RMD Publications Prior to 1980

62) **Cadmium telluride gamma camera**

1979 IEEE Trans. Nucl. Sci. Vol.NS-26 Pages 552-558

Entine G, Luthmann R, Mauderli W, Fitzgerald T, Williams CM, Tosswill CH

Abstract

A small 4 cm by 4 cm prototype CdTe gamma camera has been constructed which demonstrates sensitivity and spacial resolution superior to the standard Anger camera. The camera is based on an array of linear solid state detectors contained within a laminar collimator which confines the field of view to one dimension. The array is rotated stepwise through 180 degrees and data from each position recorded and computer processed. This technique leads to a major enhancement in sensitivity relative to the multihole collimator. Clinical images have been obtained and a larger CdTe camera is planned.

61) **CdTe ambulatory ventricular function monitor**

1979 Nuclear science/ nuclear power systems symposium, San Fran, CA Vol.Oct. 17-19

Lazewatsky JL, Alpert NM, Moore RH, Boucher CA, Strauss HW

Abstract

A prototype device consisting of two arrays of CdTe detectors, ECG amplifiers and gate, microprocessor, and tape recorder was devised to record simultaneous ECG and radionuclide blood pool data from the left ventricle for extended periods during normal activity. The device is intended to record information concerning both normal and abnormal physiology of the heart and to permit the evaluation of new pharmaceuticals under everyday conditions. Preliminary results indicate that the device is capable of recording and reading out data from both phantoms and patients.

60) **A computerized rotating laminar radionuclide camera**

1979 J Nucl Med Vol.20 Pages 341-344

Mauderli W, Luthmann RW, Fitzgerald LT, Urie MM, Williams CM, Tosswill Ch, Entine G

Abstract

We have constructed a radionuclide camera that embodies a unique detector-collimator concept and provides a radically new approach to imaging. The heart of the instrument is a linear array of semiconductor detectors separated by thin tungsten plates that confine the field of view of each detector to one dimension. This collimator design has a higher collection efficiency than the standard parallel-hole collimator but cannot directly produce a two-dimensional image. When multiple measurements are taken as the array rotates through 180 degrees, a computerized image restoration algorithm can then produce two-dimensional images with resolution determined by the width of the detectors. A small prototype camera has produced images with resolution superior to conventional Anger cameras.

59) **An evaluation of semiconductor detectors for positron tomography**

1979 IEEE Trans Nucl Sci Vol.NS-26 Pages 648-653

Kaufman L, Williams SH, Hosier K, Ewins JH

58) **Relation of cerebral blood flow to neurological status and outcome in head-injured patients**

1979 J Neurosurgery Vol.51 Page 292

Obrist WD, Gennarelli TA, Segawa H, Dolinskas CA, Langfitt TW

57) **A totally new pocket radiation chirper**

1979 Health Phys Vol.36 Pages 455-458

Umbarger CJ, Wolf MA, Entine G

56) **Microcomputer based dual energy photon absorptiometric bone mineral analyzer (VCH)**

1979 IEEE Trans Nucl Sci Vol.NS-26 Pages 576-582

Vogel JM, Cline JW, Harrison JF, Ulloa GA, McDonald RJ

55) **Cadmium telluride and mercuric iodide gamma radiation detectors**

1979 Nucl Instrum Methods Vol.162 Pages 113-123

White RC, Schieber MM

54) **Use of a cadmium telluride detector in a new tiny personal radiation chirper**

1979 IEEE Trans Nucl Sci Vol.NS-26 Pages 777-779

Wolf MA, Umbarger CJ, Entine G

53) **Crystal growth of CdTe for gamma-ray detectors**

1978 Nucl. Instrument Methods Vol.150 Pages 13-23

Wald FV, Entine G

Abstract

The paper aims at assessing the various crystal growth methods against the detector requirements and present information on the progress which has been made with these methods in the last few years. Its main conclusions are, that progress has been mainly achieved in growing larger crystal volumes and improving crystal purity and perfection, whereas little has been done to definitely establish the connection between the various crystal growth parameters and such fundamental properties as the mutau products which are influenced by the compensation methods used. Equally the question as to how the crystal growth or the compensation technique influences the polarization effect has not yet been resolved. Hence large volumes of sufficiently high mutau material to prepare spectrometers can still not be reliably achieved, although there are applications where the present material is quite useful.

