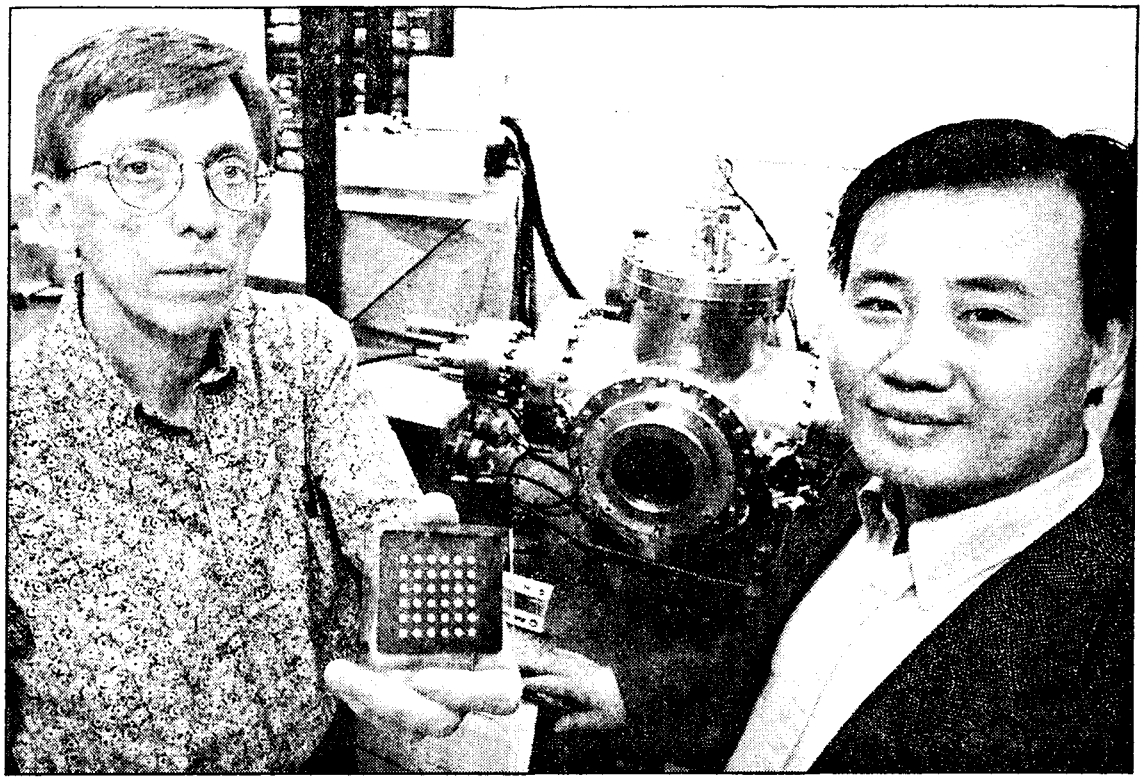

BLADE PHOTO BY GREG HORVATH

Drs. Alvin Compaan and Xunming Deng display a polycrystalline cadmium telluride solar cell.

UT gets $870,000 grant

Generation of cheap solar power researched

BY TOM TROY
BLADE STAFF WRITER

Researchers at the University of Toledo have been awarded $870,000 from the government to study materials for generating cheap solar power, the university said yesterday.

The U.S. Department of Energy grant will last three years and support research into "thin films," materials that can be applied to surfaces such as glass and stainless steel to convert sunlight into electricity. UT will match the grant with $557,751, mostly in the form of labor by three professors and six graduate students.

Dr. Alvin Compaan, one of the two principal co-investigators, said the UT group is trying to develop materials to make solar cells economically feasible.

The award is from the Energy Department's National Renewable Energy Laboratory.

Thin-film solar cells would be cheaper than crystalline silicon solar cells. Applied to glass or stainless steel, they could be attached to rooftops to supplement conventional energy sources. Crystalline silicon, the same material used in semiconductors, is very labor-intensive, so it's very expensive.

"For space applications, it's generally fine. But for terrestrial applications, where price is the most important thing, there would be much advantage to making thin-film solar cells," Dr. Compaan said.

Joining Dr. Compaan as principal co-investigator is Dr. Xunming Deng. Dr. Randy Bohn is a co-investigator. All three are of the physics and astronomy department and members of the university's Center for Materials Science and Engineering.

The study will focus on two types of films: amorphous silicon and polycrystalline cadmium telluride.

The films are one-50th the thickness of a sheet of paper and about one-500th the thickness of a silicon cell.

When sunlight hits a solar cell, it produces electrical energy. This is known as the photovoltaic effect.

UT is collaborating with Solar Cells, Inc., of Toledo, and Energy Conversion Devices and United Solar Systems Corp., both of Troy, Mich., as well as other photovoltaic industrial groups. United Solar Systems has begun manufacturing amorphous silicon modules on stainless-steel substrates.

Drs. Compaan and Bohn have received more than $1.9 million in external funding, mostly from the federal government, since 1989. Dr. Deng joined the faculty in 1996.