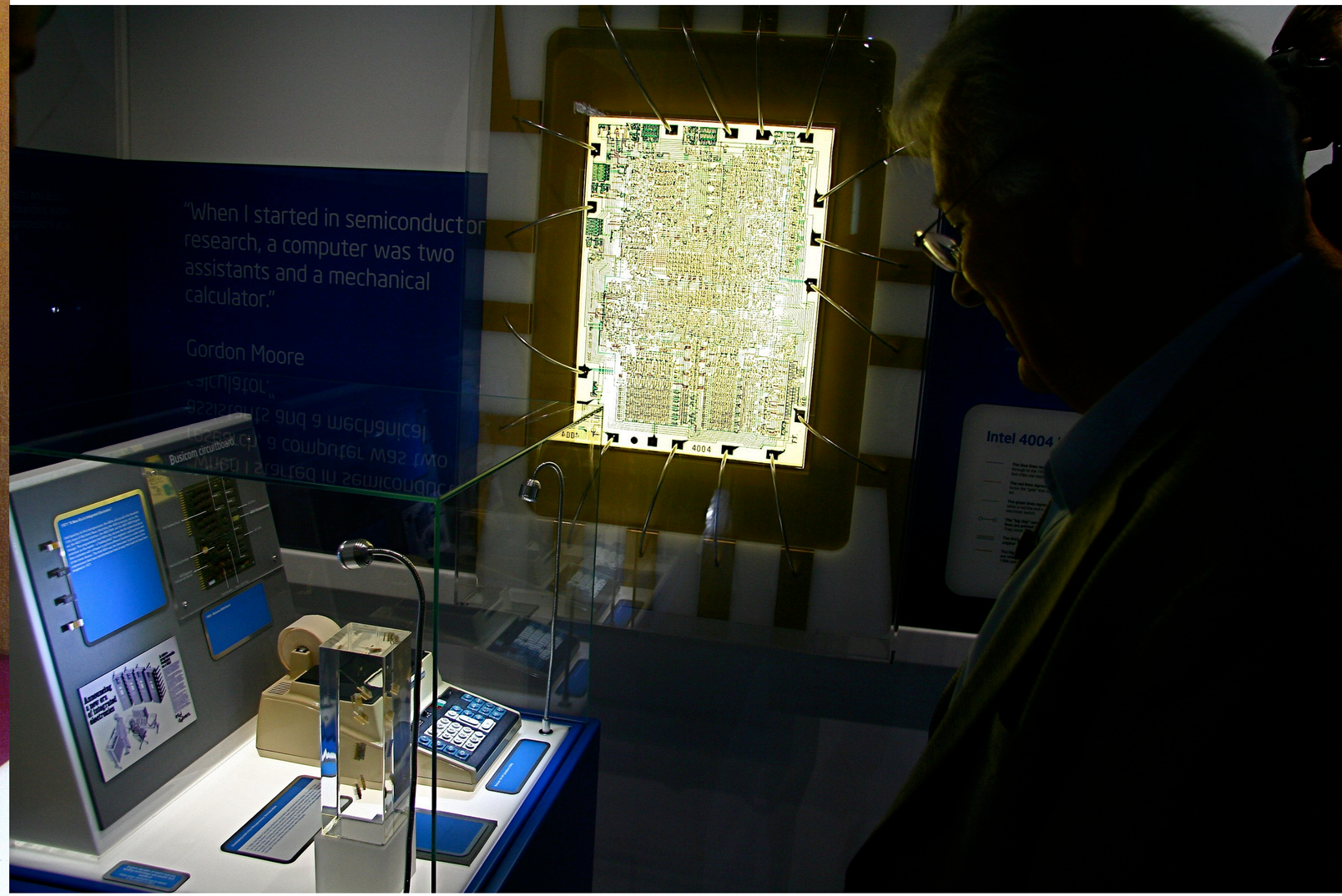

Aluminum Gate



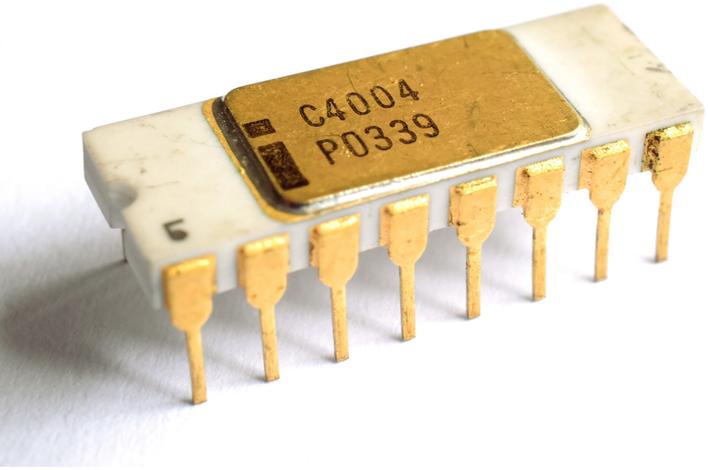

