



Wisconsin Center for Applied Microelectronics

The Wisconsin Center for Applied Microelectronics at the University of Wisconsin-Madison provides a research facility for microfabrication technologies, products and innovations. In order to give students a state-of-the-art education and to maintain leading-edge research programs, we continue to improve this advanced laboratory.

Location: The Center is located third floor of the Engineering Centers Building, 1550 Engineering Drive, Madison, WI 53706

Lab Manager: Dan Christensen, 608-262-6877

Website: <http://www.engr.wisc.edu/centers/wcam/>

What's New & Improved in the WCAM?

WCAM has developed a major update to metal evaporation. The CHA metal evaporator has been a real workhorse in the clean room since 1992. In the past four years, the evaporator has been used over 2,400 times. That's impressive!

An upgrade has been made to the evaporator's vacuum system, including a stainless steel bell jar and a more reliable gate valve. Users will find that the chamber pump down time is now reduced.



Feature tool -- Did you know?



TOUSIMIS CRITICAL POINT DRYER

Critical point dryers are used in MEMS applications to facilitate the release mechanical beams from their underlying layers. Typically, silicon dioxide is removed from beneath the structures using HF acid. If the device is simply rinsed and dried, capillary forces due to the surface tension of the liquid can cause the two surfaces to adhere. The critical point dryer allows for the release of the structure and prevent stiction. The devices are left in the rinse solution and then dried using a critical point dryer. Liquid carbon dioxide is the transitional fluid which under pressure and heat changes to a gaseous state and dries the sample.

The Tousimis Automegasamdri 915B can process wafer sizes up to 6 inches. The microprocessor controller provides completely automatic process steps of cool, fill, purge, heat, bleed and vent using liquid CO₂. The various chamber inserts give the user control of wafer size, LCO₂ consumption and process time.



and Clean Room Safety Orientation

This past year WCAM has made entering the clean room easier than ever while maintaining our commitment to a safe clean room environment. With the introduction of the eCOW Lab Safety Orientation course, users are able to complete critical safety topics on their own time and at their own pace. Sample topics are:

- Chemical Safety
- Fume Hood Safety
- Fire Safety
- Other Emergencies & Evacuation

The on-line course also includes an overview of the equipment offered in WCAM, lab policies and how to suit up to enter the clean room. After completing this course, a new user is ready to enter the clean room for equipment training.

Upon first entering the clean room, the new user tours the clean room with staff to become familiar with bays and equipment location. Then they are all set to receive personal equipment training. Before too long, they are processing samples and advancing their research efforts.