

SEMATECH Launches Immersion Technology Center to Help Prepare 193 nm Immersion Lithography for Manufacturing Introduction

July 7 2004

Austin, TX (6 July, 2004) – International SEMATECH today announced the formation of **the 193 nm immersion Technology Center (iTC)**, which will be one of the first major programs of the newly established Advanced Materials Research Center (AMRC).

The iTC will bring together scientists and researchers to support the development of 193 nm immersion lithography, an emerging technology that uses the refractive properties of fluids to extend optical imaging in semiconductor manufacturing.

The immersion effort will be one of several planned programs with the AMRC, a key technical component of the Texas Technology Initiative (TTI) combining public and private funding and research capabilities.

“The iTC is the right program at the right time for developing what appears to be the most exciting breakthrough in litho technology in years,” said Betsy Weitzman, vice president and chief operations officer for Advanced Technologies at SEMATECH. “Texas once again will be taking the lead in pushing forward a key area in semiconductor manufacturing development.”

Dr. Ben Streetman, dean of the College of Engineering at The University of Texas at Austin, said the iTC will extend the university’s ability to

interface faculty and students with leading-edge industry R&D initiatives. “We at UT Austin are excited to be working with SEMATECH in yet another promising endeavor. To participate in a program designed to help bring immersion lithography to manufacturing readiness is a great opportunity for all of us.”

In immersion lithography, a liquid is interposed between an exposure tool’s projection lens and a wafer. For 193 nm, water appears to be the best medium for this purpose. Immersion technology offers better resolution over conventional projection lithography because the lens can be designed with numerical apertures greater than one, which create the ability to produce smaller features.

Semiconductor industry representatives at the SEMATECH-sponsored Litho Forum in January 2004 voted 193 nm immersion as the most promising new technology for manufacturing introduction in 2007 and 2009.

To help prepare the industry for those entry years, the iTC will support the development of photoresists, fluids and other components for high numerical aperture, 193 nm immersion technology.

The iTC, with a total estimated budget of \$15 million, will be staffed by SEMATECH technologists who will work with a broad array of customers over a program lifetime of two to four years. Based on previous usage of similar SEMATECH facilities, dozens of users – including semiconductor manufacturers, suppliers, research universities, and engineering researchers – will spend thousands of hours per year at the Center.

The AMRC combines state and SEMATECH funds to accelerate the commercialization of research in critical advanced technology for semiconductor materials, and to investigate emerging technologies such

as nanotechnology, biotechnology, and microelectromechanical systems (MEMS).

The original press release can be found [here](#).

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