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Introduction

The sixteenth in the series of Infrared Spaceborne Remote Sensing and Instrumentation Conference took place once again in San Diego, California, 11–13 August 2008. Forty-eight papers were scheduled for presentation at this event, most of them oral presentations. The Remote Sensing Plenary Session of five 45-minutes talks was incorporated on the second afternoon of a three-day conference. I am happy to report that the next conference will take place in San Diego, 4–8 August 2009. Our conference is one of nine that constitute the remote sensing track of the Optical Engineering and Applications Symposium. This has been the backbone of the SPIE annual meeting in San Diego since the earliest times, as we can deduce from the renaming several decades ago of SPIE–The International Society for Optical Engineering, from the initial name of Society for Photo-Optical Instrumentation Engineers. I like both of these names, even though the society is moving in all directions from its initial calling. This is probably because of all the things that I do, I like engineering the best. And I do many things, but in each one of them, I emphasize those activities that represent engineering tasks.

From the distribution of photos that ornament the program, and papers that are organized, one cannot help but notice that engineering is now superseded by processes and technologies at this conference. We observe that nano-science, nano-engineering, photonic devices, and optical engineering are the primary focus and interest, and so we have eliminated solar energy as a topic.

This means that optical engineering includes the largest number of conferences, and the largest contributions to those conferences. With 24 conferences out of 46 total in this rough analysis, optical engineering represents nearly one half. In terms of focused conference contributions, optical engineering slightly supersedes photonic devices, and is appreciably superior to the formation of critical mass or intellect in conferences, such as those in nano-science. Yet these are the conferences with larger participation, large and new funding, and tremendous growth potential. Here, I must include solar energy, where only significant technology improvement will result in favorable conditions for realistic solar energy exploitation. While nano-science and single-molecular processing fields are bringing in many new practitioners, the most significant contribution of SPIE is and will remain the establishment of easily accessible data.

With the data that SPIE is establishing, the old adage that everything is rediscovered in 30 years, formerly a life-span of an active scientist, will be set to rest. Recently a young colleague of mine published some work on rare-earth doped YAG nanoparticles. I suggested that he might benefit from reading on the rare-earth doped YAGs. He told me that he was interested in nanoparticles,

rather than the first three words. If he reads about it and worse, references it, he cannot publish it as his discovery.

Well engineering is a bit different. I do not know how electron microscopes are aligned nowadays, I imagine it is all done by computers, and I suspect they are all imported from Germany/Netherlands and Japan. I do know that optical engineering is flourishing, and the genie that is one good design that escapes a thoughtful and careful designer can and will again be put in bottle. One man's design is copied, improved, inverse-engineered, and optimized, not because he published it, but because his product was excellent.

This brings me to the dedication of this volume to one of the greatest engineers and human beings that I have known, Dr. Warren Smith. I have first known him through his first book, *Modern Optical Engineering*, written by a knowledgeable man and generous to all who were willing to learn from him. He was one of the great individuals who helped make SPIE a society of prestige and presence in both scientific and engineering circles. On several occasions, I had an opportunity to share a table with him at the fellows luncheon. Without me having to ask him, Dr. Smith offered to send me the solutions to the problems in his Optical Engineering book, after I told him that I used it as a textbook in my class. A few years later, I was invited to write a chapter on Telescopes. This required me to read a few patents, a few scientific papers published on this subject, and a few books already published on general subjects of optical design and optical engineering, include his book *Lens Design*.

Suffice it to say that Dr. Smith's designs were consistently reproducible and that the design philosophy that he promotes allows you to bend surfaces as if they were still made of clay. Dr. Smith's generosity to all who wanted to learn from him was without limits, most likely because he knew that with his knowledge and experience he could always solve another problem better than it had ever been done before.

Now, I can no longer hope to sit at the same table at some future annual meeting with Warren. He once came late to one such meeting, and said that the most deserving comment about him is that he was the last to enter. I know that I will miss him, as will the whole community of optical engineers who gained from him on-the-job training in the art and science of optical engineering.

Warren will be missed not just for the knowledge that he left for us in his books, but for his warmth, sense of humor, generosity, and willingness to give. I wish to dedicate this volume to Dr. Warren Smith, an unsurpassed optical engineer and a first-class human being.

Marija Strojnik