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Theodore D. Moustakas has been a Professor of the Electrical and Computer Engineering Department at Boston University since 1987. He has also been a Professor of Physics since 1991 and a Faculty Member of the Center for Photonics Research since 1994. He received the B.S. degree in Physics from Aristotle University (Greece) in 1964 and the Ph.D. degree in Solid State Science and Engineering from Columbia University in 1974. He held research and visiting faculty positions at Harvard University, Princeton University, Massachusetts Institute of Technology, Aristotle University, IBM T. J. Watson Research Laboratory and Exxon Corporate Research Laboratory.

Dr. Moustakas' research contributions cover a broad spectrum of topics in opto-electronic materials and devices, including nitride semiconductors, amorphous semiconductors, III-V compounds, diamond thin films and metallic multilayers. He is the co-editor of eight books, including *Gallium Nitride I* (Academic Press, 1998) and *Gallium Nitride II* (academic Press, 1999), the author of chapters in nine books and 270 papers in technical journals and conference proceedings. He served as a special editor of the *Journal of Vacuum Science and Technology* in 1984 and 1986 and of the *Journal of Electronic Materials* in 1995. He presented 100 invited and plenary talks in national and international conferences. He has been granted 25 U.S. patents and several are pending in the fields of nitride semiconductors, amorphous silicon and diamond materials. Intellectual property that resulted from his work has been licensed to a number of companies, including the two major manufactures of blue LEDs and lasers (Cree in United States and Nichia in Japan). This work is cited in the 2006 edition of *Technology Transfer Works: 100 Cases From Research to Realization*, published by The Association of University Technology Managers as part of the [Better World Project](http://www.betterworldproject.net) (www.betterworldproject.net).

Dr. Moustakas is a Fellow of the American Physical Society and the Electrochemical Society. He is also active member in the Materials Research Society, the Electronic Materials Committee and he is a member of the Advisory Board of the North America Molecular Beam Epitaxy. He organized a number of symposia for the American Physical Society, the Materials Research Society, and the Electrochemical Society and participated in the organization of numerous national and international conferences. In 2003 he was awarded an honorary doctoral degree from the Aristotle University for outstanding contributions to research and teaching.

Table of Contents

General

<i>Education</i>2
<i>Career History</i>	2
<i>Visiting Positions</i>	2
<i>Research Interests</i>	2
<i>Fellowships and Awards</i>	2
<i>Activities in Professional Societies</i>	3
<i>Conference Organization</i>3

Research

<i>Patents</i>	6
<i>Books</i>	9
<i>Edited Special Issues of Journal</i>	9
<i>Chapters in Books</i>	10
<i>Scientific Papers</i>	11
<i>Invited and Plenary Presentations in Conferences</i> ...	30

Education

- Ph.D. (Solid State Science and Engineering) 1974 - Columbia University
- M.Ph. (Solid State Science and Engineering) 1974 – Columbia University
- B.S. (Physics) 1964 - Aristotle University, Thessaloniki, Greece

Career History

- Boston University, Professor of Electrical Engineering (1987-Present)
- Boston University, Professor of Physics (1991-Present)
- Boston University, Faculty Member of the Center for Photonics Research (1994-Present)
- Exxon Corporate Research Laboratories, Senior Research Scientist (1977-1987)
- Harvard University, Research Fellow (1974-1977)
- Columbia University / IBM T. J. Watson Laboratory, Research Assistant (1969-1974)
- Theagenion Anti-Cancer Institute (Thessaloniki, Greece) Radiophysicist (1966-1968)

Visiting Positions

- Massachusetts Institute of Technology (September 2001- June 2002)
- Aristotle University, Thessaloniki, Greece (Nov. 1999, May 2001, June 2003)
- Indian Association for the Cultivation of Science, Calcutta, India (Summer 1989)
- Princeton University (Presented a series of lectures on Amorphous Semiconductors, Spring 1985)

Research Interests

- III- Nitrides {Optical Devices (LED's, Lasers, Detectors), Electronic Devices, MEMS}
- Molecular Beam Epitaxy of III- Nitride Semiconductors and other III-V compounds.
- Hydride Vapor Epitaxy (HVPE) of III-Nitrides.
- Diamond Thin Films
- Amorphous Semiconductors {Amorphous Si (Solar Cell), Chalcogenide glasses}
- Metallic Multi-layers {Ceramic /Transition Metals}

