PRESS RELEASE

JAPAN ENERGY/NIMTEC AND IMEC ANNOUNCE COLLABORATION ON ADVANCED METAL/SILICIDE PROCESSES

Tokyo/Leuven, July 1, 2000 - Japan Energy/NIMTEC and IMEC have today announced their agreement to work together on the research and development of advanced metallization techniques, used for the production of state-of-the-art silicon device structures and circuits; in particular, copper/low-k and silicide technology.

As advanced IC structures approach and cross the 100nm barrier, the metallization schemes needed to manufacture these technologies become ever more challenging. Materials and process innovation are required to support the introduction and on-going development of copper inter-connects, barrier layers, as well as materials for advanced silicide and salicide processes.

Japan Energy/NIMTEC and IMEC have agreed on a collaboration to work together, in the research and development of metallization and silicides, for application to advanced silicon manufacturing process technology. This work will also be in support of IMEC's industrial affiliate programs concerning copper/low-k and silicide technology.

As part of this agreement, Japan Energy/Nimtec will produce a new range of high purity PVD materials, which will be used by IMEC for their advanced silicon process development work. The materials include, high purity copper, tantalum, cobalt, and innovative alloys such as cobalt-titanium.

Commenting on the new agreement, Mr. Shin-Ichi Igata, General Manager of Japan Energy's, Electronic Materials Division said that, "The materials technology strength of Japan Energy, stems from it's close working relationship with advanced process development centers around the world. We recognize the excellent contribution IMEC makes to silicon process technology, and we believe that this agreement will provide valuable information for the on-going development of our leading edge metal products." Dr Karen Maex, Leader ITS group at IMEC, says that, "Japan Energy is well known for its ability to develop leading edge technology for the electronics industry. This collaboration will provide an important contribution to our process development work."

IMEC was founded in 1984 and today is Europe's leading independent research center for the development and licensing of state-of-the-art microelectronic technologies. IMEC is headquartered in Leuven, Belgium, and employs about 900 people, of-whom 7 5 percent are highly qualified scientists and engineers. Its $90 million revenue is derived from agreements and contracts with government agencies, aerospace and semiconductor industry companies worldwide. IMEC'S activities concentrate on design of integrated information and communication systems; silicon process technology; silicon technology and device integration; micro-systems, components and packaging; advanced training in microelectronics. IMEC has a 4800 m2 200-mm pilot line and is ISO 9001 certified. News from IMEC is located at www.imec.be.

Japan Energy Corporation is one of Japan's leading integrated suppliers of energy. It's operations encompass exploration, development, refining and marketing for a product portfolio which ranges from petroleum to sophisticated metal products used in high technology sectors, such as the electronics industry. The Japan Energy group consists of 210 subsidiaries and 92 affiliates, including the world's leading supplier of non-ferrous metals. Reported annual sales revenue in the year ended March 1999 was US$ 14 .4 billion.

The company was founded in 1905, as Nippon Mining, and throughout the past century, has been a pioneer in the field of materials technology. Today, through it's subsidiaries of NIMTEC Inc. and Nikko Materials Limited, Japan Energy delivers a broad array of electronic materials products to the semiconductor, data storage, and display industries. Through its dedication to the pursuit of high technology and product excellence, the company has become a world leader in the development of high purity metal products.

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About Nikko Materials

Nikko Materials is a recognized leader in the field of high purity metals and wafers used in the microelectronics and communications industries.

Nikko Materials offers a wide variety of sputtering targets for the manufacture of semiconductors, data storage devices and optical films.

In addition to these products, Nikko Materials offers InP and CdTe wafers used for compound semiconductor and IR sensor application

Nikko Materials is a subsidiary of Japan Energy Corporation, a widely diversified company active in petroleum products, non-ferrous metals and electronic materials.

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