Silicon Gate

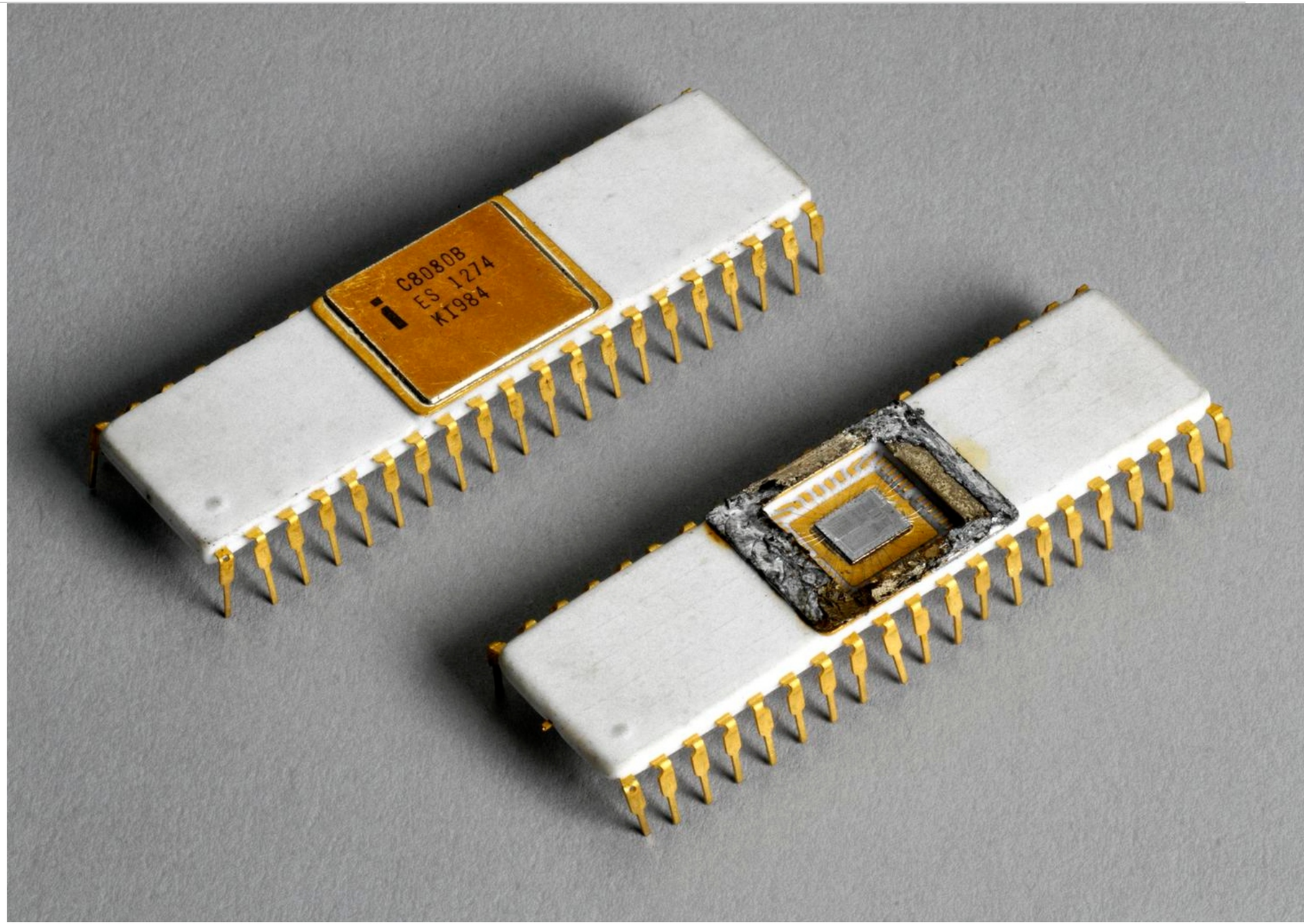
# Ro-Micro | Andy, Robert, Gordon and Federico