52) **Cadmium telluride 133 Xe clearance detector for muscle blood flow studies.**

1978 IEEE Trans Nucl Sci Vol.NS-25 Pages 620-623

Cerretelli P, Blau M, Prendergast D, Eisenhardt C, Rennie DW, Steinbach J, Entine G

51) **CdTe photovoltaic gamma-ray dosimeter**

1978 Nucl Instru Methods Vol.157 Pages 65-69

Fox RJ, Agouridis DC

50) **Semiconductor probe measurements in beagle pups during deciduous tooth development**

1978 J Dental Res Vol.57 Pages 5-6

Jeffcoat MK, Kaplan, Weinstein M, Goldhaber P

49) **Review of CdTe medical applications**

1977 Rev Phys Appl Vol.12 Pages 355-359

Entine G

Abstract

CdTe sensors are now being used in several areas of nuclear medicine. CdTe probe techniques originally developed to study dental pathology in dog models, are being used clinically to diagnose venous thrombosis of the legs and to detect occult dental infections in patients scheduled for prosthetic cardiovascular and orthopedic surgery. Similar instrumentation is in use in animal research of myocardial infarction and synthetic tooth substitutes. Transmission techniques have also been developed to diagnose pulmonary edema and to measure bone mineral changes in space flight. Investigations are also underway in the use of linear or two dimensional arrays of CdTe gamma sensors for medical imaging. Economic considerations have slowed this work, but the technology appears to be available. Development of photoconductive CdTe X-ray detectors for CT scanners has also begun. Rapid detector improvement will be needed for success in this field, but the potential usefulness is very great. Together, the present application results are encouraging and wide use of CdTe detectors should occur within only a few years.

48) **High efficiency detection of tritium using silicon avalanche photodiodes**

1977 IEEE Transactions on Nuclear Science Vol.44 Pages 774-776

Shah KS, Gothoskar P, Farrell R, Gordon J

Abstract

*This paper describes our recent work in developing low noise silicon avalanche photodiodes (APD) for detection of tritium (/sup 3/H) beta -particles with high efficiency. In view of the very low energy of /sup 3/H beta -particles (E/sub max/=18 keV), research was carried out to produce APD structures with a very thin entrance window. This involved using low energy boron implantation into the APD front surface, followed by pulsed excimer laser annealing of the implanted face to form a p/sup +/ contact. The resulting devices had a surface dead layer of about 0.07 to 0.1 mu m and operated with a low noise threshold (250-300 eV) for 2*2 mm/sup 2/ size. The /sup 3/H beta -particle detection efficiency was measured to be approximately 50%. This is about the twice the detection efficiency achieved with standard APDs.*

47) **Improvements in the manufacture of CdTe gamma ray detectors**

1977 Rev de Physique Appl Vol.12 Page 141

Brelant S, Elliott M, Entine G, Hsu S

Abstract

Significant improvements have been made in the quality of chlorine-doped CdTe crystals manufactured by the traveling heater method (THM). In addition, a marked reduction in the variation among ingots and within each ingot has been observed. These results were achieved by modifying the temperature control equipment for the crystal growth process.

46) **Improvements In the Manufacture Of CdTe Gamma Ray Detectors**

1977 Rev Physique Appliquee (France) Vol.12 Pages 141-146

Breland S, Elliott M, Entine G, Hsu S

45) **The use of CdTe spectrometers in monitoring activity deposited in nuclear power stations**

1977 Rev Phys Appliquee (France) Vol.12 Pages 379-384

Jones LT

44) **Three-dimensional lung densitometer using CdTe detectors for diagnosis and evaluation of the progress of pulmonary edema**

