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BOC Edwards and IMEC Announce Joint Technology Program on Supercritical Carbon Dioxide Processing

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SAN FRANCISCO--(BUSINESS WIRE)--July 12, 2004--BOC Edwards announced today it has established a joint development program with IMEC, a leading independent nanoelectronics and nanotechnology research center in Leuven, Belgium. The program focuses on the application of supercritical CO2 (scCO2) cleaning processes for the manufacture of next-generation semiconductor devices. BOC Edwards, a major supplier of subsystems and materials for electronics manufacturing, has shipped an integrated supercritical CO2 processing system, including its DFP 200 high-pressure, single-wafer process module to IMEC. This supercritical CO2 technology demonstrator will be used in a three-year process development program.

The application of scCO2 for all process steps where the use of water needs to be avoided will be assessed. The program will start with the investigation of the use of scCO2 for the cleaning of advanced porous low-k materials.

> "Supercritical CO2 is a promising technology for several sub-45nm process steps. This collaboration with a leading supplier of semiconductor process-enabling subsystems, is a valuable part of our sub-45nm CMOS research programs in which we investigate all the major process steps to continue scaling of CMOS"

"Focusing on the unique integration options afforded by supercritical CO2 with a well-respected research center like IMEC is an important step in realizing the potential of this enabling technology," said Chris Case, BOC Edwards' chief technology officer. "This collaboration will build from a baseline of state-of-the-art process technology, and help us to understand the range of applications where scCO2 is uniquely enabling."

Due to the continuous shrinking of semiconductor logic device dimensions and the introduction of new materials in IC manufacturing, the use of aqueous processes will become problematic. Supercritical CO2 - based wafer processing is an emerging technology for manufacturing next-generation chips. The low viscosity and surface tension of CO2 allows for efficient cleaning of small feature sizes.

"Supercritical CO2 is a promising technology for several sub-45nm process steps. This collaboration with a leading supplier of semiconductor process-enabling subsystems, is a valuable part of our sub-45nm CMOS research programs in which we investigate all the major process steps to continue scaling of CMOS" said Luc van den Hove, Vice President Silicon Process and Device Technology at IMEC.

Editor Background

IMEC is a world leading independent research center in nanoelectronics and nanotechnology. Its research focuses on the next generations of chips and systems, and on the enabling technologies for ambient intelligence. IMEC's research bridges the gap between fundamental research at universities and technology development in industry. Its unique balance of processing and system know-how, intellectual property portfolio, state-of-the-art infrastructure and strong network of companies, universities and research institutes worldwide, positions IMEC as a key partner with which to develop and improve technologies for future systems.

IMEC is headquartered in Leuven, Belgium and has representatives in the U.S., China and Japan. Its staff of more than 1200 people includes over 380 industrial residents and guest researchers. In 2003, its revenues were EUR 145 million. Future information on IMEC can be found on www.imec.be.

BOC Edwards, part of The BOC Group plc, is a leading supplier of materials, process-enabling subsystems and services to fabs and OEMs involved in the manufacture of microelectronics devices. Serving two million customers in more than 50 countries, The BOC Group is one of the largest and most global of the world's leading gases companies, with annual sales of over GBP 4.3 billion (more than US $7 billion) in 2003. Information on the BOC Group can be accessed by visiting the Group web site, www.boc.com. Specific information on BOC Edwards can be accessed directly on www.bocedwards.com or e-mail: info@bocedwards.com.

NOTE TO EDITORS: The 2 in CO2 and scCO2 should be subscript. This symbol may not appear properly in some systems.

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