Article Summary

In 1987, Asahi Kasei was awarded the Ōkōchi Memorial Production Prize for the development and mass production of high-sensitivity indium antimonide (InSb) Hall elements.

社報あさひ

当社の研究開発が相次ぐ受賞

高感度インジウム・アンチモンホール素子の開発と量産化

大河内記念生産賞

Article Details

April 1, 1988

Our R&D Efforts Receive a Series of Prestigious Awards

Four outstanding technologies developed and commercialized by our company have recently garnered significant attention and high praise from external organizations. This spring, these technologies were recognized and awarded by academic societies and associations. We are pleased to present an overview of the awarded R&D themes, the purpose of each award, the achievements resulting from the research and development, and comments from the representatives who received the honors.

Development and Mass Production of High-Sensitivity Indium Antimonide Hall Elements
Ōkōchi Memorial Production Prize

Our company's "Development and Mass Production of High-Sensitivity Indium Antimonide Hall Elements" was selected as a recipient of the 1987 Ōkōchi Memorial Production Prize, which is awarded to researchers and organizations that have achieved outstanding results in the fields of production engineering and technology.

This prize was established in 1954 to commemorate the achievements of the late Dr. Masatoshi Ōkōchi, former director of the Institute of Physical and Chemical Research (RIKEN). It is awarded annually to individuals and companies, and this year marks the 34th presentation. The award ceremony was held on March 11 at the Japan Industrial Club in Marunouchi, Tokyo, where twelve projects across four categories were honored.

Our company received the award in the category recognizing organizations with notable inventions and innovations. The award was presented to Asahi Kasei, with the lead researcher being Mr. Kohei Nonaka, Vice President of Asahi Kasei Electronics. His co-researchers included Mr. Ichiro Shibasaki, Deputy Director of the Electronic Components Development Office, Mr. Kenzo Harada, Plant Manager of the Asahi Kasei Electronics Nobeoka Factory, Mr. Yosuke Miyabe, Sales Director, and Mr. Shiro Hiruta, Senior Manager of the Technical Policy Office.

Mr. Nonaka and his team established an industrial technique for producing thin films of indium antimonide with high electron mobility and high sheet resistance using vacuum deposition. They developed a Hall element with a sandwich structure, placing this thin film between layers of strongly magnetic ferrite.

As a result, the Hall element features high input resistance, can be driven by constant voltage input, has excellent temperature characteristics, high sensitivity, and low power consumption. These attributes make it ideal for miniaturization and mass production, and it has been widely

adopted in motors for devices such as record players, microcassettes, and VTRs, significantly improving their performance.

Mr. Nonaka commented:

“This project began in 1974 in the AGF Development Department and has now reached an annual production volume of 200 million units. It has become an essential component in motors for VTRs, floppy disks, and other office automation equipment. I am deeply moved by this achievement. As a business now generating ¥3 billion in annual sales, I feel the heavy responsibility of ensuring stable production, cost reduction, and delivery management. Despite facing numerous challenges over the years, we overcame them thanks to the dedicated efforts of our factory, sales, and administrative teams, as well as the sincere cooperation of our direct employees in Nobeoka, including retirees. I am also deeply grateful for the support and guidance of our users. Upon receiving this award, we were praised for enabling the practical application of so-called Hall motors for rotational control through the emergence of this sensor. This recognition has renewed our commitment to further develop this work and create even more outstanding new products.”