



Editorial

H. J. Caulfield, Editor

Yuri K. Denisyuk

Your editor was fortunate to have an interview with the man who, along with Emmett Leith and Juris Upatnieks at the University of Michigan, was responsible for the rebirth of holography in the early 1960s. Professor Denisyuk is seldom seen in the West so I would like to share parts of the conversation that I had with him at the Volvilov Optical Institute, Leningrad, this October 1982. He is a vigorous and enthusiastic man with a great deal of personal charm. Our conversations were of special interest to me because they supported my suspicion that truly great scientists are not merely smarter and harder working than the rest of us, but also are skilled at formulating both questions and answers in starkly simple ways.

A beautiful example of this in Denisyuk's earlier work was his demonstration that a thick hologram of a thick phase object came to resemble the object itself. I asked if he sensed this concept and set out to prove it (as I suspected). "No," he replied, "I analyzed the problem in depth and finally 'realized' what the results were telling me."

A recent equally beautiful result was "discovered" in the same way when he analyzed phase conjugation of laser radiation from a moving target. The conjugated wave is imperfect (failing to return to its point of origin). Denisyuk formulated this result in a wonderful way: the conjugated beam "predicts" target motion and aims not for where the point was but for where it will be when the conjugated light returns.

I will mention one more highlight of our conversation. He has now developed materials and techniques for making extremely bright and vivid full color reflection holograms. The hologram I saw was small (perhaps 10 cm \times 10 cm) but quite beautiful. He says increased size is the problem currently being attacked. The implications for display holography are profound and obvious.

These three examples of Denisyuk's brilliant work have, it seems to me, one thing in common. They are the result of long, painstaking, brilliant efforts. The world owes much to this man and we all look forward to much more from him.

OPTICAL ENGINEERING EDITORIAL SCHEDULE

January/February 1983

Obscuration Effects on Electro-Optic, Infrared, and Millimeter Wave Systems Performance

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March/April 1983

Submicron Lithography

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May/June 1983

Raman Spectroscopy

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July/August 1983

Laser Damage in Materials

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September/October 1983

Fluorescence

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November/December 1983

Spatial Light Modulators

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