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A Final Report  
Grant No. N00014-92-J-1014  
October 1, 1991 - September 30, 1992



1991 INTERNATIONAL SEMICONDUCTOR DEVICE  
RESEARCH SYMPOSIUM (ISDRS-91)

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Submitted to:

Office of Naval Research  
800 North Quincy Street  
Arlington, VA 22217-5000

Attention:

Yoon Soo Park  
Code 1212

Submitted by:

Michael Shur  
John Marshall Money Professor

Report No. UVA/525465/EE92/101

March 1992

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Department of Electrical Engineering  
SCHOOL OF ENGINEERING AND APPLIED SCIENCE  
UNIVERSITY OF VIRGINIA  
CHARLOTTESVILLE, VIRGINIA

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## Final Report

The first International Semiconductor Device Research Symposium (ISDRS-91) took place in Charlottesville, VA, on December 4-6, 1991. We dedicated this Symposium to the memory of Professor Aldert van der Ziel (December 12, 1910 - January 20, 1991). Professor van der Ziel was a great scientist and a recognized leader in research on semiconductor device noise. Those of us who were fortunate to know him personally will always remember him as a kind and compassionate person, a real Teacher who became a role model for his students and associates.

Our goal in starting a new international meeting was to provide a convenient forum for the exchange of information and new ideas for researchers from industry, university, and government laboratories. To this end, we had an unusually short period between the submission of papers and the conference; a speedy publication of the proceedings, poster sessions, panel discussions, and a wide dissemination of the conference proceedings. Our other goal was to make this conference truly international. To achieve this, we invited leading researchers from the United States, Canada, Europe, Asia, and the former Soviet Union.

This symposium was the first international conference of its kind to take place after the August 1991 coup attempt in the Soviet Union. A unique feature of this conference was the presence of an unusually large contingent of Russian scientists.

The emphasis of the ISDRS-91 program was on novel ideas, advanced semiconductor device structures, and new semiconductor technologies still in their infancy; in other words, the symposium was primarily on research whose tangible technological outcomes are not expected for another five to ten years. This feature of the symposium may be what has attracted the Russians to the conference because, when the economic turmoil in the Soviet Union was over, Russia hopes to emerge as a new high technology and economic power to be reckoned with in the twenty-first century. The high technology leadership, however, will depend on the advanced research of the 1990's.

Some of the technologies discussed at the symposium included band-gap engineering, large area semiconductor electronics, new millimeter wave and optoelectronics technologies, and silicon carbide and diamond devices. Perhaps the title of one of the papers to be presented at the symposium by two Russian researchers---Polishing Diamond with Light---summarizes the spirit of technical exchange that the large gathering of leading scientists from the United States, Europe, Asia and other countries taking place at ISDRS-91.

The symposium closed with a panel discussion on joint USA-former USSR research projects which was chaired by Dr. Gerson Sher, the Program Director of the National Science Foundation.

One hundred fifty oral papers and fifty two poster papers (for a total of 202 papers) were presented at the Conference. The total number of participants exceeded 300 hundred. Five panel discussions which included internationally recognized leaders in semiconductor device physics took place. The published Proceedings (758 pages) were distributed to the participants and sent to leading researchers working in this field. The Program Committee decided to make ISDRS a biannual conference, to be held in Charlottesville every two years. It also decided to establish guidelines for the rotation of the replacement of the Program Committee members on a regular basis and established a one year terms for the Conference and Program Committee Chairs. Michael Shur was elected the ISDRS-93 Chairman and Elias Towe was elected the ISDRS-93 Program Committee Chairman. ISDRS-93 will take take place in Charlottesville in December, 1993.

Robert J. Mattauch, ISDRS-91 Chairman

Michael Shur, ISDRS-91 Program Committee Chairman

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