Fellowships and Awards

- My work is cited in the 2006 edition of *Technology Transfer Works: 100 Cases From Research to Realization*, published by The Association of University Technology Managers as part of the Better World Project [Better World Project](http://www.betterworldproject.net) (www.betterworldproject.net).
- I was awarded a Honorary Doctoral Degree from the Aristotle University, Greece (2003)
- I was elected Fellow of the American Physical Society (1994)
- I was elected Fellow of the Electrochemical Society (1997)
- I was awarded the BU ECE Faculty Award for Excellence in teaching (1997/98)
- I was a finalist for the Boston University Metcalf Award for Excellence in Teaching (1994-1995)
- Technical Advisor to United Nations Industrial Development Organization (1989)
- Member of the New York Academy of Sciences
- IBM Post-Doctoral Fellowship at Harvard University (1975-1976)
- IBM Doctoral Fellowship at Columbia University (1971-1974)
- Campbell Fellowship at Columbia University (1969-1971)
- Greek National Scholarship at Aristotle University (1958-1962)

Activities in Professional Societies

- **American Physical Society**
 - Co-Chairman of the Symposium on "Wide Band-gap Semiconductors for Blue-UV Emitters" (St. Louis, March 1996)
 - Co-Chairman of the Symposium on "Wide Band-gap Semiconductors" (Centennial Meeting in Atlanta, March 1999).
- **Material Research Society**
 - Chairman of the 1991 Symposium on "Wide Band-gap Semiconductors"
 - Chairman of the 1996 Symposium on "III-V Nitrides"
- **The Electrochemical Society**
 - Chairman of the Workshop "III-V Nitrides Materials and Processes I" (Los Angeles, May 1996)
 - Chairman of the Workshop "III-V Nitrides Materials and Processes III" (Boston, November 1998)
 - Member of the governing body of the Dielectric Science and Technology Division
 - Member of the Honors and Awards Committee (Chairman of the Subcommittee for the Solid State Science and Technology Award)
 - Member of the Nominations Committee 1997
- **Elected to Electronic Materials Committee(1993-1999)**
 - Organization of Annual Electronic Materials Conference
 - Publication of Journal of Electronic Materials
- **North American Conference on Molecular Beam Epitaxy**
 - Member of the advisory Board

Conference Organization

- Organization Committee for the "5th Gordon Conference on Plasma Chemistry" (Andover, N.H., 1978).
- Organization Committee for the Symposium "*Material Processes and Characterization Techniques for Solar Energy Devices*" of 155th Electrochemical Society Meeting (Boston, 1979).
- Program Chairman for the Symposium of the American Vacuum Society on "*Coatings for Large-scale Metallurgical, Optical and Electronic Applications*" (Clinton, N.J., 1984).
- Program Chairman for the Symposium of the American Vacuum Society on "*Strained Layer Superlattices*" (Clinton, N.J., 1986).
- Organization Committee for the "*2nd International Workshop on the Physics and Applications of Amorphous Semiconductors*" (Torino, Italy, 1988).
- Organization Committee for the 1st International Symposium on "*Diamond and Diamond-like Films.*" of the 175th Electrochemical Society Meeting (Los Angeles, 1989).
- Organization Committee for the 2nd International Symposium on "*Diamond and Diamond-like Films.*" The Electrochemical Society Meeting (Washington, D.C., 1991).
- Program Chairman for the MRS Symposium "*Wide Band-gap Semiconductors*" (Boston, 1991).
- Organization Committee for "*Workshop on Wide gap Nitrides*" (St. Louis, Missouri, 1992).
- International Advisory Committee of the "*Third International Conference on Electrical Transport and Optical Properties of Inhomogeneous Media*" (Guanajuato, Mexico, 1993).
- Organization Committee for the 36th Electronic Materials Conference (Boulder, Co., June 1994).
- Organization Committee for the Second Workshop on Wide Band-gap Nitrides (St. Louis, Missouri, October 1994).

