PUBLICATIONS


The following papers were presented at the 2nd Int. Symp. on Ocular Circulation and Neovascularization, Wilmer Institute, Baltimore (25-28 Sep 1989):

Flower, R. W., and Klein, G. J. (APL), and Baumgartner, R. H. (St. Gallen Eye Clinic, Switzerland), "Current Technology for Recording and Analyzing ICG Choroidal Angiograms." 2nd Int. Symp. on the Choroid, Wolfsberg, Switzerland (30 Apr-3 May 1989).


Flower, R. W., Klein, G. J., and Baumgartner, R. H. (St. Gallen Eye Clinic, Switzerland), "Extraction of Dynamic Information from Choroidal Angiography."
The following papers were presented at the 3rd DoD Symp. on Electromagnetic Windows, Huntsville, Ala. (14-19 Nov 1989):

Thomas, M. E., "Electromagnetic Properties of Dual Mode Materials for IR/RF Domes."

The following papers were presented at the Mid-Atlantic Regional Probability and Statistics Day, NIST, Gaithersburg, Md. (21 Oct 1989):

Chin, D. C., "A Constrained Optimization Technique for a Multivariate Convex Function."
Maryak, J. L., and Asher, M. S., "Isolating Modeling Errors in the Parameters of State-Space Models."
Spall, J. C., "Effect of Impricisely Known Nuisance Parameters on Estimate of State-Space Parameters."

U.S. PATENTS (1989)

B. F. Kim and J. Bohandy, Image Classifier, No. 4,799,270, 17 Jan:
A hierarchical and recursive computer system capable of classifying, identifying, and analyzing images. The speed at which the system recognizes particular images depends on the time interval from the last encounter, such that more frequently encountered images will be recognized more quickly.

R. E. Jenkins, D. G. Lee, Jr., R. C. Moore, and K. Strohbehn, Cellular Logic Processor, No. 4,805,228, 14 Feb:
A cellular logic operation processor for performing transformation, according to a controlled sequence, of the data points of a first matrix into a corresponding number of data points of a second matrix. The processor has application in areas such as scientific research, image analysis, and signal processing, where vast amounts of data are produced and must be analyzed.

H. W. Ko, Non-Invasive Electromagnetic Technique for Monitoring Time-Trends of Physiological Changes at a Particular Location in the Brain, No. 4,819,648, 11 Apr:
A method and apparatus for non-invasively sensing physiological changes in the brain by using an electromagnetic field to measure localized impedance changes in brain matter and fluids. The technique has particular application in providing time-trend measurements of the process of brain edema associated with head trauma.

An ultrasonic transducer is used to locate a kidney stone or other body concretion and to control the positioning of a shock wave generator to focus the shock wave on the kidney stone. The ultrasonic transducer and the shock wave generator form an integral structure, with a common axial alignment. A second transducer means is provided to assist in determining the position of the ultrasonic transducer/shock wave generator structure relative to the body concretion.

A. L. Newman, Optimized Capacitive Sensor for Chemical Analysis and Measurement, No. 4,822,566, 18 Apr:
An apparatus for detecting the presence and/or measuring the concentration of an analyte in the fluid medium. The apparatus relies on biospecific binding between a biochemical binding system and the analyte to change the dielectric properties of a capacitive affinity sensor.

R. S. Potember and T. O. Poehler, Multistate Optical Switching and Memory Apparatus Using an Amphoteric Organic Charge Transfer Material, No. 4,825,408, 25 Apr:
An optical storage medium formed of organic charge transfer material that switches to one of a plurality of optically detectable states when illuminated by a controlled source of optical energy such as a laser. It is contemplated that by properly varying the intensity and duration of the illuminating beam, data can be written, read, and erased (multiple bits per each data storage spot) with a single laser source.

J. G. Parker, Two-Band Optical Comparator for Use with Chopped CW Singlet Oxygen Monitor, No. 4,827,938, 9 May:
Apparatus to improve the detection of the singlet oxygen emission produced during photoradiation therapy, and thereby better determine the effectiveness of the therapy.

R. C. Moore, Apparatus for Categorizing and Accumulating Events, No. 4,833,629, 23 May:
Digital signals that characterize the events of interest are input to the apparatus. By means of a look-up storage device having a plurality of individually addressable memory locations, the events are categorized and the counts of the various event types are accumulated at a high rate.

A. J. Cote, Jr., Speech Waveform Analyzer and a Method to Display Phoneme Information, No. 4,833,716, 23 May:
A speech analyzer that displays a three-dimensional spectral vector, representing a phoneme, on a simplified two-dimensional display.

J. C. Lesho and A. F. Hogrefe, Ingestible Size Continuously Transmitting Temperature Monitoring Pill, No. 4,844,076, 4 Jul:
A temperature-responsive transmitter that is capable of being encapsulated within an ingestible size pill. A unique circuit configuration uses a reduced number of components and allows the transmitter to operate with a small single-cell 1.0-1.5-volt battery.

H. W. Ko and J. P. Skura, Electromagnetic Non-Invasive Measurement and Monitoring System for Osteoporosis, No. 4,850,372, 25 Jul:
A method for noninvasively sensing bone mass loss associated with osteoporosis uses an electromagnetic field to measure impedance (or conductivity) changes in the bone. A decrease in conductivity is indicative of osteoporosis.

Johns Hopkins APL Technical Digest, Volume 11, Numbers 1 and 2 (1990)
Superconductivity is detected by measuring the resistance of a sample while one of two independent variables, temperature and applied magnetic field, is slowly varied or modulated and the other is maintained below its known critical value. Resistance is measured at the modulation frequency by phase detection techniques.

An electromagnetic field is used to measure impedance changes at or about a bone fracture site during the healing process. The impedance change is a measure of the mechanical strength of the fracture site.

A phase lock loop circuit employing a temperature compensated crystal oscillator is used to stabilize the RF output of a voltage-controlled SAW oscillator.

Communications between a plurality of computers connected to a common bus is controlled by means of message content tags that identify the information content of each particular message broadcast. A message filter associated with each computer is responsive to the message content tag and alerts the associated computer to receive the particular message only if an appropriate content tag is present.

An implantable, inflatable helical cuff designed to be wrapped about a tubular body member such as a blood vessel. The cuff may be used, for example, to control occlusion of the vessel or to sense blood pressure.