1977 Rev Phys Appliquee (France) Vol.12 Pages 369-373

Kaufman L, Gamsu G, Savoca C, Swann S

43) **Use of CdTe detectors in bone mineral measurements**

1977 Rev Physique Appliquee (France) Vol.12 Pages 375-378

Vogel J, Ullman J, Entine G

42) **Thrombus detection using I-125-fibrinogen and CdTe probe**

1976 IEEE Trans Nucl Sci Vol.NS-23 Page 594

Garcia DA, Frisbie JH, Tow DE, Sasahara AA, Entine G

41) **Heat shield ablation sensor utilizing CdTe gamma detectors**

1976 IEEE Trans Nucl Sci Vol.NS-23 Page 498

Droms CR, Langdon WR, Robison AG, Entine G

Abstract

A miniaturized, flight proven gamma sensor embodying a CdTe device has been developed for applications of gamma backscatter to measurement of heat shield recession and nosetip shape change. A 10 mm diameter by 2 mm thick chlorine doped CdTe gamma detector operated at thick chlorine doped CdTe gamma detector operated at circa 50 volts bias was combined with an unusual preamplifier employing tripolar pulse shaping. The package, which incorporates mechanical isolation, damping, and component rigidization, has operated satisfactorily under tests at a random vibration level of 2 gc-2/Hz and peak sinusoidal acceleration of 10,000 gc at a frequency of 24 kHz. Several of these gamma sensors have been flown in a single vehicle to obtain measurements of changes in nosetip shape.

40) **Miniature hybrid preamplifier for CdTe detectors**

1976 IEEE Trans Nucl Sci Vol.NS-23 Pages 493-497

Baxter RD

39) **Experience in the development and use of CdTe gamma spectrometric systems for safeguards application**

1976 IEEE Trans Nucl Sci Vol.NS-23 Pages 70-74

deCarolis M, Gragnev T, Waligura A

38) **Measurement of absolute lung density by Compton-scatter densitometry**

1976 IEEE Trans Nucl Sci Vol.NS-23 Pages 599-605

Kaufman L, Gamsu G, Savoca C, Swann S, Murphey L, Hruska B, Palmer D, Ullman J

37) **Effects of 33-mev photon bombardment on the performance of CdTe gamma-ray detectors**

1976 IEEE Trans Nucl Sci Vol.NS-23 Pages 468-472

Nakano GH, Imhof WL, Kilner JR

36) **Status and prospects for CdTe detector applications**

1975 IEEE Trans Am Nucl Soc Vol.22 Pages 123-124

Entine G

Abstract

The applications of CdTe detectors to nuclear medicine, satellite spectroscopy, reactor monitoring, and heat shield ablation measurements are discussed

35) **Status and prospects for CdTe detector applications**

1975 ANS Meeting Vol.Dec.

Entine G

34) **Resolution improvement in CdTe gamma detectors using pulse shape discrimination**

1975 Nucl Instru Methods Vol.124 Pages 591-595

Jones LT, Woollam PB

33) **Semiconductor probe measurements in beagle dogs with periodontal disease**

1975 J Dental Res Vol.57

Kaplan ML, Jeffcoat MK, Goldhaber P

32) **Continuous high-field operation of CdTe gamma detectors with MIS-type contacts**

1974 Nucl Instru Methods Vol.117 Pages 305-307

Eichinger P, Halder N, Kemmer J

31) **Lateral diffusion of fisual pigment in photoreceptor disk membranes**

1974 Science Vol.185 Pages 457-459

Liebman PA, Entine G

30) **Time-dependent polarization of CdTe gamma-ray detectors**

1974 Nuc Instr and Methods Vol.117 Pages 267-271

Bell RO, Entine G, Serreze HB

Abstract

A decrease in the counting rate and charge collection efficiency of p-type CdTe gamma-ray detectors, starting from the time of first application of the electric field, has been observed. Momentary removal of the bias returns the detector to its initial state. The behavior can be understood in terms of deep acceptors which detrap holes and decrease the thickness of the space charge region. Non-polarizing detectors can be made by using either high work function contacts with appropriate surface preparation or by periodidic removal of the bias.

29) **On the photoconductivity of heavily indium doped zinc telluride at elevated temperatures**

1974 Mat Res Bull Vol.9 Pages 1157-1166

Bullitt J, Entine G, Wald FV

Abstract

ZnTe was prepared by solution growth from In solvents at 900 degrees C using the THM method. The crystals resulting contained approx. 6 x 10/19 atoms of In per cm/3 and were extremely high resistivity (>10/10 ?-cm). The photoconductivity measurements at elevated temperatures revealed that the peak photosensitivity occurs at 350 degrees C. The spectral dependence of the photoconductivity also shows some unusual features, in particular a subsidiary absorption at 630 nm which persists up to approx. 300 degrees C.

