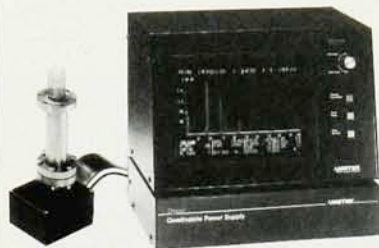


High Performance Dycor™ Quadrupole Mass Spectrometers



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, Thermox Instruments Division, 150 Freepoint Road, Pittsburgh, PA 15238, TEL: 412-828-9040, FAX: 412-826-0399.

AMETEK
THERMOX INSTRUMENTS DIVISION

Circle number 119 on Reader Service Card

controlled from the outside—that will be only a 1-64th of an inch cube, not counting the lead-in wires."

Monday a young engineer collected the \$1000 from Dr. Richard Feynman [sic].

William McLellan, who works for a local electronic firm, had to display his motor under a 40-power microscope. To the naked eye it appears hardly larger than a speck of dust.

He said it took him 2½ months to build, on his own time. It's only six one-thousandths of an inch in diameter—no larger than the period at the end of this sentence.

Yet it contains four coils of wire with 21 turns per coil, a quartz bearing, a tiny rotor—13 parts in all. It has an output of a millionth of a horsepower.

I was interested in the story not because it has to do with Feynman but because I was having a battle with the head of our machine shop over a small piece of equipment he was trying to build for me, without much success. I showed him this article and told him that if McLellan could build this motor, there should be no problem building my gadget. The article was stuck in my research notebook from the time.

JOSEPH READER

National Institute of Standards
and Technology

5/89

Gaithersburg, Maryland

Give (Nuclear) Peace a Chance

Pugwash's leaders (see PHYSICS TODAY, September, page 81) can indeed be proud. They have been very helpful in preventing a nuclear holocaust. But current scientific forecasts of the ecological effects of nuclear war and the possession of strategic nuclear weapons by nations in Europe have changed the nature of the problem.

Today, each superpower can immediately, safely, in its own best interest, reduce its nuclear forces to a few hundred second-strike strategic weapons, *no matter what the other one does.*

Today, each nation with troops in Europe can reduce them to border patrols, *no matter what the other side does.*

Nuclear peace is here. We are wasting two-thirds of our defense budget on obsolete, dangerous, useless forces. We can stop this waste without wait-

ing for Soviet permission.

RICHARD C. RAYMOND

9/89

Santa Barbara, California

Theme from 'The π-rates of Penzance'

The following is an original song (with apologies to Gilbert and Sullivan):

I Am the Very Model of a Modern Physics Theorist

I've studied all the sciences in order
alphabetical,
My judgment is, which some of you
may find to be heretical,
The field that's really quite abstruse,
The field where all the screws come
loose,
The field that's famous for its spoofs,
is physics theoretical.

I've taken undergraduate work
whose content is forgettable;
And graduate work is gen'rally
regarded as regrettable.
The lecturers are all heard.
A cogent word is never heard.
Insanity afflicts a third in physics
theoretical.

We never do experiments; we shun
the purely practical.
Our best work's done in getting
grants—our budgets are
fantastical.

In one respect our motive's pure:
Though funding falls, we still
endure—

We make damn sure our job's secure
in physics theoretical.

Our scientific breakthroughs are, to
say the least, debatable.
We laugh at critics haughtily; our
egos are inflatable.
The rest of science goes along,
Because our last defense is strong:
It's hard to prove we're ever wrong
in physics theoretical.

JOHN A. BARRETT

Harvard University

6/89

Cambridge, Massachusetts

Correction

December, page 46—The optical panel of the National Research Council's Astronomy and Astrophysics Survey has two vice chairs: Wallace Sargent of Caltech and Sidney Wolff, director of the National Optical Astronomy Observatories. Like the other panel vice chairs, both are members of the executive committee of the survey. ■