

SAMUEL F. PELLICORI

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OPTICAL ENGINEERING EXPERTISE

Experience in the field of optical engineering includes concept and design generation, hardware specification, evaluation and verification, and problem solving. Specifically, my expertise is in two areas: 1) optical thin film design, application modeling and system analysis, and includes deposition technology, diagnostics, and production; and 2) the design and development of optical instruments for detection and monitoring applications in the UV to the IR regions. These include remote sensing, medical, and laboratory analysis applications. In more than 30 years of experience, I have assisted companies world-wide ranging in size from small start-ups to major corporations in product development, problem diagnosis and correction, and test equipment design. I have participated in several government contracts (including SBIR), and in patent disclosure preparation.

PELLICORI OPTICAL CONSULTING, founded in 1986, is an independent small business operation providing the above mentioned engineering functions for private industry, medical, commercial, entertainment, and aerospace companies. Applications of system and component design and development have involved spectral radiometry, polarimetry, image scanning and production (machine vision), and optical data storage techniques. Also available are services in thin film coating design, modeling, specification, and deposition process development for critical UV through Far-IR applications.

CHRONOLOGICAL EXPERIENCE

1986 to present **Pellicori Optical Consulting**, CEO and Owner. Consulted with about 96 companies in the optical industry.

1991 to Present **Brooks Institute of Photography**, Instructor: Basic Optics, Graduate course: Optical System Theory.

1984 to 1990 **Santa Barbara Science Discovery Center**, Co-founder and Board Member, hands-on educational exhibit design.

1969 to 1986 **Hughes Santa Barbara Research Center, Physics Staff**

Microelectronics Engineering and Fabrication Dept., Project Manager, R&D of special optical interference coatings for infrared and laser applications (annual budget \$200K); **Detector Process Engineering Section**, semiconductor surface analysis and material studies; **Electro-optical Instrumentation Dept.**, design and engineering of imaging, radiometry, photometry, spectrometry instruments for outer planet exploration and earth resources remote sensing.

1961 to 1969 **University of Arizona Lunar and Planetary Lab** Program manager/designer of balloon- and ground-based astronomical instrumentation; lunar surface optical properties studies (Master's Thesis); planetary image enhancement.

EDUCATION: University of Arizona: B.S. Physics, and M.S. Optical Sciences.

AFFILIATIONS AND HONORS:

Optical Society of America; Society of Applied Spectroscopy, SPIE, SVC.
 Sigma Xi, The Scientific Research Society
 Universities Carbon Films and Materials Group, a collection of British Universities and European industries engaged in R&D of Diamond Films
 NASA Public Service Group Achievement Award for Pioneer 10 Instrument Team, 1974
 George Eastman Traveling Lecturer for Optical Society of America, 1986
 Member and Principal Investigator, Shroud of Turin Research Project 1978-

PATENTS and Co-Patents:

High Absorption IR Coatings; Wedge Spectrometer Imager; Laser Rejection Filters; Detector AR Coatings, Rugate Filters, Wear Resistant Windows, Test Illuminator for CCD Arrays, Display panel coatings; Others pending.

BIBLIOGRAPHY of PUBLISHED TECHNICAL PAPERS

Optical Coatings

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- Miller, S. C., K. K. Mackamul, and S. F. Pellicori: New Carbon:Silicon Materials for Optical Applications, Proc. SPIE 969-23 14-19 Aug.(1988).
- Pellicori, S. F. and E. Colton: Fluoride Compounds for IR Coatings, Thin Solid Films 209,109 (1992).

Instrumentation

Teska, T.M., Roland, E.H. and Pellicori, S.F.: Modular Optical Test Instrument for 1700-10000Å, Rev. Sci. Instru. 36, 611 (1965).

Pellicori, S. F. and P. R. Gray: Automatic Polarimeter for Space Applications, Appl. Opt. 6, 1121 (1967).

P. R. Gray, S. F. Pellicori and M. Arthur: Gondola Azimuth Stabilization Using a Simple Lunar Tracker, Facilities for Atmospheric Research No. 8, 13, Mar 1969.

Pellicori, S.F., Russell, E.E. and Watts, L.A.: Pioneer Imaging Photopolarimeter Optical System, Appl. Opt. 12, 1246 (1973).

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Optical Materials Studies

Pellicori, S. F., C. A. Johnson, and F. T. King: Solid Organic Filters for 2000 to 3000Å, Appl Opt. 5, 1916 (1966).

Pellicori, S. F.: Notes on Liquid-Filter Cells, Comm. Lunar and Planetary Lab. No. 140, 8, 97 (1969).

Pellicori, S. F.: Optical Bonding Agents for Severe Environments, Appl. Opt. 9, 2581 (1970).

Pellicori, S.F.: Transmittances of Some Optical Materials for Use Between 1900 and 3400Å, Appl. Opt. 3, 361 (1964).

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Special Opto-Forensic Investigation (Shroud of Turin)

Pellicori, S.F. and Chandos, R.A.: Portable Unit Permits UV/VIS Study of 'Shroud', Ind. Res. and Devel., 23, 186 (1981).

Pellicori, S.F.: Optical Properties of the Shroud of Turin, Appl Opt. 19, 1913 (1980).

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Lunar Surface Studies

Pellicori, S. F.: On The Polarization- Albedo Relationship for the Lunar Surface, Nature 221,162 (1969).

Pellicori, S.F.: Polarizing Properties of Pulverized Materials; Application to the Lunar Surface, Thesis, Univ. Arizona, May (1969), and Tech. Rept. 42 Optical Sciences Center, July (1969).

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R. I. Mitchell and S. F. Pellicori: UBVRI Photometry of Selected Lunar Regions, *The Moon II*, 121 (1970).

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