28) **Photoresponse of high resistivity cadmium telluride between room temperature and 400 degrees C**

1974 J Electronic Mat Vol.3 Page 155

Farrell R, Entine G, Wilson F, Wald FV

Abstract

The behavior of CdTe as an infrared photodetector to operate at 400 degrees C over the range between 0.8 and 1.2u was studied. It was shown that chlorine-doped CdTe indeed can be prepared to possess signal-to-noise ratios at 400 degrees C of 50:1 at 50 uW/cm2 of illumination with a 1 kHz bandwidth. Furthermore, iridium has proven to be a stable contact, and 1000-hr life tests of Ir-contacted CdTe chips in hermetically sealed, gas-filled TO8 transistor headers showed no significant variations in the signal-to-noise ratio.

27) **Observations on the relationship between structure and electrical performance in silicon ribbon solar cells**

1974 Mat Res B ull Vol.9 Pages 1421-1426

Serreze HB, Swartz JC, Entine G, Ravi KV

Abstract

A correlation between the presence of growth twins and the conversion efficiencies of solar cells made from silicon ribbons grown by the edge-defined, film-fed growth (EFG) technique has been observed. Ribbon samples with no twins furnish cells of the highest conversion efficiency (approx. 9% air mass zero) whereas those with twins have significantly degraded efficiency.

26) **Cadmium-telluride detector has highest sensitivity yet**

1974 Electronic Design Vol.12 Page 53

Entine G

25) **Detection of small bone abscesses with a high-resolution cadmium telluride probe**

1974 J Nucl Med Vol.15 Pages 892-895

Garcia DA, Entine G, Tow DE

Abstract

A cadmium telluride (CdTe) semiconductor probe was tested under clinical conditions as an external detector of medium-energy gamma rays and its performance was compared with that of the detector system of a rectilinear scanner. The two systems were used to detect acute infectious abscesses in dogs following the administration of 99m-Tc-polyphosphate (Tc-PP). The counting efficiency of the CdTe probe when held in contact with the jaw was 50 to 75% of that obtained with a 5-in NaI (Tl) crystal detector at a 3-in focal plane distance from its medium energy, fine-focus collimator (168 hole). The reproducibility of the CdTe probe measurements of normal teeth fell within a range of +/-13%. Diagnostically significant increases in Tc-PP uptake were detected in abscessed teeth with both detector systems within 1 to 2 weeks after infection as compared with intraoral radiography, which required 4 weeks for positive detection. In terms of spatial resolution, the CdTe probe proved to be superior in that it could readily distinguish contiguous normal and infected root tips less than 1 cm apart. In contrast, the NaI detector system was unable to distinguish the normal root tips of an uninfected tooth interposed between those of two adjacent infected teeth.

24) **High spatial resolution CdTe medical probes**

1974 IEEE Trans Nucl Sci Symp Vol.NS-2`1 Pages 726-730

Entine G, Serreze HV, Garcia DA

23) **Advances in CdTe gamma-ray detectors**

1973 IEEE Nucl Sci Symp Vol.Nov. 16

Serreze HB, Entine G, Bell RO, Wald FV

22) **Large area surface barriers on high resistivity cadmium telluride**

1973 J Electrochem Soc Vol.August

Serreze HB, Bell RO, Entine G, Wald F

Abstract

Cadmium telluride, because of its high average atomic number (50), its moderately large bandgap (1.44 eV), and its good carrier transport properties (u/e ~/= 1000 cm2/V-s, u-h ~/= 100 cm2/V-2, can be used for high efficiency solid state gamma-ray detectors. Efficient carrier collection, low noise, and high energy resolution have been achieved by fabricating surface barrier devices from high resistivity, halogen-doped, Te solvent grown, p-type CdTe. For optimum performance, these furnace barriers must have large area (>30 mm-2), low reverse current (<0.1 uA at 100 V), low nose (<30 keV), and high reverse bias capability (up to 1000 V).

21) **Halogen-doped CdTe gamma-ray detectors**

1972 19th Nucl Sci Symp Vol.Dec.

Entine G, Serreze HB, Bell RO, Entine G, Wald F

Abstract

20) **Synthesis of mono-, di-, and polynitroxides. Classification of electron spin resonance spectra of flexible dinitroxides dissolved in liquids and glasses.**

1971 J Am Chem Soc Vol.75 Page 2976

Ferruti P, Gill D, Klein MP, Wang H, Entine G, Calvin M

Abstract

The synthesis of flexible biradical strain gauges which could be anchored onto two sites of a deformable biological structure had been attempted. Qualitative relationships between the possible conformations of the biradicals and the observed esr spectra provided guidelines for further synthetic work. Some of the nitroxides synthesized and characterized are RCONR1(CH2)nNR2COR, where R is 1-oxyl-2-2,5,5-tetramethypyrroline bonded at the 3 position, n = 2,3, and R1,2 = -H; -C18H37; -CH2COOH; -CH2COOC2H5; -CH2CONH(CH2)2-N(CH3)2; -CH2CONH(CH2)2N+(CH3)3I-; -CH2CO imidazolide.

