



History of Semiconductor Engineering

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When basic researchers started working on semiconductors during the late nineteen thirties and on integrated circuits at the end of the nineteen fifties, they did not know that their work would change the lives of future generations. Very few people at that time recognized the significance of, perhaps, the most important invention of the century. Historians have assigned the invention of integrated circuits to Jack Kilby and Robert Noyce. In this book, the author argues that the group of inventors was much larger. This richly illustrated account is a personal recollection of the development of integrated circuits and personalities – such as Russell Ohl, Karl Lark-Horovitz, William Shockley, Carl Frosch, Lincoln Derick, Calvin Fuller, Kurt Lehovec, Jean Hoerni, Sheldon Roberts, Jay Last, Isy Haas, Bob Norman, Dave Allison, Jim Nall, Tom Longo, Bob Widlar, Dave Talbert, Frank Wanlass, and Federico Faggin. Here is the first comprehensive behind-the-scenes account of the history of the integrated circuit, the microelectronics industry, and the people closely involved in the development of the transistor and the integrated circuit.

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Reviews

"Your book is going to make a major contribution to semiconductor history. You and I agree that, while the world loves a hero, semiconductor progress depended on the efforts and ideas of a large number of people, and that moving forward depended on contributors going back a few decades in some cases. Also, as is the case with most inventions, a number of people with

access to the same pool of common knowledge were working independently at the same time to put it all together and to make the necessary extensions to the existing technology and who realized that the time was right for society to accept the new concepts. Your diligent research points all this out."

Dr. Jay Last, former Shockley Laboratories employee, co-founder of Fairchild Semiconductor, co-founder of Amelco Semiconductor, and manager of the Fairchild's group which design and produced the world first planar integrated circuit

"Bo Lojek presents a remarkable document of the most important and significant technical development of our times. He describes in astounding detail the engineering efforts of modern microelectronics. He concentrates on the history of silicon semiconductor devices. California's "Silicon Valley" is the center of attention, together with its ancestry of transistor invention at Bell Laboratories. He has collected a wealth of illustrative documentation, gives incisive insight into the lives of the main actors and shows the often tragic fates of the engineers and businessmen. He does not hide his firm believe in the individual engineer and warns of the retarding influence of present-day political correctness."

Dr. Hans J. Queisser, former Shockley Semiconductor scientist and retired director of the Max-Planck-Institute for Solids, Stuttgart

"The technical history of the semiconductor industry rivals the 1849 California Gold Rush as a period filled with excitement and opportunity. Although I cannot first hand validate its complete accuracy, I enthusiastically encourage you to read the collected facts, opinions, and views of an author who was actually part of this amazing period, viewing it as a successful practicing Engineer during this "gold rush" like hey-day of the semiconductor industry. For educators and technologists you will find this collection of data, facts, and opinions, collected and observed first hand by the author, fascinating! It is a tough read for others due to the writing experience of the author and its technical focus."

John F. Gifford, former Fairchild Semiconductor Marketing Manager of Linear Integrated Circuits, co-founder of Advanced Micro Devices, and President and Chief Executive Officer of Maxim Integrated Products

"Bo Lojek gets it right! There are few industries as dynamic as semiconductors and the history of the semiconductor industry is still unfolding. This book gives history of the people, places and the technology that resulted in today's semiconductor industry. I particularly like the inclusion of many technical pieces in the book."

Robert Dobkin, former National Semiconductor Director of Advanced Circuit Development and co-founder and Chief Technical Officer of Linear Technology Corporation

"This book contains an enormous amount of important material, much of it obtained by intense individual research by the author. The author's viewpoint leads him to different stories and credits from those generally accepted by the media. This feature may make the book more interesting reading for some. However, its real value is as remarkably detailed account of accomplishments that constitutes semiconductor microelectronics."

Dr. Morgan Sparks, Former Bell Laboratories scientist, designer of the world's first junction transistor, and retired president of Sandia Laboratories