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RESEARCH IN ELECTRONICS

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FINAL REPORT
FOR THE PERIOD
April 1, 1991 through March 31, 1994

Presented to:
The Air Force Office of Scientific Research
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Bolling Air Force Base, DC 20332-6448

Presented by:
University of Southern California
School of Engineering
Electronic Sciences Laboratory
LOS ANGELES, CALIFORNIA 90089-0483
JOINT SERVICES ELECTRONICS PROGRAM

OVERVIEW

This final report on the Joint Services Electronics Program, Contract F49620-91-C-0028, covers the three year period 4/1/91 through 3/31/94.

During this period thirteen research projects were supported under this program in the areas of Solid State Electronics, Quantum Electronics, and Information Electronics. During this period, Prof. S. R. Forrest left the program and was replaced by Prof. R. Nottenburg. The three year period has been a very productive one from the scientific results achieved and the transfer of the results to industry and government laboratories. The results are documented in the 93 scientific publications that have resulted from this research. Perhaps the best mode of technology transfer is through students who graduate and carry the technology with them to other laboratories and industry. Thirty one students who were supported by JSEP received degrees during this period.
JOINT SERVICES ELECTRONICS PROGRAM

RESEARCH UNITS

Solid State Electronics

SS1-1  Cross-Talk In Optical Receiver Arrays, R. Nottenburg

SS1-2  InGaAs /InP Strained Layer Materials and Devices, P. D. Dapkus

SS1-3  Kinetics of Growth of Highly Strained Pseudomorphic Structures on Pre-patterned Substrates and Applications to FETS and RTD’s, A. Madhukar

Optical and Infrared Electronics

OE1-1  Beam Shaping by Nonlinear Optical Mixing, J. Feinberg

OE1-2  Nonlinear Optics and Carrier Transport, E. Garmire

OE1-3  Quantum Well Waveguides Studies, W. H. Steier


OE1-5  Plasma Based High Power Microwave and Millimeter Wave Sources, M. Gundersen

OE1-6  Smart Pixel Optoelectronic Devices for Optical Computing, A. A. Sawchuk

Information Electronics

IE1-1  Adaptive Channel/Code Matching, R. A. Scholtz

IE1-2  Blind Equalization Techniques, C. L. Weber

IE1-3  Research in Fiber-Optic Networks, V. O. K. Li

IE1-4  Inference on Wideband Random Communication Signals: Detection/Classification/Parameter Estimation, A. Polydoros

Contract No. F49620-91-C-0028


20. "Input to Output Relations in the Lens-Based Optical Shuffle," A. S. Miller and A. A. Sawchuk, accepted for publication in Applied Optics.


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<tr>
<th>Name</th>
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