

CHEMICAL HERITAGE FOUNDATION

JOHN D. MACDOUGALL

Transcript of an Interview
Conducted by

Christophe Lécuyer

at

By telephone (Macdougall in Westboro, Massachusetts)

on

7 March 2005

(With Subsequent Corrections and Additions)

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ABSTRACT

John D. Macdougall begins the interview with a summary of his graduate and doctoral work. In 1966 Macdougall began working at Sprague Electric Company in the research and development department with ion implementation. He built a permanent magnet velocity filter and scanning system upon arriving, which aided in implanting uniformly over the wafer. The second implanter machine he built at Sprague used parts supplied by Accelerators, Inc. Macdougall contributed to work on PNP transistors, working on implants for beta control. He also implanted TTL circuits and linear circuits and aided in the developmental progress of MOS [metal oxide semiconductors] to MOSFETS [metal oxide semiconductor field effect transistors]. He also worked on device characterization and MOS for two military R&D contracts. He worked on a threshold adjust technique, which Robert Palmer created a use for. Macdougall eventually moved to the Worcester facility, before Sprague was sold to General Cable. Macdougall served as a consultant for Sprague until the semiconductor research group dissolved in 1975. He then moved on to engineering management at the Worcester facility of General Cable.

INTERVIEWER

Christophe Lécuyer is research historian at the Chemical Heritage Foundation. He holds a Ph.D. in history from Stanford University. He has published extensively on manufacturing districts, university-industry relations, and the history of electronics and scientific instrumentation. He was a fellow of the Dibner Institute for the History of Science and Technology and taught at MIT, Stanford University, and the University of Virginia.

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