- Organization Committee for the 37th Electronic Materials Conference (University of Virginia, June 1995).
- International Advisory Committee of the 6th International Conference on Silicon Carbide and Related Materials (Kyoto, Japan, September 1995).
- Organization Committee of the Topical Workshop on III-V Nitrides (Nagoya, Japan, 1995).
- Organization Committee of the SPIE International Symposium on "Wide Band-gap Semiconductors: Lasers, LEDs and High Temperature Devices." (San Jose, California, January 1996).
- International Advisory Committee of the "International Symposium on Blue Lasers and Light-emitting Diodes" (Chiba University, Japan, March 1996)
- Organization Committee for the "3rd Workshop on Wide Band-gap Nitrides" (St. Louis, Missouri, March 1996).
- Co-Chairman for the American Physical Society Meeting Symposium on "Wide Band-gap Semiconductors for Blue-UV emitters" (St. Louis, March 1996).
- Program Chairman of the Electrochemical Society Workshop on "III-V Nitride Materials and Processes" (Los Angeles, May 1996).
- Organization Committee for the 38th Electronic Materials Conference (University of California at Santa Barbara, June 1996).
- Program Chairman for the MRS Symposium "III-V Nitrides," (Boston, December 1996).
- Organization Committee for the 39th Electronic Materials Conference (Ft. Collins, Co., June 1997)
- Organization Committee for the III-V Nitride Materials and Processes Symposium, 192nd Meeting of the Electrochemical Society (Paris, France, Aug. 1997)
- International Advisory Committee for the Second International Conference on Nitride Semiconductors (Tokushima, Japan, Oct. 1997)
- Program Committee for the IEEE Topical Meeting "Gallium Nitride Materials, Processing and Devices," (Montreal, Quebec, August 1997)
- International Advisory Committee for the 3rd European Workshop on GaN (Warsaw, Poland, June 1998)
- Organization Committee for the 40th Electronics Materials Conference (Charlottesville, Virginia, June 1998)
- Program Committee of the "Second International Symposium on Blue Lasers and Light-emitting Diodes" (Chiba University, Japan, September 1998)
- Program Chairman for the 194th Electrochemical Society Meeting Workshop on III-V Nitride Materials and Processes (Boston, November 1998).
- Co-chairman for the American Physical Society Meeting Symposium on "Wide band Gap semiconductors" (Atlanta, March 1999).
- Organizing Committee for the 41st Electronics Materials Conference (Santa Barbara, California, June 1999).
- Organizing Committee for the 6th GaN Workshop (Richmond, VA, March 2000)
- International Advisory Committee for the 4th European Workshop on GaN (Nottingham- U.K, July 2000)
- International Advisory Committee for the "International Workshop on Nitride Semiconductors" (Nagoya, Japan, Sept. 2000)
- Program Committee for the 11th International Conference on Molecular Beam Epitaxy (Beijing, China, September 2000)
- Member of the organizing committee of The Fourth International Conference on Nitride Semiconductors (Denver, Colorado, July 2001)
- Organizing Committee for the 7th Wide Bandgap III-Nitride Workshop (Richmond, VA, March 2002).

- Organizing Committee for the Symposium “Wide Bandgap Semiconductors for Photonic and Electronic Devices and Sensors”, 201st Electrochemical Society Centennial Meeting (Philadelphia May 2002).
- International Advisory Committee of the 5th International Conference on Nitride Semiconductors (Chiba, Japan, July 2003).
- International Advisory Board of the “International Conference on Electro-ceramics” (MIT, Cambridge, MA, August 2003).
- Member of the Advisory Board of the 21st North America Molecular Beam Epitaxy Conference (Keystone, Colorado, September 2003)
- Organizing Committee for the Symposium “Wide Bandgap Semiconductors for Photonic and Electronic Devices and Sensors”, of the 2004 Joint International Electrochemical Society Meeting (Honolulu, Hawaii, September 2004).
- Member of the Advisory Board of the 22nd North America Molecular Beam Epitaxy Conference (Banff, Alberta, Canada, October 2004)
- International Advisory Committee of the 6th International Conference on Nitride Semiconductors (Bremen, Germany, August 2005).
- Member of the Advisory Board of the 23rd North America Molecular Beam Epitaxy Conference (Santa Barbara, California, September 2005)
- Member of the Program Committee of the International Molecular Beam Epitaxy Meeting (MBE-2006). (Tokyo, Japan, September, 2006)
- Member of the Advisory Board of the 24th North America Molecular Beam Epitaxy Conference (Duke University, Oct. 8, 2006)
- Member of the Program Committee of the International Workshop on Nitride Semiconductors-2006 (Kyoto, Japan, Oct. 22, 2006)
- Member of the International Advisory Committee of the 7th International Conference on Nitride Semiconductors (ICNS-2007) (Las Vegas, Sept. 16-21, 2007)
- Member of the Advisory Board of the 25th North America Molecular Beam Epitaxy Conference (NAMBE-2007) (University of New Mexico, Albuquerque, New Mexico, Sept 23-26, 2007)

