

Contact: Andrea Anania

UNIVERSITY OF IOWA EQUIPMENT PURCHASE

Action Requested: Approval for SUI to purchase a VEECO GEN20 Multi 2 Inch Molecular Beam Eptiaxy Reactor for a total of \$1,670,480.

Executive Summary: Equipment purchases at the Regent institutions costing more than \$1 million are required by Board policy to be approved by the Board of Regents. The Executive Director may approve emergency purchases exceeding \$1,000,000 to be followed by Board ratification.

VEECO GEN20 MULTI 2 INCH MOLECULAR BEAM EPTIAXY (MBE) REACTOR

Description of the Equipment

The University reports that MBE is a flexible and important tool of nanotechnology, which allow heterogeneous semiconductor crystalline layers to be grown with single atomic layer precision.

Several interdisciplinary research projects begin with the growth of semiconductor heterostructures and involve the Departments of Physics, Chemistry, Electrical and Computer Engineering, Chemical and Biochemical Engineering and Optics.

Justification of the Need for the Equipment

The University of Iowa Molecular Beam Epitaxy (MBE) facility is located in the Iowa Advanced Technology Laboratories building. The University reports that the facility:

- ◆ Lost one of two growth systems, a PerkinElmer 430, in the flood of 2008;
- ◆ Currently relies exclusively on the Applied-Epi EPI930, which is functional, but not capable of handling the volume of work;
- ◆ Experiences both over demand and delays, which results in all projects suffering and occasionally in jeopardy of loss of funding as other collaborators wait for MBE material;
- ◆ Has turned away a number of respected University researchers and researchers at other universities due to lack of capacity; and
- ◆ Would add capacity and expand MBE facility capabilities with the purchase of a VEECO GEN20 Multi 2 Inch MBE Reactor.

Any Known Alternatives to the Equipment Proposed

A Request for Proposal was issued and VEECO submitted the proposal which the Evaluation Committee determined to be the most responsive and the best value.

Estimated Cost and Source of Funding

The University reports that the cost of the MBE is \$1,670,480. Sources of funding include insurance proceeds and/or other state and federal grant entities.

Currently, the MBE is a critical component of existing grants totaling \$5.7 million from agencies such as the National Institutes of Health, National Science Foundation, and the United States Army.

Funds generated by these grants also support the University Microfabrication Facility, which currently fabricates microscale structures and eventually nanoscale structures. Without an MBE facility on campus, competition for such funding would not have been possible.

Board Policy: Chapter 7.06B(12) of the Regent Policy Manual requires that:

- ◆ Equipment costing more than \$1,000,000 must be submitted to the Board for approval; and
- ◆ Requests submitted to the Board Office for approval must include the following information:
 - ◆ Description of the equipment;
 - ◆ Justification of the need for the equipment;
 - ◆ Any known alternatives to the equipment proposed; and
 - ◆ Estimated cost and source of funding.