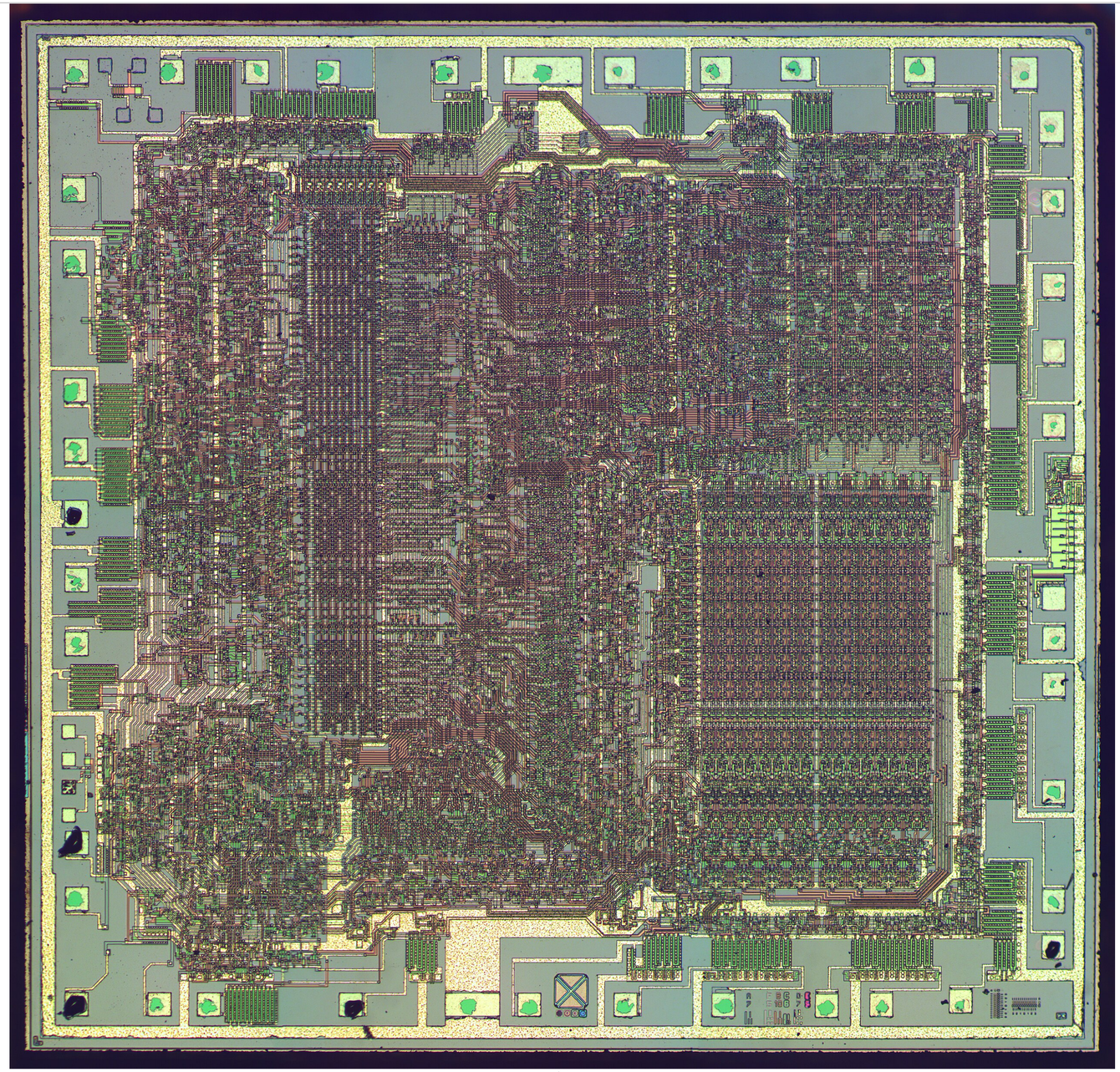


# Ro-Micro | Intel C4004 and 8080



# Ro-Micro | Zilog Z80

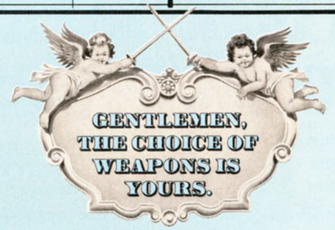


# Ro-Micro | May 1976 advertisement for Zilog Z80

# The Battle of the 80's

**Think of your next microcomputer as a weapon against horrendous inefficiencies, outrageous costs and antiquated speeds. We invite you to peruse this chart.**

| Features: | 8080A | Z80-CPU | Features: | 8080A | Z80-CPU |
|---|---|---|---|---|---|
| Power Supplies | +5, −5, +12 | +5 | Instructions | 78 | 158* |
| Clock | 2Φ, +12 Volt | 1Φ, 5 Volt | OP Codes | 244 | 696 |
| Standard Clock Speed | 500 ns | 400 ns | Addressing Modes | 7 | 11 |
| Interface | Requires 8222, 8228 & 8224 | Requires no other logic and includes dynamic RAM Refresh | Working Registers | 8 | 17 |
| | | | Throughput | Up to 5 times greater than the 8080A | |
| Interrupt | 1 mode | 3 modes; up to 6X faster | Program Memory Space | Generally 50% less than the 8080A | |
| Non-maskable Interrupt | No | Yes | *Including all of the 8080A's instructions. | | |




## Announcing Zilog Z-80 microcomputer products. With the next generation, the battle is joined.

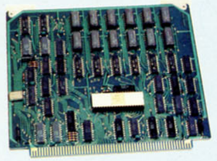
The Z-80: A new generation LSI component set including CPU and I/O Controllers.

The Z-80: Full software support with emphasis on high-level languages.

The Z-80: A floppy disc-based development system with advanced real-time debug and in-circuit emulation capabilities.

The Z-80: Multiple sourcing available now.

## Your ammunition: A chip off a new block.



A single chip, N-channel processor arms you with a super-set of 158 instructions that include *all* of the 8080A's 78 instructions with *total* software compatibility. The new instructions include 1, 4, 8 and 16-bit operations. And that means less programming time, less paper and less end costs.

