

commercial ultrasonic equipment for medical diagnosis and nondestructive testing.

It is well known (for example, from the Rayleigh resolution criterion) that angular resolution, for coherent propagation and linear processing of image information, is a function of the ratio of wavelength to some characteristic aperture dimension.

Theoretically then, one should be able to obtain optimum resolution by choosing a wavelength on the order of the target dimension and an aperture on the order of the available window. Optimum resolution can be found by decreasing wavelength and increasing aperture to achieve the desired image quality. Obviously, what can be accomplished by this means in the human body is limited by air and gas inclusions and by the non-uniform character of soft tissue. However, longer wavelengths should not only be effective in minimizing the attenuation problems to which Swindell and Barrett allude, but also be effective in minimizing the effects of soft tissue non-uniformity.

As manufacturers of commercial ultrasonic equipment fully utilize the principles of related fields such as imaging optics and antenna theory, ultrasonic imaging will begin to complement and compete more effectively with methods involving ionizing radiation.

ERIC B. MILLER

National Bureau of Standards  
Washington, D.C.

1/13/78

## The Definitive Article

I wrote the definitive article  
And sent it to PHYSICS TODAY.  
It described every yet unknown particle  
And explained every paradox away.  
In elegant but simple prose  
The writing flows and flows and flows  
Everything with nothing missed  
Of interest to a physicist.

The journal said it would not fit;  
Let's undertake to shorten it.  
Two hundred pages in precis  
Is even long for RMP.  
Fifteen pages—that will do  
For the *Physical Review*.

But wait!  
Boil it down, evaporate  
Everything but name and date.  
There . . . now we're set—  
Send it off to *Phys. Rev. Lett.*!

M. KOCHER  
Corvallis, Oregon

## Correction

March, page 44, figure 5—The numbers of the flux axis should be inverted, to range from  $10^{-1}$  at the top to  $10^{-5}$  at the bottom. □

# VARYING THE BAND GAP...

## Versatility in Solid State Physics and Job Opportunities

Hg Cd Te can sense radiation from 1 to over 40  $\mu$  for a broad spectrum of applications.

Through the knowledge and efforts of our scientists and engineers, the Electro-Optics Center has achieved world leadership in the research, development and production of Hg Cd Te high performance IR detectors and detector arrays. Significant breakthroughs have occurred in IR imagers utilizing CCD technology. We have led the way in the research and development of room temperature operation high D\* pyroelectric arrays for IR imaging and we are producing PC and PV arrays of GaP detectors for the UV and visible regions.

We need scientists and engineers who can develop and transform new technology into devices and equipment.

### Sr. Research Engineer / Physicist

A key position exists for an individual with broad analytical and experimental competence in semiconductor devices. This person not only can analyze photodetector performance and relate it to basic device structure but has the innovative drive to develop new precepts and device concepts as well as conceiving and implementing experiments for their verification. The ability and interest to relate these results to a broad spectrum of device applications is very desirable. A PhD in Physics, EE or Material Science with at least three years of related experience is necessary.

### Sr. Solid State EE / Physicist

A truly challenging position exists for an engineering scientist with a strong background in solid state circuitry at the chip level to design, develop and evaluate CCD based silicon microelectronic technology. Background must include a working knowledge of fundamental device mechanisms and the ability to relate device operations to systems applications. An MS in EE or Physics, with at least 3 years' experience, is required.

### Sr. Research Physicists

Several positions are now available in an expanding R&D effort directed toward solid state quantum and thermal infrared detectors. Experienced individuals are needed to join small groups of scientists performing both fundamental and applied investigations of Hg Cd Te photodiodes, GaP photodiodes and JFETs, pyroelectric detectors and LPE growth of Hg Cd Te crystals. These positions offer exceptional career growth in material science, semiconductor physics and device processing. A PhD in Solid State Physics or EE with 1-3 years of experience is required.

### Sr. Design Engineer

There is an immediate need for a semiconductor device engineer with a thorough understanding of device physics and the capability of assuming project responsibility. This engineer must have the capacity of taking a developmental project and translating it to a limited, high reliability manufacturing stage. Some manufacturing process engineering experience would be an asset. An MSEE or Physics with a minimum of three years' experience with other than silicon material is required.

Interested applicants are invited to send a resume, in strict confidence, to J.E. McManus, HONEYWELL ELECTRO-OPTICS CENTER, MS-50, 2 Forbes Road, Lexington, MA 02173. Please specify the position of interest and include your current salary.

# Honeywell

## ELECTRO-OPTICS CENTER

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