Patents

1. T. D. Moustakas, R. Friedman and C. R. Wronski "**Gradient Doping in Amorphous Silicon**", *US. Patent 4,251,289*, (February 17, 1981).
2. T. D. Moustakas "**Plasma Etching of Amorphous Silicon**", *US. Patent 4,285,762*, (August 25, 1981).
3. T. D. Moustakas, D. L. Morel and B. Abeles "**Hybrid Method of Making an Amorphous Silicon P-I-N Semiconductor Device**", *US-Patent 4,407, 710* (November 22, 1983)
4. T. D. Moustakas and R. Friedman. "**Sputtered P-I-N Amorphous Silicon Semiconductor Device and Method Thereof**", *US. Patent 4,417,092*, (November 22, 1983).
5. T. D. Moustakas and H.P. Maruska "**Method for Sputtering a P-I-N Microcrystalline/ Amorphous Silicon Semiconductor Device with the p- and n-layers sputtered from Boron and Phosphorous Heavily Doped Targets**", *US. Patent 4,508,609* (April 2, 1985).
6. T. D. Moustakas and H. P. Maruska "**Method for Sputtering a P-I-N Amorphous Silicon Semiconductor Devices Having Partially Crystallized p- and n-layers**", *US. Patent 4,528,082* (July 9, 1985).
7. T. D. Moustakas "**Control of the Hydrogen Bonding in Reactively Sputtered Amorphous Silicon**", *US. Patent 4,533,450* (August 6, 1985).
8. H.P. Maruska, M.C. Hicks and T. D. Moustakas "**Optical Detector and Amplifier Based on Tandem Semiconductor Devices**", *US. Patent 4, 739,383* (1988).
9. T. D. Moustakas "**A Composition of Matter that is Hard and Tough**", *US. Patent No.4,804,583* (February 14, 1989).
10. T.D. Moustakas "**Improved Retro reflective Sheet Material**", U.S.S.N 08/017, 188 (February 5, 1993)
11. T. D. Moustakas "**Defect-Induced Control of the Structure of Boron Nitride**", *US. Patent No. 5,296,119* (March 22, 1994).
12. T. D. Moustakas "**A Method for the Preparation and Doping of highly insulating monocrystalline Gallium Nitride Thin Films**", *US. Patent No. 5,385,862* (January 31, 1995).
13. T.D. Moustakas and R.J. Molnar "**Method for Epitaxially Growing Gallium Nitride Layers**", *US. Patent No. 5,633, 192* (May 27, 1997).
14. T. D. Moustakas and M. Misra "**Photodetectors Using III-V Nitrides**", *US. Patent No.5,677,538* (October 14, 1997)
15. T. D. Moustakas "**Highly Insulating monocrystalline Gallium Nitride Thin Films**", *US Patent No. 5,686,738* (Nov. 11, 1997).

