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Final Report for

Air Force Office of Scientific Research (AFOSR) Workshop

On 29 September through 1 October 1987 the University of Dayton conducted a Workshop on "The Physical and Mechanical Properties of Alloys: Semiconductors and Beyond," at the Bergamo Conference Center, Dayton, Ohio. The Workshop was sponsored by the Air Force Office of Scientific Research (AFOSR) and monitored by Kevin J. Malloy, Capt., USAF.

A total of 51 scientists, known for their expertise in the subject area, were invited to attend (see Attachment #1), with 42 attending (see Attachment #2). Of those attending, 17 were reimbursed for their expenses (see Attachment #3).

The University was responsible for mailing the invitations, selecting the conference site, arranging local travel and accommodations, selecting menus, conducting the registration, and making other arrangements necessary to carry out the Workshop. The agenda was arranged by Capt. Kevin Malloy (see Attachment #4).

ATTACHMENT #1
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ATTACHMENT #4

WORKSHOP ON THE PHYSICAL AND MECHANICAL PROPERTIES OF ALLOYS:
SEMICONDUCTORS AND BEYOND
29 September - 1 October 1987
Dayton, Ohio

AGENDA

Tuesday, 29 September 1987 Bergamo Roncalli Conference Center

8:00 - 8:15 K. J. Malloy Introduction

I. Theoretical Approaches to Semiconductor Alloy Structure (J. Dow)

8:15 - 9:00 A. Sher Overview

9:00 - 9:50 A. Zunger Phase Diagrams and Stability of
Semiconductor and Metal Alloys

10:10 - 10:30 BREAK

10:30 - 11:15 K. Newman Ordering Transitions in Alloys

11:15 - 11:45 A.-B. Chen Local Correlations in
Disordered Alloys

12:00 - 1:30 LUNCH

II. Experimental Studies of Semiconductor Alloy Structure (A. Zunger)

1:30 - 2:00 B. Bunker EXAFS Studies of Semiconductors

2:00 - 2:20 W. Carlos NMR Studies of III-V Alloys

2:20 - 2:40 D. Zamir NMR of Local Structure and
Bonding in Semiconductor Alloys

2:45 - 3:15 BREAK

3:15 - 4:00 F. Pollak Raman Spectroscopy of
Semiconductor Alloys

4:00 - 4:45 S. Mahajan The Microstructure of Phase Sep-
aration in Semiconductor Alloys

4:45 - 5:30 G. Stringfellow OMVPE Growth and Ordering
in III-V Alloys

6:00 - 7:00 The Search for Order in Ethanol-Water Solutions

7:00 - 8:45 DINNER

Wednesday, 30 September 1987

III. Thin Film Phenomena (D. Stevenson)

8:30 - 9:15 J. Hirth Dislocations in Multilayers

9:15 - 10:00 S. Bedair Dislocations in Strained
Layer Superlattices

10:00 - 10:30	BREAK	
10:30 - 11:00	C.-Y. Li	Micromechanical Testing of Thin Films
11:00 - 11:30	R. McKee	Ti-O / Al ₂ O ₃ Multilayers
11:45 - 1:00	LUNCH	
IV. Related Issues in Other Material Systems (A. Rosenstein)		
1:00 - 1:45	D. Dimiduk	Intermetallics
1:45 - 2:30	A. Freeman	Structural Properties of Intermetallics and Semiconductors
3:00 - 5:15	BREAK	
5:15 - 7:15	DINNER	
7:30 - 8:15	J. Joannopoulos	Grain Boundaries
8:15 - 8:45	B. Cooper	Ti-C Ceramics
8:45 - 10:00	Liquid Solution Inspired Breakthroughs: Order Out of Chaos	

Thursday, 1 October 1987

V. Mechanical Properties of Semiconductors (A. Sher)

8:00 - 8:15	A. Borchevsky	Historical Perspective
8:15 - 9:00	M. Berding	Hardness and Yield Stress
9:00 - 9:30	D. Clarke	Cracks in Si
9:30 - 10:00	BREAK	
10:00 - 10:15	E. Bourett	Mechanical Properties of GaAs
10:15 - 11:00	K. Faber	High T deformation of GaAs:In
11:00 - 11:40	D. Stevenson	Growth and Hardness of Semiconductor Alloys
11:45 - 1:00	LUNCH	

VI. DISCUSSION / SUMMARY (K. Malloy)

1:00 - 3:00	Last Chance
3:00 -	Departure