Timothy Pletcher

Principal Systems Engineer - Sarnoff Corporation

Eastampton, NJ - Email me on Indeed: indeed.com/r/Timothy-Pletcher/fcbfe6bd9604427a

Obtain technical leadership position with company that believes innovation, continuous technical progress, and that strong market presence and intelligence are the key ingredients for business growth and prosperity. Authorized to work in the US for any employer

WORK EXPERIENCE

Principal Systems Engineer

Sarnoff Corporation - Princeton, NJ - 1992 to Present

08540

Responsibilities vary on an assignment to assignment basis and cover full range of R&D activities. Primary responsibility is principal investigator or technical lead on a large number of projects. Other activities include project planning, client management, and sales and marketing initiatives. Representative projects are listed below:

Biometric identification module for digital door lock

Technical lead for biometric identification product development designed for an Asian manufacturer. Responsibilities included optical design, optical specification, system design and preliminary component selection as part of effort to produce a low cost, high volume, high performance (FRR < 2%, FAR < 1e-6) identification system based upon iris recognition. Developed innovative illumination and focus technique needed to extend effective range of system needed to accommodate wide range of user heights (43 inches to 78 inches). Developed calibration and factory test procedure needed to produce high product yield and consistent module performance with widely varying component specifications.

Military imaging and recording systems

Developed a number of unique imaging systems (cameras and recorders) designed to meet current and future needs of US Army vehicle platforms. Systems consisted of both visible and LWIR camera systems and included tracking and other specialized signal processing required for the wide range of operating conditions demanded by the applications. Specific responsibilities included sensor performance analysis, requirements analysis, system design, and development of software design and system testing specifications.

Electrostatic bio-aerosol collection systems

Principal investigator and inventor for a wide variety of aerosol particle collection systems. These systems are designed primarily to sample and efficiently extract particulate in the 0.5um - 10um particle diameter range from ambient air for subsequent interrogation by chemical and biological identification systems. Examples of such systems include extraction of particulate into a variety of solutions, onto tightly focused (< 0.5mm diameter) spots, and particle sorting systems that use a fluorescence interrogation circuit to separate biological particles from non-biological particles.

Golf ball locating circuit for consumer products company

Inventor and principle investigator of imaging product designed to locate lost golf balls. Designed and developed all image processing algorithms and methods needed to locate hidden golf balls (3 dimples exposed) at ranges up to 35 feet. Successful demonstration of system led to the expeditious raising of capital needed for the manufacturing product design and development. Successfully transferred image processing concepts and algorithms to the collaborative manufacturing company.

Low dose pharmaceutical manufacturing system

Primary inventor of electrostatic pharmaceutical powder deposition system designed for manufacture of low dose (25ug/dose to 5mg/dose) tablets. While serving as principal investigator on this very large ($32M over four years) program, significant contributions were made through inventions such as a state-of-the-art dose metering system that employed low level electrical current (10-15A- 10-11A) sensing and a unique electric field shut-off mechanism, ion-free powder charging mechanism, two different charge to mass (q/m) ratio measurement systems, high efficiency focusing mechanism, and a method for extending the achievable dose range below 25ug.

Ion-free industrial powder sprayer and programmable film thickness control system

Principal investigator of internally funded project to apply an ion-free powder charging mechanism to the industrial powder sprays painting industry. Collaborated with marketing to identify key market opportunities in the areas of controllable film thickness and color mixing. Developed methodology, prototype and spraying system that provided film thickness control, spraying algorithms for 3-D geometries, and methodology for color matching on the industrial paint line.

High performance, low cost switched mode power supply

Designed and prototyped a 130W, 90% efficient, off-line power converter with power factor correction for an Asian consumer display manufacturer. The design was intended for the European marketplace as means for complying with the new power factor correction regulations. Co-inventor on four different patents including power supply architecture and standby power regulation circuits.

Low cost, electrosurgical laparoscopic cutting device interlock

Developed electronic interlock safety mechanism for an electro-surgical cutting tool manufacturer. Interlock system relied upon a color-coded band located at cutting tool tip as means of confirming a physician's ability to visually perceive the cutting procedure. Developed methodology for determining color, size, and location of color-coded band. Developed video signal processing circuitry and detection algorithm for product design.

Other representative projects while at Sarnoff

Performed competitive analysis of low light level CMOS VIS/NIR imager technologies
Led project to cost reduce set camera electronics by factor of 10X
Produced feasibility study evaluating low cost endoscope manufacturing for Asia
Developed prototype 300 dpi solid-state Ionographic Printhead Array
Signal Processing Design and Circuitry for SPO2 sensor development
Signal Pre-processing Design and Circuitry for apnea audio diagnostic system
Digital Video Spatial Non-uniformity Correction Circuit
Ionographic Printing System for Hybrid Thick Film Circuits

Electronic Packaging Feasibility Study for Electrochromic Eyewear Manufacturer
Cost Reduction Feasibility Study for Refrigerated Freight Temperature Logging Device

Consultant
PA Consulting Group - Hightstown, NJ - 1988 to 1992

Primary responsibilities were as a design engineer and supporting the sales process for a large number of clients and products. Significant contributions were made in the areas or grey scale ionographic printer design, digital AC motor controller, and the video signal processing circuits required for a high speed label reader and electronic check book.

Design Engineer
Fairchild Weston Corporation - Syosset, NY - 1986 to 1988

Designed and fabricated digital video processing circuits for MWIR camera systems.

Design Engineer
RCA Corporation - Moorestown, NJ - 1985 to 1986

Designed and fabricated digital video processing circuits for MWIR camera systems.

Design Engineer
Naval Air Development Center - Warminster, PA - 1979 to 1985

Responsibilities included digital design and programming for naval communication systems.

Awards and Citations
27 issued US patents
6 Sarnoff technical achievement awards
1987 PA Consulting Group Outstanding Engineer Award

Design Engineer
Naval Air Development Center - 1984 to 1984

Outstanding Technical Publication Award

EDUCATION

MSEE
Drexel University - Philadelphia, PA
1989

BSEE
Drexel University - Philadelphia, PA
1983