And you'll be in command of powerful instructions: Memory-to-memory or memory-to-I/O block transfers and searches, 16-bit arithmetic, 9 types of rotates and shifts, bit manipulation and a legion of addressing modes. Along with this army you'll also get a standard instruction speed of 1.6 $\mu$s and all Z-80 circuits require only a single 5V power supply and a single phase 5V clock. And you should know that a family of Z-80 programmable circuits allow for direct interface to a wide range of both parallel and serial interface peripherals and even dynamic memories without other external logic.

With these features, the Z80-CPU generally requires approximately 50% less memory space for program storage yet provides up to 500% more throughput than the 8080A. Powerful ammunition at a surprisingly low cost and ready for immediate shipment.

## Mighty weapons against an enemy entrenched: The Z-80 development system.

You'll be equipped with performance and versatility unmatched by any other microcomputer development system in the field. Thanks to a floppy disc operating system in alliance with a sophisticated Real-Time Debug Module.

The Zilog battalion includes:

- Z80-CPU Card.
- 16K Bytes of RAM Memory, expandable to 60K Bytes.
- 4K Bytes of ROM/RAM Monitor software.
- Real-Time Debug Module and In-Circuit Emulation Module.
- Dual Floppy Disc System.
- Optional I/O Ports for other High Speed Peripherals are also available.
- Complete Software Package including Z-80 Assembler, Editor, Disc Operating System, File Maintenance and Debug.

## On standby: Software support.

All this is supported by a contingent of software including: resident microcomputer software, time sharing programs, libraries and high-level languages such as PL/Z.