19) **A high-yield method for the preparation of anomalous water**

1971 J Phys Chem Vol.75 Page 2976

Brummer SB, Entine G, Bradspies JI, Lingertat H, Leung C

Abstract

An experimental method for the preparation of anomalous water and its involatile residue "polywater" in large glass tubes is described. This technique involves the use of flame-tapered Pyrex and quartz tubes. In contrast to previously reported results, every tube, up to the largest explored (23-mm i.d.), successfully produces material. The material thus prepared has an infrared spectrum similar to that reported for "polywater" and its molecular weight is similar to that reported in the Russian literature. Although the yields are still small (about 0.08 ug/cm-2 on quartz), the elimination of previously reported erratic behavior suggests that it will be possible to resolve the chemical nature of "polywater" by suitably scaling up the procedure to produce macroscopic quantities of material.

18) **Amomalous water -- properties and factors affecting its yield**

1971 J Colloid Interface Sci Vol.36 Page 489

Brummer SB, Cocks FH, Entine G, Bradspies JI

Abstract

Anomalous water and the residue left when it is evacuated--"polywater"--has been prepared in fine capillaries and or quartz plates. Its properties have been examined, and the factors affecting its yield explored. Yields of capillary-grown material are erratic. Thermal expansion and freezing data suggest similarity of this material to that reported in the Russian literature. A new result is that "polywater" contracts on solidification. This material is shown to decompose only slowly (within hours) at 650 degrees C, and rather rapidly at 750 degrees C. It is involatile at room temperature and survives mechanical displacement. It is deliquescent. Two factors have been shown to be important for determining the yield of anomalous water: the sate of the glass surface and the instability of the vapor-surface environment. Hydrated surfaces give higher yields than surfaces partially dehydrated by heating. This result accounts for the variable and poor yields in as-drawn capillaries. Chemical surface treatments to modify the distribution of silanol groups on the surface have a profound effect on "polywater" yields. A strong maximum in yield is associated with a surface treated to contain only vicinal OH's. Experiments with crystalline quartz and Na+-implanted silica are also reported. Instabilities in the vapor-solid environment lead to sharply increased yields of anomalous water in capillaries. Pyrex capillaries are much more effective than quartz. It is shown that the product does not arise from impurities carried into the capillaries by creep of a liquid film from the water source over the surface of the cell. Rather, it results from a vapor-capillary reaction.

17) **Etching of submicron pores in irradiated mica**

1970 J Appl Phys Vol.41 Pages 1454-1459

Bean CP, Doyle MV, Entine G

Abstract

As discovered by Price and Walker, small uniform pores may be created in muscovite by etching in HF thin samples that have been subjected to fission particle irradiation. The process of pore growth is followed by monitoring the conductance across a thin sample as the etching proceeds. For irradiation with 252-Cf, the tracks quickly etch to a radius of 33 A--the region of primary damage. Further radial etching in the undamaged material is slow but increases to a fixed rate as the radius increases. This radius dependence of etching is interpreted by a kinetic analog of the Kelvin equation for vapor pressure over curved surfaces. With suitable assumptions on the mechanism of attack, the surface energy of the muscovite-solution interface is calculated to be about 300 ergs/cm-2.

16) **Interpretation of birefringence changes during nerve excitation**

1970 Biophys Soc Meeting Vol.Feb.

Entine G, Calvin M, Wang H

15) **Radiance of deuterium arc lamps**

1969 Appl Optics Vol.8 Page 1502

Liebman PA, Entine G

Abstract

In extending the range of our visible light recording microspectrophotometer intop the uv, we were recently faced with the problem of selecting a suitable light source. We chose the deuterium arc over xenon because arc instability and stray light in the visible made the performance of the latter unacceptable. The sizeable uv output, low visible output, and good arc stability make the deuterium lamp more sutable for our work. Deuterium arc lamps are made by several manufacturers in either an air convection cooled or higher power, water cooled version. Power consumptions range from 30 W to 200 W. In choosing a specific lamp, our requirement was for the highest radiance with little requirement on source size since we work with microscopic objects. However, we could not find any figures from manufacturers which allowed us to compare radiance of one lamp with another. It should be well known that the input power ratings of lamps mean little as far as radiance is concerned and a lamp rated at twice the power of another is likely to just be twice the size. We, therefore, set out to test several deuterium lamps in order to ascertain whether on a relative scale, one lamp was any brighter than another.

