

LETTERS

Accessing Atoms via Synchrotron Radiation

In April's Search and Discovery story "Many Nations Build the Latest in Synchrotron Light Sources" (page 17), Barbara Goss Levi lucidly describes the widespread activity in construction of "third generation" light sources that rely primarily on insertion devices to produce radiation. The summary of promising applications of the new facilities might well have included atomic physics, where synchrotron radiation has already led to important advances in the exploration of structure and dynamics.¹ In particular, hard, highly monochromatized tunable x rays from these sources provide unique opportunities for the study of otherwise inaccessible atomic inner-shell phenomena, including Raman transitions and threshold photoelectron satellites.²

References

1. H. Winick, S. Doniach, eds., *Synchrotron Radiation Research*, Plenum, New York (1980). B. Crasemann, F. Wuilleumier, *PHYSICS TODAY*, June 1984, p. 34.
2. T. Baer, B. Crasemann, J. L. Dehmer, H. P. Kelly, M. O. Krause, D. W. Lindle, "Atomic and Molecular Science with Synchrotron Radiation," in "Future Opportunities for Research in Atomic, Molecular, and Optical Physics," report PUB-5305, Lawrence Berkeley Laboratory, Berkeley, Calif. (1991).

BERND CRASEMANN
University of Oregon
Eugene, Oregon

5/91

Scientific Authorship: What's in a Name?

Nowadays, the standards for and meanings of authorship on a scientific paper are very pluralistic. In some fields, like solid-state physics, the authors are listed in the order of the amount of work each contributed; in particle physics the order is alphabetical. While some people adhere to the APS guidelines saying that only authors who have made substantive contributions to the work should be listed, others do not. Furthermore,

the authors can have very different skills and be of different levels of seniority, leading to different roles in the project written up. Finally, to confuse things further, the number of authors can vary over two orders of magnitude.

Thus if I read a paper with more than one author, I have no idea who did what. If one considers that in every other aspect science is driven by optimizing the description of reality, this should strike anyone as a strange aberration.

I have the following suggestion for an improvement: Put the names of the authors on the paper in alphabetical order, and add an "authorship" section explaining what each author contributed. In style, content and length it could be similar to the customary acknowledgment section. In addition to explaining the contributions of each author realistically, this section could also serve as a quick guide to whom to contact if one would like to address a specific point in the paper. This approach would give a public record of the type and quality of a writer's contributions, which could be used for professional hiring purposes and in science writing.

EUGEN TARNOW
Xerox PARC

4/91

Palo Alto, California

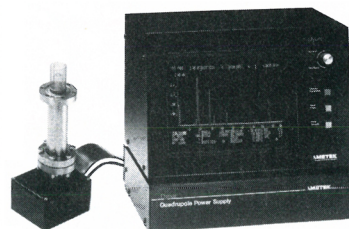
Physics Reinstated at Portland State

The letter headlined "Physics Deported at Portland State" in your June issue (page 145) prompts me to write.

It is true that a committee at Portland State University, established to respond to a budget reduction requirement imposed as a result of a tax limitation vote, recommended that the undergraduate degree program in our department of physics, as well as the programs in some other areas, be either put on hold or eliminated. (No recommendation was made to eliminate or reduce the graduate programs in physics.)

However, after consideration of the recommendation, President Judith Ramaley reinstated the undergradu-

High Performance Dycor™ Quadrupole Mass Spectrometers



The Dycor Quadrupole Mass Spectrometer offers a dynamic range of 7 orders of magnitude along with a high resolution CRT, analog bar, and tabular display modes, with an RS-232 port for computer interface as standard features.

The Dycor product line is manufactured at our facility in the U.S.A. This permits us to offer it at a price which is the most cost-effective in the industry.

Whether your need is residual gas analysis, process monitoring, or leak detection, the microprocessor-based models provide you with the ultimate in performance.

Applications include:

- Residual Gas Analysis
- Process Monitoring
- Leak Detection
- Chemical Vapor Deposition
- Fermentation
- Sputtering
- Plasma Etching
- Molecular Beam Epitaxy
- Cryogenics
- High Energy Physics
- Vacuum Furnaces
- Evaporation
- Ion Beam Milling

Features:

- 1-100 or 1-200 AMU Range
- Faraday Cup and Electron Multiplier
- 9" or 12" High Resolution CRT
- Analog Bar or Tabular Display
- Pressure vs. Time Display
- Linear to 4 Decade Log Scale
- RS-232 Computer Interface
- 10⁻¹⁴ Torr Minimum Detectable Partial Pressure
- Background Subtraction
- Spectral Library
- Sample Systems for higher Pressures

For literature, contact AMETEK, Process and Analytical Instruments Div. 150 Freeport Road, Pittsburgh, PA 15238, TEL: 412-828-9040, FAX: 412-826-0399.

AMETEK
PROCESS & ANALYTICAL INSTRUMENTS DIVISION

Circle number 12 on Reader Service Card