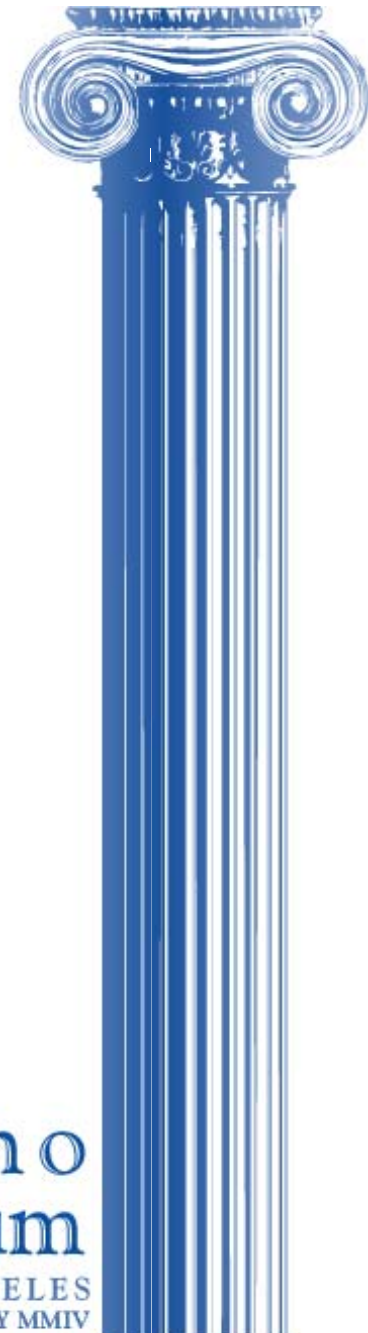


EUV Lithography

Session Chair: Peter J. Silverman

Litho
Forum
LOS ANGELES
27-29 JANUARY MMIV

presented by
International SEMATECH



Why Use EUV?

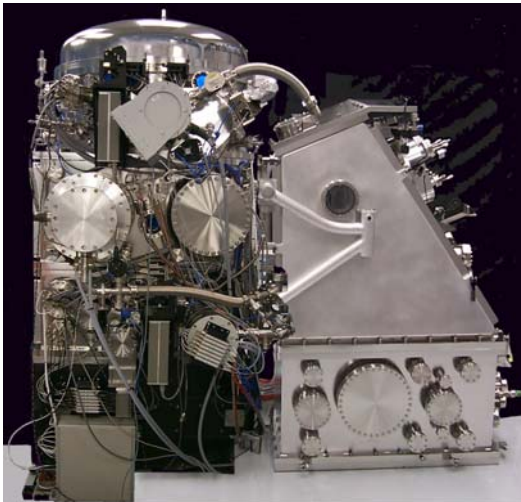


◆ ***EUV has a future!***

Resolution	k_1	λ	NA
32nm	0.60	13.4	0.25
21nm	0.40	13.4	0.25
15nm	0.40	13.4	0.35
11nm	0.30	13.4	0.35

◆ ***Two years of ETS operations demonstrated that EUVL has no remaining technical surprises!***

- ◆ Excellent agreement between modeling and data
- ◆ Imaging studies demonstrated similarity to optical lithography



**EUV will be ready
for 2009 production!**

EUV Key Issues



Exposure Tool	Optics	Figure and Finish
		Optical Component Mounting and Alignment
		Optical Metrology: Figure, Finish, Alignment
		Thermal Management
		Multi-Layer Coatings
		Optics Lifetime
	Source	Power
		Component Lifetime (Debris)
Mask	Blank	Substrate Material Selection
		Flatness; Surface Finish
		Multi-Layer Coatings
		Defects
		Cleaning
	Handling	Molecular Contamination
		Particle Protection (During Reticle Fabrication; In Exposure Tool)
		Reticle Transport
	Patterning	Mask Writer
	Inspect	Defect Inspection (Detection) Tools
AIMS		
Repair	FIB; E-Beam; Other	
Resist	Fabrication	Sensitivity
		LER
	Testing	Microstepper

Agenda



Introduction and Key Issues

**Peter Silverman
Intel**

High Resolution EUV Microstepper ...

**Malcolm Gower
Exitech**

Cymer's Light Source Development for EUV Lithography

**Bob Akins
Cymer**

EUV Source Development At XTREME Technologies

**Guido Schriever
XTREME**

International Sematech EUV Mask Blank Program

**Kevin Kemp
Sematech**

An EUV Mask Patterning Pilot Line

**Barry Lieberman
Intel**

ASML EUV Program

**Jos Benschop
ASML**

EUVL Program in Nikon

**Kazuo Ushida
Nikon**

Wrap-Up

**Peter Silverman
Intel**

