JOINT SERVICES ELECTRONICS PROGRAM

RESEARCH IN ELECTRONICS

CONTRACT
F49620-88-C-0067

FINAL REPORT

For the period

April 1, 1988 through March 31, 1991

Submitted to:

The Air Force Office of Scientific Research
Building 410
Bolling Air Force Base, DC 20332

Submitted by:

University of Southern California
Electronic Sciences Laboratory
LOS ANGELES, CALIFORNIA 90089-0483

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91-09737
This final report for the past three Joint Services Electronics Program contract period lists all the publications which describe the supported research along with the names of students who received the PhD or MS degree and contributed to this research.
DEGREES AWARDED

Cho, Mim-Min  PhD  1988
Choi, M.  PhD  1990
Huang, Ching-Liand  PhD  1989
Jiang, Jein-Ping  PhD  1990
Kalivas, D.  PhD  1990
Kapre, Raviorey  PhD  1991
Kim, Dojin  PhD  1989
Kirkman, G.  PhD  1990
Kuroda, Roger  PhD  1991
Len-Yi, Leu-He  PhD  1990
Shyu, Shiw Chen  PhD  1989
Tang, Wade  PhD  1990
Venkateswar, V.  PhD  1991
Wang, Chih-Ping  PhD  1988

Bauer, H.  M. S.  1990
OVERVIEW

This final report on the Joint Services Electronics Program, Contract F49620-88-C-0067, covers the three year period 4/1/88 through 3/31/91.

During this period thirteen research projects were supported under this program in the areas of Solid State Electronics, Quantum Electronics, and Information Electronics. This 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 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 laborites and industry. Fifteen students received degrees while supported by JSEP during this period.
Joint Services Electronics Program

Research Units

Solid State Electronics

SS1-1. Selective Area Epitaxy Growth of Photonic Device Structures by Metalorganic Chemical Vapor Deposition (MOCVD), P. Daniel Dapkus

SS1-2. Strain Induced Metastability in Heterostructures: Some Investigations of Molecular Beam Epitaxial Growth and Interconversion of Metastable States, A. Madhukar


Quantum Electronics

QE1-1. Research to Improve Long Wavelength Infrared Semiconductor Lasers, E. Garmire.

QE1-2. A Spectroscopic Study of Basic Processes in Electrically Excited Materials, M. Gundersen


Information Electronics

IE1-1. Spread Spectrum Receiver Design for Intense Jamming Environments, R.A. Scholtz

IE1-2. Basic Research in C3 Distributed Databases, V.O.K. Li

IE1-3. Estimation and Segmentation of Image Sequences, A.A. Sawchuk

IE1-4. Mathematical Modelling and Control of Complex Systems - Application to Piezoelectrically Coated Large Space Structures, E. Jonckheere.

IE1-5. Research in Computer Vision, R. Chellappa


52. R.Kapre, A.Madhukar, K.Kavianl, S.Guha, and K.Rajkumar, "Realization and Analysis of GaAs/AlAs/In0.1Ga0.9As Based Resonant Tunneling Diodes with High Peak to Valley Ratios at Room Temperature", Appl. Phys. Lett. 56, p.922, 1990.

53. R.Kapre, A.Madhukar, and S.Guha, "In0.25Ga0.75As/AlAs Based Resonant Tunneling Diodes Grown on Pre-patterned and Non-patterned GaAs(100) Substrates", IEEE Electron Device Lett. 11 pp. 270, 1990.


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