14) **Biradical spin labeling for nerve membranes**

1969 Proc Natl Acad Sci Vol.63 Pages 1-8

Calvin M, Wang HH, Entine G, Gill D, Ferruti P, Harpold MA, Klein MP

Abstract

We have explored the behavior of pair interaction in a suitable biradical when it is bound by van der Waals' forces in a nerve membrane. We have concomitantly examined a set of model solvents to represent this situation. It appears that the biradical suffers a restriction of internal motion with a minimal restraint on its external motion in the nerve medium. The biradical is so situated as not to respond to the passage of the action potential.

13) **Ubiquinone in the retina**

1968 Vision Res Vol.8 Pages 215-219

Entine G, Liebman Pa, Storey BT

Abstract

The recent contention of Tranzer and Pearse (1963) and Pearse (1965) that photoreceptor outer segments contain large amounts of ubiquinone has resulted in a number of efforts to integrate this information into a mechanism of photoelectric transduction for the retina in which the quinone would serve as an electron donor or acceptor with visual pigment (Graymore, 1966). In view of the probably, if still problematical (Green and Brierly, 1965; Chance, 1965), we shared the excitement of anticipating that quinones might play an important role as electron acceptors in visual excitation. A hypothesis of electron transport from photoexcited visual pigment to some electron acceptor has already been proposed by Jahn (1963). The demonstration of the presence of a suitable acceptor such as quinone might provide a specific mechanism for this hypothesis and an experimental handle for its testing.

12) **Visual pigments of frog and tadpole (Rana Pipiens)**

1968 Vision Res Vol.8 Pages 761-775

Liebman PA, Entine G

Abstract

Transfer of visual information in the retina is initiated in a number of morphologically distinct types of photoreceptors. Though rods and cones are the most obvious and classical categories, in the frog two types of rod (red and green), as well as three types of cone (single, principal and accessory) in two arrangements (single and double) have been noted.

11) **Birefringence changes of excited nerve axons**

1968 Neurosci Res Program Meeting Vol.July

Entine G

Abstract

10) **Cyanopsin, a visual pigment of retinal origin**

1967 Nature Vol.216 Pages 501-503

Liebman PA, Entine G

9) **Search for optical adsorbance, optical rotary dispersion, chemoluminiscence, and induced luminescence changes in excited nerve axons**

1967 LRL Quart Rep Vol.Aug.

Entine G, Lussan C

8) **Microspectrophotometry of excited nerve axons**

1967 LRL Quart Rep Vol.May

Entine G, Lussan C

7) **Systematic relations among vision pigments**

1967 Biophys Soc Meeting Vol.Feb.

Liebman PA, Entine G

6) **Photosensitive pigments of tadpole retina**

1966 Biophys Soc Meeting Vol.Feb.

Liebman PA, Entine G

5) **Spectroscopic studies of single frog photoreceptors and pigment epithelial cells**

1965 Biophys Soc Meeting Vol.Feb.

Liebman PA, Entine G

4) **Sensitive low-light-level microspectrophotometer: Detection of photosensitive pigments of retinal cones**

1964 J Optical Soc Am Vol.54 Pages 1451-1459

Liebman PA, Entine G

Abstract

A microspectrophotometer of exceptional sensitivity has been constructed to record absorption spectra of visual pigments in single cells using minimum light. With this equipment, pigments of individual cones have been recorded in regions of less than 1 u radium, with minimum bleaching. The instrument is simple and flexible in design, and uses commercially available components throughout. This paper reviews some general design considerations, the character and performance of our equipment, and one of the results obtained with retinal cones.

3) **Notes on etching of submicron pores in irradiated mica**

1964 Gordon Conf. Vol.Sep.

Bean CP, Doyle MV, Entine G

2) **Photosensitive pigments of retinal cones**

1964 Biophys Soc Meeting Vol.Feb.

Liebman PA, Entine G

1) **In vivo labelling of renal calculi with technetium 99 m methylene diphosphonate**

55 Vol.39-41 Page 1982

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