

Guest Editorial

Optical Design Problems in Laser Systems

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We have selected for this issue of Optical Engineering six papers from the approximately two dozen that were presented at the SPIE seminar on Optical Design Problems in Laser Systems, August 21-22, 1975, San Diego, California.

The introductory paper by W. R. Sooy is a succinct and incisive overview of the whole field of lasers and optics that reflects the enormous depth and breadth of Dr. Sooy's experience and contributions in both industry and government in laser-related optical science.

Some novel applications that were aired in the session are presented in the papers on laser surgery, coherent optical adaptive techniques and lateral interferometry respectively by Michael Bass, James E. Pearson and Sandor Holly. Although comparatively unrelated, these topics share the heritage of passing through a long incubation from early in the laser era (which dates in a practical sense from summer of 1960) to the point of convincing demonstrations.

The two papers by Michael Monsler and James A. Glaze summarize the accomplishments and state-of-the-art of groups addressing respectively the problems of high average and high peak power lasers. The first represents the achievements of several groups. The second paper demonstrates that despite the creditability difficulties of a program that requires at least one major fundamental invention to reach a generally useful objective, the Livermore fusion program has done excellent physics and engineering in high peak power solid state lasers.

All of the papers support the thesis that laser system optical design is still in a comparatively early state of evolution and should continue to generate major developments of considerable interest for some time to come. ◻