

Air quality monitor may detect pollution

The air you breathe can be poisonous even if you can't see or smell the pollutants. But the danger will remain, until sensitive monitors are developed to detect the pollution.

University scientist Dr. Russell Donnelly is working on such an air quality monitor.

Donnelly, physics department chairman, won a federal grant of \$70,000 for the project from the National Science Foundation in a competition for "problem-oriented research proposals of high merit."

Two other physics proposals were accepted including a Stanford project for a meson beam for cancer therapy and a Brookhaven project for superconducting power transmission.

The NSF money will allow Donnelly to perfect his method of capturing pollutants by freezing them out of the air and "plating" them onto a cold surface, from which they can be removed and measured.

The University physicist has been working on research related to air pollution, in addition to his regular research in low-temperature physics, since he came to Oregon from Chicago in 1966. He then discovered the Willamette Valley's problems with pulp mill odors.

Weyerhaeuser Company gave the University some \$100,000 from 1967 to 1970 for Donnelly to try treating gas streams containing very small quantities of highly unpleasant odors with his low temperature techniques.

"The company wanted to find out," explains Dr. Donnelly, "whether cryogenic (low temperature) systems would remove pulp mill odor and if so, whether it was commercially feasible."

The answer to the first question, he learned very quickly, was definitely yes.

"The University developed cold trap," he notes, "could remove all objectionable odors, having an output which could be freely breathed."

But the answer to the second question was no-not because of the terrific cooling required, but because the gases come from the recovery furnace so wet that the cost of condensing the water before starting deep cooling is too high.

"One can imagine," points out Dr. Donnelly, "that as technology develops, cold traps may be brought into line financially even for pulp mills."

The research thus changed direction—from treatment to detection. Now, with the NSF funds, Donnelly is developing his cold traps to extend the sensitivity of detectors.

Existing detectors can discover somewhere in the vicinity of a few parts per million of a pollutant in air.

Donnelly and his assistants, Dr. John C. Cooper and Michael Cromar, hope to extend analysis techniques 100 to 1000 times—to the parts-per-billion range.

That's why the Donnelly laboratory in the University science building sometimes smells like rotten cabbage or a pulp mill. Air streams containing these gases are being passed over pipes of inexpensive byproduct nitrogen, chilled to 77 degrees above absolute zero.

On Campus

Senate tabs committee appointments

Committee appointments will be the main item on the short agenda for today's ASUO Senate meeting.

According to Senate President Stephanie Larsen, the appointments will include senators and nonsenators for the seven committees.

Also to be discussed are two constitutional amendments on elections and apportionment.

The meeting will be at 7 p.m. in 101 EMU.

Seminar hour-requirement changed

"Seminar: Teachers Guide to the Draft," a new SEARCH course this fall, is open to all students who have three hours of education courses, rather than five hours as was reported in the SEARCH time schedule. SEARCH director Jeff Jefferson says the three hour requirement is "negotiable."

Those interested in enrolling should contact Nancy Binder at ext. 4368.

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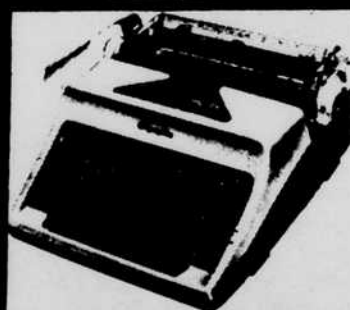
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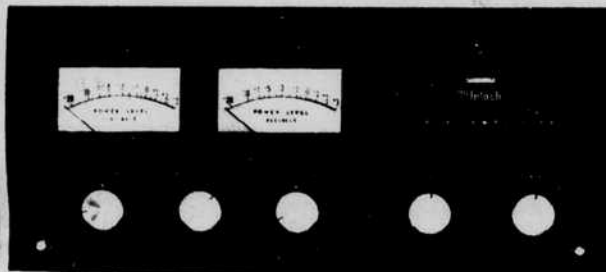
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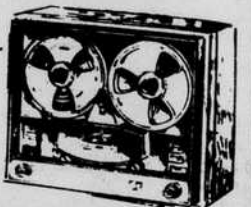
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