TITLE

by

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Ph.D. Disseration Prospectus

YEAR

Advisor

ABSTRACT

TITLE HERE

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Major:	Physics
Degree:	Doctor of Philosophy

Abstract here

ACKNOWLEDGEMENTS

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Chapter 1

Introduction

1.1 The Conception of Semiconductors

Here we present work by [2, 1].

Semiconductor	Band Gap (eV)	Electron Mobility[1] ($cm^2/V \cdot s$)	Hole Mobility[1] ($cm^2/V \cdot s$)	Lattice Constant (Å)
Si	1.12	1,500	470	5.43095[a]
Ge	0.67	3,900	1,900	5.64613[a]
GaAs	1.42	8,500	400	5.6533[b]
CdS	2.5	300	50	5.8320[c]
AlAs	2.16	1,200	400	5.6622[b]
ZnS	3.66	165	5	5.410[d]

Table 1.1: Selected properties of some common semiconductors at $T = 300\,\mathrm{K}$. Adapted from ref. [5].

[1] Drift mobilities in the purest materials.
[a] Diamond cubic crystal structure [4].
[b] Zinc blende crystal structure [3].
[c] Hexagonal and cubic... citation needed.
[d] Notes on ZnS structure.

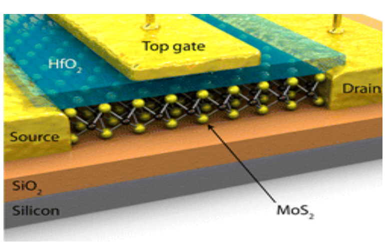


Figure 1.1: Name

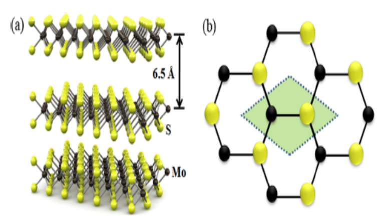
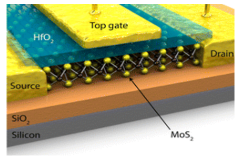
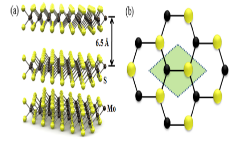


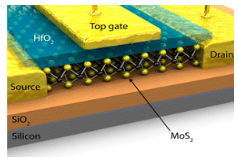
Figure 1.2: name



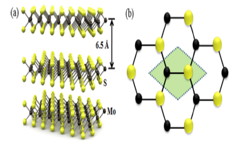
(a) Short caption



(b) sub fig2



(c) sub fig3



(d) sub fig4

Figure 1.3: main caption

1.2 Evolution of Semiconductors

1.3 Interest and Development of Two-dimensional Materials

1.4 Current State of Two-dimensional Materials

Chapter 2

Chapter 2

2.1 Section Heading

Chapter 3

Chapter 3

3.1 Section Heading

Chapter 4

Conclusion

4.1 Heading

Bibliography

[1] J. W. Allen. Gallium Arsenide as a Semi-insulator. *Nature*, 187:403–405, jul 1960.

[2] M. Cutler and N. F. Mott. Observation of Anderson Localization in an Electron Gas. *Physical Review*, 181:1336–1340, may 1969.

[3] A. Ledwith and S. J. Moss. *Chemistry of the Semiconductor Industry*. Springer Science, New York, NY, 1 edition, 1989.

[4] W.C. O'Mara, R.B. Herring, and L.P. Hunt. *Handbook of Semiconductor Silicon Technology*. Materials science and process technology series. Noyes Publications, 1990.

[5] Dieter K. Schroder. *Semiconductor Material and Device Characterization*. John Wiley and Sons, Inc., Hoboken, New Jersey, 3rd edition, 2006.

Appendices

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