

1959**Invention of the planar IC****(Robert Noyce, Fairchild Semiconductor, U.S.A.)****~ Integrated Circuit ~**

Fairchild's Robert Noyce devised the basic concept of IC based on planar technology on January 23, 1959, almost half a year behind Jack Kilby's invention (July 1958). Even though Noyce was behind Kilby, the invention of Noyce included basic elements indispensable for the realization of today's IC. That is, even though the ideas of both Kilby and Noyce were the same in that all the circuit components were mounted on one semiconductor base, the implementations were entirely different. Kilby bonded thin wires to connect the parts. On the other hand, the Noyce's method was called a planar method, and the interconnection between the elements was performed with an aluminum thin film deposited and formed as the interconnect on silicon dioxide. Although Kilby's method showed the basic principle of IC, from the viewpoint of practical use, the method of Noyce had remarkably higher value. They both claimed their rights by patent applications. Is the inventor of IC Kilby or Noyce? Over the next ten years the court struggle continued over attribution of the patent rights. After such a fierce dispute, as a result of a summit meeting by the top executives of TI and Fairchild, it was settled as such that the patents of the IC invention were shared by Kilby and Noyce.

Noyce later left Fairchild together with Gordon Moore and others and established Intel (1968), pioneering product areas that are the basis of today's semiconductor industry such as memories and microprocessors, and he left with him a great achievement.