

■ From Bingo Only one & No.1

The semiconductor circuit which made full use of nano technology

SUNSAY Industries Co., Ltd Shingai-cho Fukuyama-city

SUNSAY supports electric appliances and a car.

IC chip that embedded in a new driver's license, the flash memory inside a mobile phone, charge-coupled device (CCD) that a digital camera detects light. SUNSAY has a monopolistic share with some of equipment which manufactures these semiconductor devices. Apparatus which bears the prime etch process. This company has supplied the ten or more major company of a world higher rank in and outside the country in the semiconductor manufacture industry.

Semiconductor devices are electronic components indispensable to electric appliances or a car. The president (41 years old) said proudly, "There is a product with the semiconductor made using the equipment of our company surely equipped at every home."

Etching is the important process of forming a circuit on the substrate of a semiconductor device. The electric wave of high frequency is added to plasma-like gas, initiate a chemical reaction, the film of a substrate face is shaved, and the conducting wire portion of a circuit is produced. The more the width is thin, the devices can miniaturization, and the more leads to the increase in a storage capacity, or improvement in throughput.

SUNSAY has competed in development of plasma generation equipment and high frequency apparatus for a world tip with a U.S. major company. At the moment, by the memory of the maximum storage capacity, the width of a circuit line is about 60 nm. (1 nm is 1 meter of 1 billion parts.) By the experimental stage, it succeeded also in development of the equipment pulled by 45-nm thinness as well as the technology which draws the circuit line.

The president was manufacture of the semiconductor of a major company, and the equipment maker's former researcher. In 1995, the semiconductor section was established in the clothing manufacture company which a father-in-law performs. "The equipment which an electric wave is not confused immediately after switching on a power supply." The request received from the customer at the time of being a researcher was a springboard. Time bewildered by work in different field. "I get people to make my work. I have to respond to reliance." And, it was devoted to research again.

The disorder of an electric wave was the big hindrance for the micro fabrication of a nano level. The president succeeded in controlling adjustment of the voltage of the

equipment depending on manual labor, etc. by a microcomputer. The product was made over one year. Development costs exceeded 100 million yen and the savings of them were also lost.

The equipment which an electric wave is not confused at the time of startup received high evaluation. It was more niceties and the order from the major company which aims at mass device development entered. "Reliance is obtained in response to a difficult order. I go to some length to research." The president continues challenging the tip in the world of the nano supporting an electrification life.

Environment is also considered. Reuse promotion

■ From Top President Sugimoto (41 years old)

Development of the latest semiconductor fabrication machines and equipment resembles manufacture of F1 car. Although the world of the race which vies in the fastest is distantly related to an everyday life, the technology which is useful also for a common passenger car in competition is born. And, it spreads soon. As a company which leads others, it is gearing up also in the measure of the environmental side.

The water for cooling of equipment is circulated and is re-used. The carton box for shipping products is made into solid color so that it may be fit for reproduction. A measure, such as using the shock absorbing material which is made of corn, is advanced.

« Company brochure »

SUNSAY inaugurated an enterprise as the clothing manufacturing industry in Kusado-cho, Fukuyama-city in 1984. President Sugimoto established a semiconductor section in 1995. And, SUNSAY devote oneself to the section from 1998. The head office is a present location from 2005. The company has two factories in the city. There are 45 employees. The capital fund is 10 million yen. Sales volumes of financial year ending March 2006 are about 460 million yen, and the price of a working profit is about 145 million yen.

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