16. T. D. Moustakas and R.J. Molnar "**Device and Method for Epitaxially Growing Gallium Nitride Layers**", *US. Patent No.5, 725,674* (March 10, 1998).
17. T. D. Moustakas "**Photodetectors using III-V Nitrides**", *US. Patent No. 5,847,397* (Dec. 8,1998)
18. H.M. Ng and T.D. Moustakas "**Group III-Nitride VCSELs (Vertical Cavity Surface Emitting Lasers)**", US Provisional Patent Application No. 60\178,236 (filed Jan 26, 2000).
19. T.D. Moustakas "**Method for the preparation and doping of highly insulating monocrystalline gallium nitride thin films**", *US Patent No. 6,123,768* (Sept. 26, 2000)
20. T.D. Moustakas and Mira Misra "**Photodetectors Using III-V Nitrides**" Canadian Patent No. 2,226,439 (April 10, 2001).
21. D. Doppalapudi, T.D. Moustakas, R. Mlcak and H.L. Tuller "**Semiconductor Piezoresistor**", US Patent 6,275,137 B1 (August 14, 2001).
22. D. Doppalapudi, T.D. Moustakas, R. Mlcak and H.L. Tuller "**Semiconductor Piezoresistor**", US Patent 6,441,716 (August 27, 2002).
23. Theodore D. Moustakas, "**Method of Making a Semiconductor Device with Exposure of Sapphire Substrate to Activated Nitrogen**" U.S. Patent 6,953,703 B2 (Oct. 11, 2005).
24. Theodore D. Moustakas, "**Highly Insulating monocrystalline Gallium Nitride Thin Films**", Japanese Patent No. 3817206 (June 16, 2006).
25. Theodore D. Moustakas, "**Semiconductor Device having Group-III Nitride Buffer Layer and Growth Layers**", U.S. Patent No: 7,235,819 (June 26, 2007).
26. J. Cabalu, E. Bellotti, T.D. Moustakas, C. Eddy, L. Gunter, K. Chu "**Design and Fabrication of GaN-based Permeable-Base Transistor**" U.S.S/N 60/527,238 (Filed 12/4/2003).
27. Harry L. Tuller, Theodore D. Moustakas, Yong K. Min , "**Method for p-type doping of wide band gap oxide semiconductors**" United States Patent Application 20040108505 (June 10, 2004).
28. Theodore D. Moustakas, Jasper S. Cabalu, "**Formation of textured III- Nitride Templates for the Fabrication of Efficient Optical Devices**" US Provisional Application No. 60/562,489 (Filed April 15, 2004).
29. Theodore D. Moustakas, Jasper S. Cabalu, "**Formation of Textured III- Nitride Templates for the Fabrication of Efficient Optical Devices**" US Provisional Application No. 60/615,047 (Filed October 1, 2004)
30. Theodore D. Moustakas, Jasper S. Cabalu, "**Nitride LEDs Based on Flat and "Wrinkled" Quantum Wells**" US Provisional Application No. 60/645,704 (Filed January 21, 2005).
31. Theodore D. Moustakas, Jasper S. Cabalu, "**Optical Devices featuring textured semiconductor layers**" U. S. Patent Application No. 11/107,150 (Filed April 15th, 2005). Publication No. US-2005-0242364-A1 (Publication Date: 11/03/2005)