## On standby: User support.

Zilog conducts a wide range of strategic meetings and design oriented workshops to provide the know-how required to implement the Z-80 Microcomputer Product line into your design. All hardware, software and the development system are thoroughly explained with "hands-on" experience in the classroom. Your Zilog representative can provide you with further details on our user support program.

## Reinforcements: A reserve of technological innovations.

The Zilog Z-80 brings to the battlefront new levels of performance and ease of programming not available in second generation systems. And while all the others busy themselves with overtaking the Z-80, we're busy on the next generation—continuing to demonstrate our pledge to stay a generation ahead.

The Z-80's troops are the specialists who were directly responsible for the development of the most successful first and second generation microprocessors. Nowhere in the field is there a corps of seasoned veterans with such a distinguished record of victory.

Signal us for help. We'll dispatch appropriate assistance.

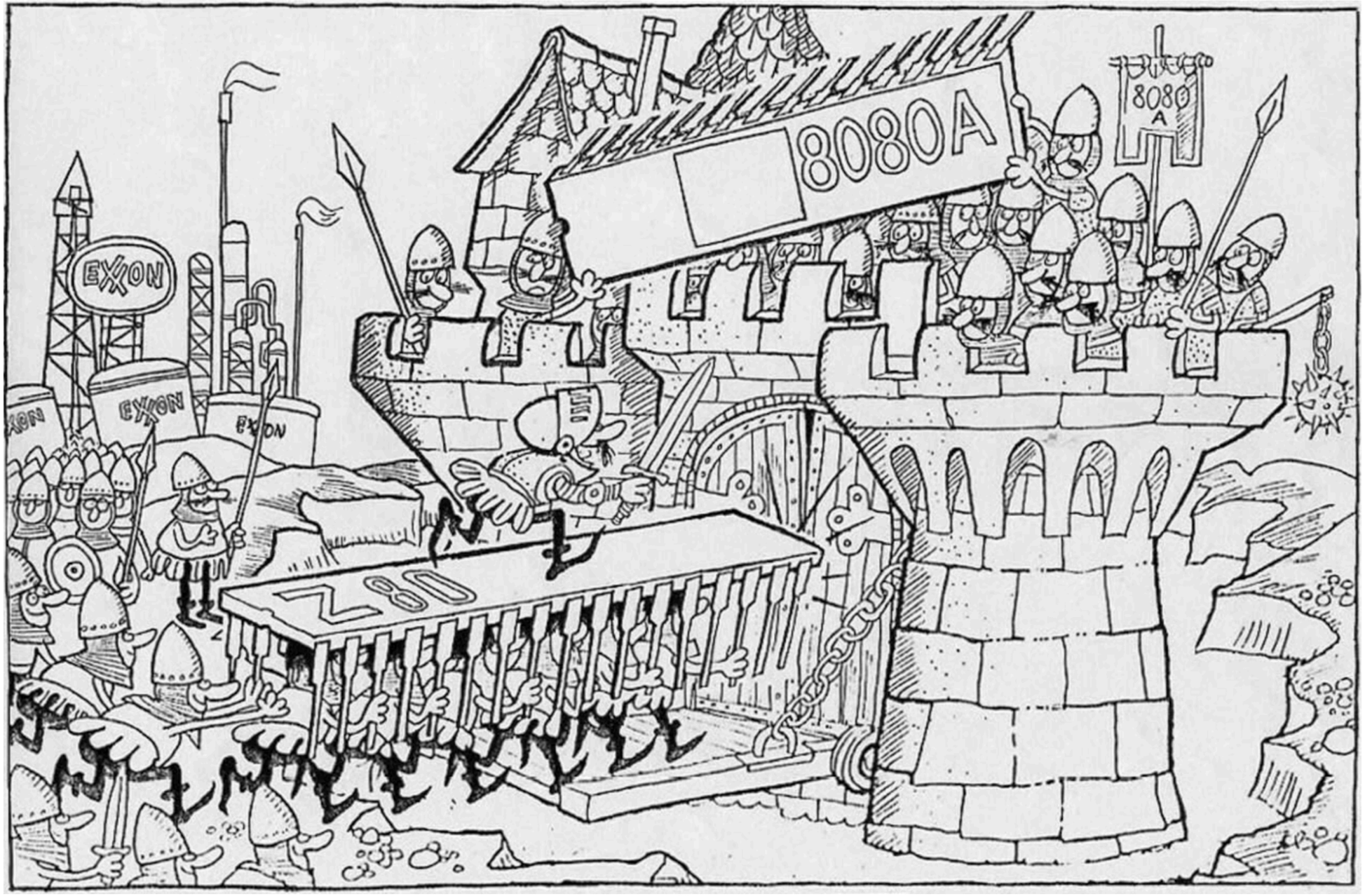
**Zilog** MICROCOMPUTERS

170 State Street, Los Altos, California 94022
(415) 941-5055/TWX 910-370-7955

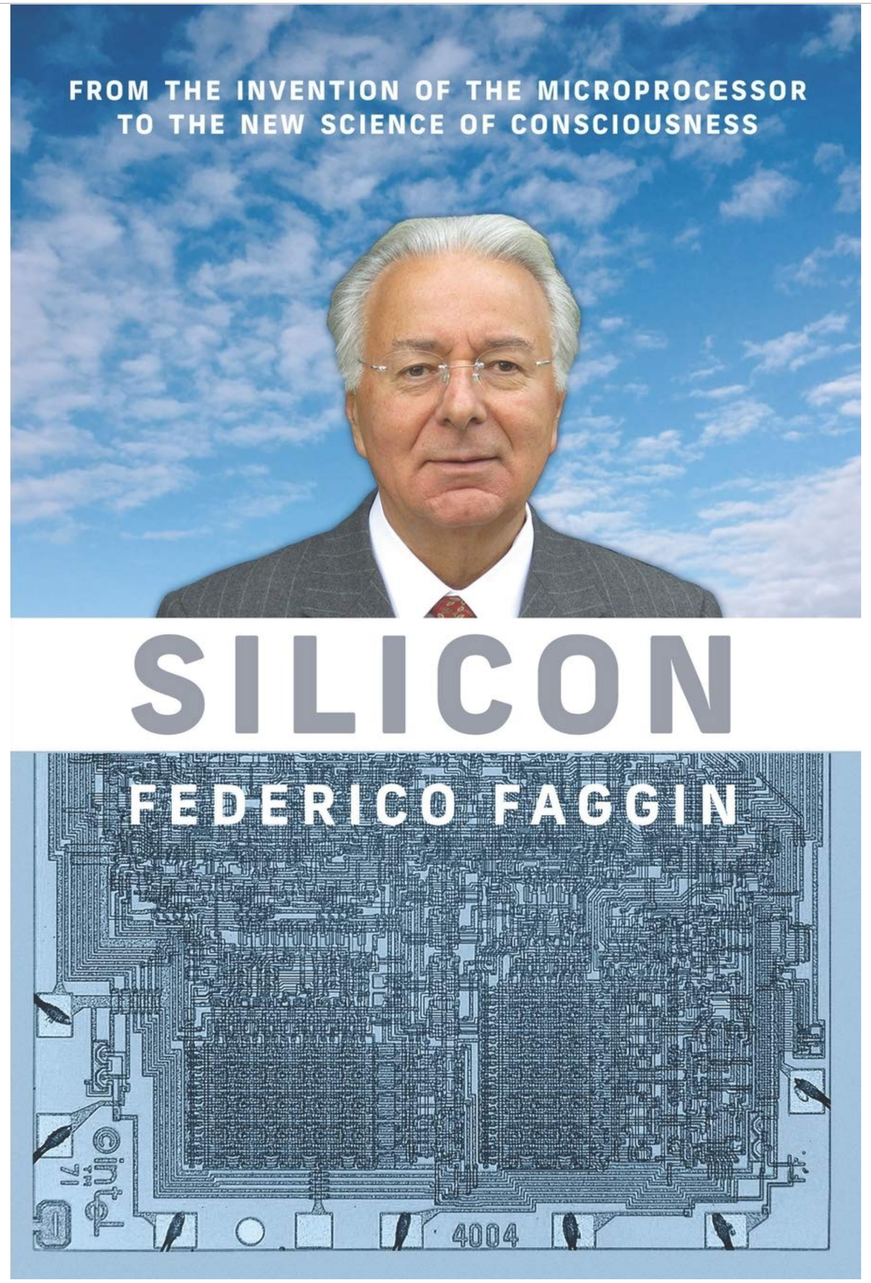
Circle 33 on reader service card

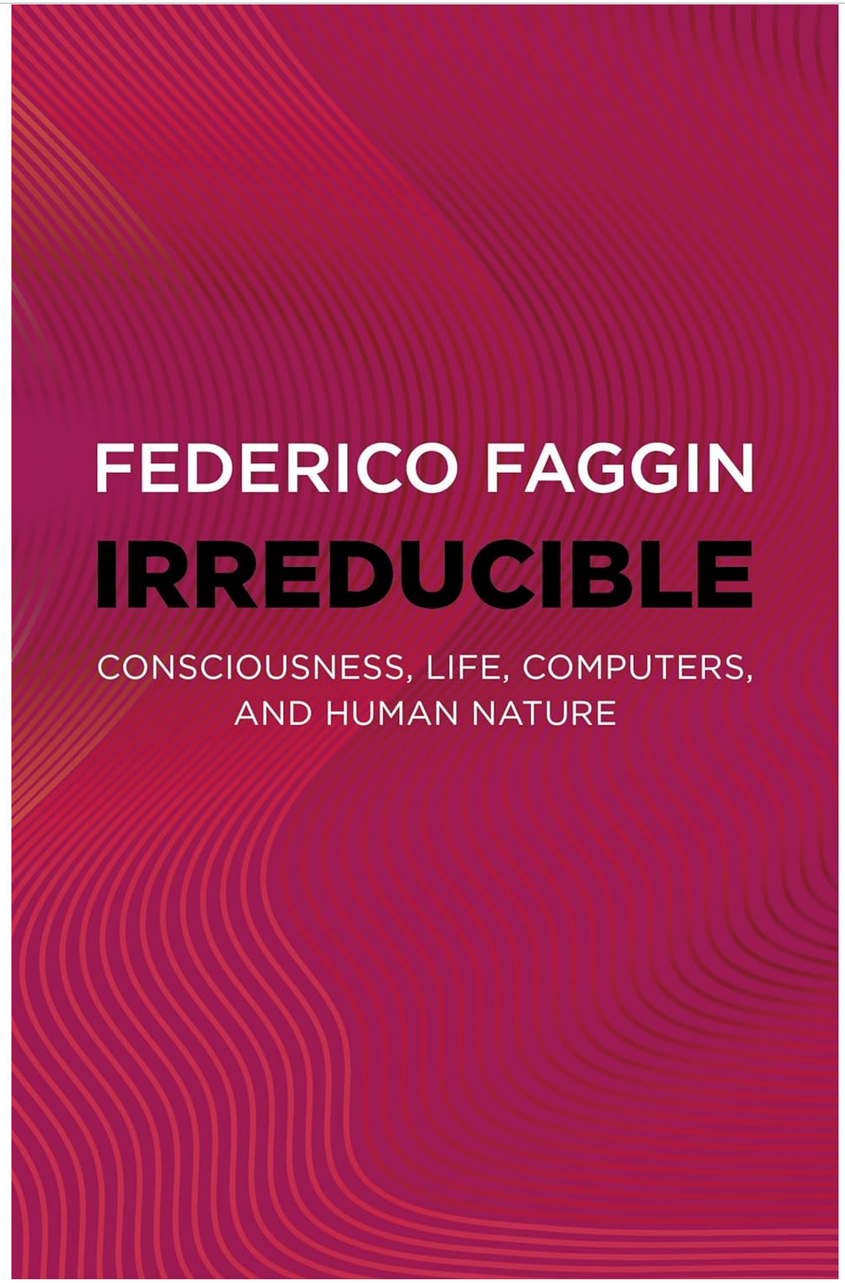
AN AFFILIATE OF EXXON ENTERPRISES INC.

# Ro-Micro | Zilog's siege on Intel's 8080A castle



# Ro-Micro | Silicon and Irreducible



# Federico Faggin

*book signing*

*semnare de carte*

# Reception

# Recepție