

Marylène PALARD

marylene@mer.utexas.edu

(512) 563 9448

Microelectronics Research Center

10100 Burnet Rd, Bldg. #160

Austin, Texas 78758

PROFESSIONAL EXPERIENCE

Microelectronics Research Center, University of Texas at Austin, USA, 2003-Present
240 users in the class 100 cleanroom facilities, 50 major tools for device processing from diffusion to photolithography and dry, wet etching, metallization. NNIN facilities founded by NSF. Developed the fee structures, lab user procedures, web site to facilitate the access to new users to the shared facility. Hired staff member to conduct equipment training. Organized technical workshops on advanced lithography technology, metrology with lectures and hands-on sessions.

Research Associate, Nano-imprint liaison and NSF's NNIN project manager

Process support for customer

- Decided on the feasibility of projects regarding the cleanroom capabilities
- Created process flow and proposed quotation to perform devices
- Fabricated devices by processing on different equipments

Outreach Activities

- Reported monthly to NSF on facilities usage and projects

Research and Development

- Built expertise on Imprint Lithography system IMPRIO from Molecular Imprints Inc.
- Fabricated on E-beam lithography system imprint master (design layout, EBL writing, dry etching)

ST MICROELECTRONICS, Rousset (France) 2000–2003

5th Semiconductor Manufacturer, 6in-8in fabrication plants of 2700 people. The ultimate goal in both positions, was to increase the wafer yield, by tuning the step coverage of test programs and by proposing process modification.

Product Engineer

Test activation of new DRAM products on HP93000

- Improved Wafer Electrical Test

Device Engineer

Increasing reliability of non-volatile memory products

- Tested and qualified new process to improve the product quality for automotive customers

Yield enhancement

- Defined the Statistical-Bin-Limit's tool to reduce up to 5% the yield lost in Wafer Sort and to maintain the quality of the test equipments

UNAXIS BALZERS, Lichtenstein, 1998 – 2000.

Manufacturer of systems for flat panel displays makers. Main competitor was Applied Materials.

Customers mainly in Asia: CPT in Taiwan, Samsung in Korea, Sharp, Philips in Japan.

Process Engineer in the R&D center, Paris (France) and on production sites in Asia (Japan, Taiwan)

Qualified a prototype reactor for plasma deposition (PECVD) for 1m² glass samples

Customer Support

- Trained customers on layer deposition process
- Optimized process regarding the product (TFTs) performances
- Reproduced defects observed on production site and proposed solution

Gate Oxide optimization in collaboration with Thomson LCD (Saclay-France)

- Characterized thin film by C(v), I(v) measurements on MOS structures

CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE, (France) in collaboration with the FORSCHUNGSZENTRUM Rossendorf, Dresden (Germany), 1994-1997.

Graduate Research Assistant

- Quantified the nucleation and growth of Silicide precipitates by Cobalt ion implantation into Silicon buffers
- Adjusted the Monte-Carlo dynamic model to the experimental results

Publications List

Daw Don Cheam, P. Santosh Kumar Karre, Marylene Palard and Paul L. Bergstrom, "Mass Production of Room Temperature Single Electron Transistors using Step & Flash Imprint Lithography and Lift-off Technique" IEEE NANO 2008

Marylène Palard, "Advanced Lithography: Electron-beam Lithography" Nanotechnology, An Open Textbook Chapter 5.3 http://www.nano.umn.edu/nnin_opentext/contents.jsp

Marylène Palard, S.Banerjee. "High resolution mold fabrication for nanoimprint lithography system in a fast cycle at low cost" NNT '07, Paris, France

Doreen. Ahmad; Sagnik Dey; Marylene Palard; Fahmida Ferdousi; Emanuel Tutuc; Sanjay Banerjee; "Nano-Imprint Lithography for Nanowire Fabrication" ELECTRONIC MATERIALS CONFERENCE 2007, University of Notre Dame, Indiana, USA

Marylène Palard, "Introduction to imprint lithography template fabrication, imprio100, process capabilities " 2007 Electron Beam Lithography Technical Forum Georgia Institute of Technology, Atlanta, Georgia

Marylène Palard, "Imprint Lithography and Mold Fabrication", Soft Lithography Technical Forum 2006, CNS Harvard University campus, Cambridge.

Sachin Joshi; Doreen Ahmad; Marylene Palard; David Q.Kelly; David Onsongo; Sagnik Dey; L. Fei; T. Torack; Mike Seacrist; Bruce Kellerman; Sanjay K. Banerjee, "Gate Oxide Reliability Studies for Strained Si on Relaxed SiGe. MOS Devices" Electronic Materials Conference 2005, University of California, Santa Barbara, California.

EDUCATION

PH.D in Solid States Physics, University of Paris-11, 1997

Thesis: "In Situ Transmission Electron Microscopy (TEM) studies of nucleation and growth of cobalt silicides precipitates under implantation"

M.A. Material Physics, University of Poitiers, 1994

Thesis: "TEM and convergent beam pattern analysis"

B.Sc. Material Sciences, University of Poitiers, 1993