

Semiconductor International

Industry News

Late Breaking News

•National Opens 200 mm Fab

National Semiconductor Corp. opened a 575,000 ft² fab in South Portland, Maine. According to National, the \$932 million facility is the largest industrial investment in Maine's history. The facility will employ 900 people in the production of 200 mm wafers with 0.35 μm geometries, with 0.25 μm capability expected by mid-1998.

•Powerchip to Start Production in 1998

Powerchip Semiconductor Corp. will begin producing 3 million 64Mb DRAMs per month during the first quarter of 1998, according to company officials. Powerchip is a joint venture between Mitsubishi Electric Corp. (Tokyo, Japan) and the Umax Elite group (Taipei, Taiwan). It will invest 12 billion New Taiwan dollars (\$US 431 million) to increase monthly production capacity at its plant in Hsinchu, Taiwan, from 15,000 to 25,000 wafers.

•ROSS, Fujitsu Enter Viper Development Pact

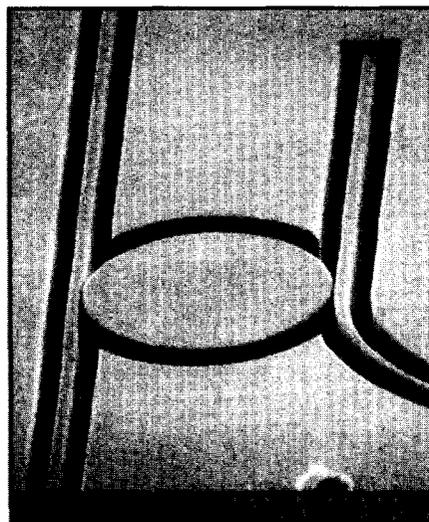
ROSS Technology Inc. (Austin, Texas) and Fujitsu Ltd. (Tokyo, Japan) entered into a development agreement for Fujitsu's 64-bit SPARC microprocessor effort, code named "Viper." Under the agreement, Fujitsu will provide \$34.5 million in nonrecurring engineering funding, and the companies will jointly own or exchange intellectual property. The agreement will last through April 1999 and includes a tape-out target date of March 31, 1998, for the "Viper" microprocessor design.

•TI and Vanguard Sign Cross-Licensing Agreement

Texas Instruments (TI, Dallas, Texas) and Vanguard International Semiconductor Corp. (VIS, Hsinchu, Taiwan) have reached a 10-year, worldwide semiconductor cross-license patent agreement, to run until 2007. Under the agreement, TI and VIS will have the use of each other's patents involved in making semiconductor products. TI will receive royalty payments throughout the agreement.

Northwestern University Develops Breakthrough in Nanoscale Photonics

A team of researchers at Northwestern University has constructed a nanoscale photonic resonator for use in photonic integrated circuits. The AlGaAs/GaAs device, called a "nanoscale waveguide-coupled microcavity resonator," was fabricated at the Cornell Nanofabrication Facility (Ithaca, N.Y.). The figure shows the 10.6 μm dia. disk resonator with input and output waveguides. The waveguides are 0.5 μm wide, and the space between each of the waveguides and the disk is 0.1 μm .



Photonic resonator controls coupling between two waveguides. The minimum feature size is 0.1 μm .

It has a Q factor of about 10,000 and can be controlled electronically to switch or modulate a stream of photons. Along with the nanoscale semiconductor laser that the team has already made, nanoscale photonic integrated circuits can be made that are 1000 times smaller than those currently in use, which should be cheaper to fabricate and more efficient to use.

The findings by the research group headed by Seng-Tiong Ho, associate professor of electrical and computer engineering at Northwestern's Robert R. McCormick School of Engineering

and Applied Science, were presented at the Annual Conference on Lasers and Electro Optics (CLEO Conference) in Baltimore on May 22, 1997, and will be published in a forthcoming issue of Optics Letters.

The first practical application of the nanoscale photonic integrated circuits is expected to be for wavelength division multiplexing (WDM) fiber-optic communications networking.

U.S. Integrated Optics (USIO, Seattle, Wash.) has the exclusive rights to the technology. Stamford International Inc. (Toronto, Canada) aquired an option to purchase a 60% interest in USIO and currently owns 40.2% of its issued and outstanding shares. JB

U.S. and European Chip Manufacturers Condemn Dumping

At a joint meeting on trade issues in Brussels, both U.S. and European semiconductor manufacturers announced their opposition to dumping and urged strong enforcement of anti-dumping rules in the WTO-GATT Agreement. The U.S. Semiconductor Industry Association (SIA) and the European Electronic Component Manufacturers Association (EECA) also urged their respective governments to vigorously reaffirm their commitment to maintain strong international deterrents against dumping.

"Both of our industries were significantly damaged by dumping in the 1980s and 1990s," said Dr. Enrico Villa, general manager of SGS-Thomson and chairman of the European Semiconductor Council. "Because of the enormous fixed capital costs in semiconductor manufacturing and R&D expenditures, the threat of renewed dumping continues to be a crucial issue for our industries. As a result, it is critical that the U.S. and the European Union retain strong and effective laws to combat dumping consistent with the rules of the World