

RESUME

Name: Donald C. Dilworth

Education: MIT, B.S. in physics, 1961

Experience:

Mr. Dilworth is president of Optical Systems Design, Inc., and has since 1961 been intensively involved in development and application of computer software for optical design. He has extensive experience in most areas of lens design, particularly in thermal infrared systems, and is the author of the well-known SYNOPSIS lens design program, which is widely used by lens designers worldwide.

As author of SYNOPSIS, Mr. Dilworth has advanced the state of the art in the areas of artificial intelligence (AI) and with the development of the popular PSD (Pseudo Second Derivative) optimization method.

He was senior principal development engineer at the Honeywell Radiation Center, where he was responsible for conceptual and detailed design, tolerancing, and analysis of numerous IR and visible-light systems, including startrackers, periscope optics, and FLIRs.

He was director of the optical design department at Baus Optics, Inc., where he developed and implemented techniques for the design of geometric and thin-film optics.

Prior to joining Baus Optics, Mr. Dilworth was employed by Itek Corporation as Senior Optical Physicist. In this capacity he was responsible for designing a variety of advanced optical systems, including aerial photographic lenses used on the recently declassified Corona project, aspheric systems, multilayer dielectric coatings, and a submarine periscope.

At the Massachusetts Institute of Technology, he developed computational techniques for optical and thin-film design, which were applied to the design of the optical navigation equipment for the Apollo project.

Patents: "A Telecentric Lens Imaging System"
"Extreme Wide-angle Eyepiece with Minimal Aberrations"

Publications:

1. "Fast MTF Calculation in the Presence of Diffraction", Appl. Opt. 11, 1101, (1972).
2. "Pseudo-second-derivative Matrix and its Application to Automatic Lens Design", Appl. Opt., 17, 3372, (1978).
3. "Improved convergence with the pseudo-second-derivative (PSD) Optimization Method", SPIE Vol. 399, 159, (1983).
4. "An Infrared Alignment Telescope", SPIE Vol. 483, 45, (1984).
5. "Automatic Lens Optimization: Recent Improvements", SPIE Vol. 554, 191, (1986).
6. "A Multilevel Approach to User-friendly Lens Design", SPIE Vol. 655, 6, (1986).
7. "Applications of Artificial Intelligence to Computer-aided Lens Design", SPIE Vol. 766, 91, (1987).

8. "SYNOPSISYS: a State-of-the-art Package for Lens Design", SPIE Vol. 766, 264, (1987).

Clearance:

None at present; secret at Itek and at Honeywell, confidential at MIT.