

Xiaoji Yang

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OBJECTIVE

Pursuing a position in semiconductor industry/plasma technologies/MEMS areas.
Interested in R&D with Si, Ge and III-V semiconductor materials

EDUCATION

01/2003	Ph.D	Northeastern University, Boston, MA Major: Electrical and Computer Engineering Area: Electronic Circuits, Solid State Devices and Microfabrication	(GPA 3.75/4.0)
01/1996	MS	Tsinghua University, Beijing, China Major: Electronic Engineering Area: Physical Electronics and Optoelectronics	(GPA 3.8/4.0)
07/1993	B.S	Tsinghua University, Beijing, China Major: Electronic Engineering Area: Physical Electronics and Optoelectronics	(GPA 3.8/4.0)

EXPERIENCE & PROJECTS

- 1999 to Present **Research Assistant** **Northeastern University, Boston, MA**
Research on **plasma dry etching of an X-ray image sensor array** (The project is sponsored by NIH and RMD Inc.)
A vapor deposited CsI (cesium iodide) on fiber optic plate has been **micromachined** to a finely pixelated structure with each pixel of $65\mu\text{m} \times 65\mu\text{m} \times 50\mu\text{m}$. The trenches' aspect ratio is 6:1. This pixelated scintillation screen increases the spatial resolution of the **X-ray image sensor**. The technologies can be applied to the other semiconductor materials.
Plasma diagnostics, such as **optical emission spectroscopy** have been implemented.
A global model explaining the plasma etching CsI mechanism is being constructed.
- 1993 to 1999 **Lecturer** (1996 to 1999) **Research Assistant** (1993 to 1996) **Tsinghua University, Beijing, China**
Research on composite **Low-e coatings** (Energy saving coatings) (Sponsored by the National "9-5" Plan, China)
Some transparent conductive films (Indium-Tin-Oxide), selective composite alloy or metals are sandwiched between two abrasion-resist dielectric thin films on glass substrates with magnetron sputtering technology. The Low-e coatings deposited on the construction glass windows adjust the reflectance and transmittance of the incident sunlight. They can adjust the indoor temperatures and decorate the buildings.
Research on the **spectral selective films** for thermal conversion of solar energy (Sponsored by the National "8-5" Plan, China)
Designed a circuit for capacitance manometer for measuring vacuum
Taught undergraduate student course "Thin Film Physics and Technology".

TECHNICAL SKILLS

Proficient in **IC fabrication/MEMS** processes, such as magnetron sputtering, CVD, thermal evaporation, e-beam evaporation, UV photolithography, RIE, ICP etching, ion milling.
Hands-on experience on **clean room** operations, **vacuum technologies** and material analysis tools, such as **SEM, EDS, AFM**
In-depth knowledge on solid state device physics and electronic physics, such as **CMOS, BJT, BiCMOS, MOSFET**.
Skilled with **hardware design** tools and strong background on electronic circuit design, test and routing

COMPUTER SKILLS & CAD TOOLS

Proficient with **UNIX, Windows/Windows NT, DOS** platforms
Computer languages: C/C++, FORTRAN, Visual Basic.
CAD Tools: MATLAB, VHDL, HSpice, Pspice, Synopsys, TSUPREM

MAJOR COURSES

Solid State Devices (I, II)	High Speed/High Frequency Solid State Devices (III-V Semiconductors)
Integrated Circuits Fabrication (I, II), Plasma Processing	Microelectromechanical Systems (MEMS)
VLSI Design	Digital System Design with Hardware Description Language (VHDL)
Digital Hardware Synthesis (Synopsys)	Electronic Circuit for Analog Signal Processing
Electromagnetic Theory (I,II)	

PUBLICATIONS X.Yang, J.Hopwood, "Plasma etching of cesium iodide", J.Vac.Sci.Technol.A 20(1), Jan/Feb, 132(2002)