Announcement of Professional Vacancy

Applications are invited for consideration to the following position:

State University of New York at Binghamton  Research Scientist

Department/Location: Small Scale Systems  Local Title: Surface Scientist

Integration & Packaging Laboratory at the ITC  Research Foundation Project #: 

Salary Range: $70,000.00  If Part-time, % of time: 

Duties: Overall laboratory scientist at Small Scale Systems Integration and Packaging Laboratory at Binghamton University's Innovative Technologies Complex. Position will focus on providing overall expertise in surface science and TEM analysis. Will lead research and development effort in areas related to SSSIP process and product development including the following areas:

- Organic and flexible electronics
- Organic and flexible chip carrier products
- High performance printed circuit fabrication process
- Semiconductor packaging (both flip chip soldering and wire-bond process)
- Ceramic chip carrier products
- Electronic card/board assembly
- Electronic components such as connectors and interposers
- Semiconductor back end of line (BEOL) process integration for 130, 90, and 45 nm technology development
- Far-BEOL processes for CMOS
- Chip and packaging interactions for CMOS devices with low-k and ultra low-k dielectric materials
- Various terminal design and its process for flip soldering and wire-bond devices

Resident TEM Scientist:

- Establish expertise in the area of TEM analysis
- Establish expertise in the area of FIB
- Ensure TEM tools are operational and that they are serviced regularly
- Ensure all TEM supplies and materials are available as needed
- Conduct TEM analysis for different research projects as needed using tools and available labs at SSSIP
- Schedule all TEM work on the tools at the SSSIP Labs
- Work with faculty and visiting industrial scientists on TEM related studies

Qualifications: This position requires a Ph.D. degree in science or engineering and at least five years experience in industry or academic setting.

Special Notes: Will conduct classes at the undergraduate and graduate level as an adjunct faculty in the areas of surface science as needed and as time permits. Educate and train students, faculty, staff, and external users on the use of various analytical instruments as needed; Other responsibilities as they arise.

Persons interested in the above position should submit a resume along with a letter of application to:

Name: Monice DeGennaro  
Department: Center for Advanced Microelectronics Manufacturing at the ITC  
Address: Binghamton University  
PO Box 6000  
Binghamton, NY 13902

Closing Date for Receipt of Applications: Until filled

WE ARE AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER
Personnel are chosen on the basis of ability without regard to Race, Color, Religion, Sex, Age, National Origin, Disability or Marital Status, in Accordance with the Federal and State Law.
POSITION DESCRIPTION FORM

PROPOSED TITLE: Surface Scientist
PROPOSED SALARY: $70,000
SUPERVISOR: Bahgat Sammakia
CAMPUS LOCATION: Small Scale Systems Integration & Packaging Laboratory

DUTIES AND RESPONSIBILITIES:
Overall laboratory scientist at Small Scale Systems Integration and Packaging Laboratory at Binghamton University’s Innovative Technologies Complex. Position will focus on providing overall expertise in surface science and TEM analysis.

Surface Scientist
Resident expert in existing and future SSSIP technical areas such as electron optical and analytical instruments including high resolution scanning electron microscopy with energy dispersive spectroscopy, X-ray photo-emission spectroscopy, and transmission electron microscopy, and auger electron spectroscopy.

Will lead research and development effort in areas related to SSSIP process and product development including the following areas:
- Organic and flexible electronics;
- Organic and flexible chip carrier products;
- High performance printed circuit fabrication process;
- Semiconductor packaging (both flip chip soldering and wire-bond process);
- Ceramic chip carrier products;
- Electronic card/board assembly;
- Electronic components such as connectors and interposers;
- Semiconductor back end of line (BEOL) process integration for 130, 90, and 45 nm technology development;
- Far-BEOL processes for CMOS;
- Chip and packaging interactions for CMOS devices with low-k and ultra low-k dielectric Materials;
- Various terminal design and its process for flip soldering and wire-bond devices.

Resident TEM Scientist
Electronic card/board assembly;
Electronic components such as connectors and interposers;
Semiconductor back end of line (BEOL) process integration for 130, 90, and 45 nm technology development;
Far-BEOL processes for CMOS;
Chip and packaging interactions for CMOS devices with low-k and ultra low-k dielectric Materials;
Various terminal design and its process for flip soldering and wire-bond devices;
Establish expertise in the area of TEM & FIB analysis;
Ensure TEM tools are operational and that they are serviced regularly;
Ensure all TEM supplies and materials are available as needed;
Conduct TEM analysis for different research projects as needed;
Schedule all TEM work on the tools at the SSSIP labs;
Work with faculty and visiting industrial scientists on TEM related studies.

**EXPERIENCE REQUIRED (YEARS & TYPE):**
Candidate should have at least 5 years experience in industry or academic setting.

**EDUCATION AND SPECIAL TRAINING:**
This position requires a Ph.D. in Science or Engineering.

**SPECIAL KNOWLEDGE, ABILITIES, AND SKILLS**
Candidate will conduct classes at the undergraduate and graduate level as adjunct faculty in the areas of surface science as needed and as time permits.

Educate and train students, faculty, staff and external users on the use of various analytical instruments as needed. Other responsibilities as they arise.