32. Theodore D. Moustakas and Jasper Cabalu, **“Optical Devices Featuring Textured Semiconductor Layers”**, PCT International Application. No. PCT /US05/012849 (Filed April 15, 2005). International Publication Number WO 2005/104236 A3 (November 3, 2005).
33. Theodore D. Moustakas and Jasper Cabalu, **“Optical Devices Featuring Textured Semiconductor Layers”**, US Provisional Patent Application No 60/732,034 (Filed 10/31/2005)
34. Theodore D. Moustakas and Adrian Williams, **“Planarization of GaN by Photoresist Technique using an inductively Coupled Plasma”** US Provisional Application No. 60/648,777 (Filed Feb.1, 2005).
35. Theodore D. Moustakas and Adrian Williams, **“Planarization of GaN by Photoresist Technique using an inductively Coupled Plasma”** US Provisional Application No. 60/764, 389 (Filed Feb.2, 2006)
36. Theodore D. Moustakas and Jasper Cabalu, **“Optical Devices Featuring Textured Semiconductor Layers”** U. S. Patent Application No 11/590,687 (Filed Oct. 31, 2006). Publication No. US-2007-0120141-A1 (Publication Date: 05/31/2007)
37. Theodore D. Moustakas and Jasper Cabalu, **“Optical Devices Featuring Textured Semiconductor Layers”** International Application No. PCT/US2006/042483 (Filed Oct. 31, 2006). (International Publication Date 10 May 2007; **International Publication Number WO 2007/053624 A2**)
38. Theodore D. Moustakas and Jasper Cabalu, **“Optical Devices Featuring Textured Semiconductor Layers”** European Patent Application No. 05 744 389.7 (Published on Dec. 27, 2006- **Publication number 1735838**).
39. Theodore D. Moustakas and Adrian Williams, **“Planarization of GaN by Photoresist Technique using an inductively Coupled Plasma”** US Patent Application No. 60/880, 758 (Filed Jan. 17, 2007)
40. Theodore D. Moustakas and Adrian Williams, **“Planarization of GaN by Photoresist Technique using an inductively Coupled Plasma”** PCT International Application No. **PCT/US2007/002943**(Filed Feb. 2, 2007).
41. Theodore D. Moustakas, **"Semiconductor Device Having Highly Insulating monocrystalline Gallium Nitride Thin Films"**, Japanese Patent Application 2007-24009 (Filed Feb. 2, 2007).
42. Theodore D. Moustakas, **“Semiconductor Device having Group-III Nitride Buffer Layer and Growth Layers”**, U.S. Patent Application No. 11/698,737 (Filed 01/26/2007). Publication No. US-2007-0120144-A1 (Publication Date: 05/31/2007)

Books

1. "**Gallium Nitride (GaN) I**" J.I. Pankove and T.D. Moustakas Eds. In *Semiconductors and Semimetals*. Vol 50 (Academic Press, 1998).
2. "**Gallium Nitride (GaN) II**" J.I. Pankove and T.D. Moustakas Eds. In *Semiconductors and Semimetals*. Vol 57 (Academic Press, 1999).
3. "**Wide Band-gap Semiconductors**" T. D. Moustakas, J.I. Pankove and Y. Hamakawa Eds. *Mat. Res. Soc. Proc. Vol.242* (MRS Pittsburgh, Pa., 1992).
4. "**III-V Nitrides**", F. Ponce, T. D. Moustakas, I. Akasaki and B. Monemar Eds. *Mat. Res. Soc. Proc. Vol. 449* (MRS Pittsburgh, Pa., 1997).
5. "**III-V Nitride Materials and Processes I**" T. D. Moustakas, J.D. Dismukes and S.I. Pearton Eds. *Electrochemical Society Proc. Vol.96-11* (Electrochemical Society, Pennington, N.J., 1996).
6. "**III-V Nitride Materials and Processes II**", C.R. Abernathy, W.D. Brown, D.N. Buckley, J.P. Dismukes, M. Kamp, T.D. Moustakas, S.J. Pearton, F. Ren Eds. *Electrochemical Society Proc. Vol.97-34* (Electrochemical Society, Pennington, N.J., 1997).
7. "**III-V Nitride Materials and Processes III**," T.D. Moustakas, S. Mohny and S.J Pearton Eds, *Electrochemical Society Proc. Vol.98-18* (Electrochemical Society, Pennington, N.J., 1999).
8. "**Diamond and Diamond-like Films**," - J.P. Dismukes, B.S. Meyerson, T. D. Moustakas, K.E. Spear, K.V. Ravi and M. Yoder Eds. *Electrochemical Society Proceedings Vol.89* (The Electrochemical Society, Pennington, N.J., 1989).

Special Editor of Journal

1. "**III-V Nitrides and Silicon Carbide**" M. Melloch and T. D. Moustakas, Feature Editors. *Journal of Electronic Materials* Vol.**24**, 1995.
2. "**Coatings for Large-Scale Metallurgical, Optical and Electronic Applications**," T. D. Moustakas and H. Witzke, Feature Editors (*Journal of Vacuum Science and Technology B*, Vol.2, 1984).
3. "**Strained Layer Super lattices**," T. D. Moustakas and T. Tiedje, Feature Editors. (*Journal of Vacuum Science and Technology B*, Vol.4, 1986

Chapters in Books

1. T. D. Moustakas, "**Sputtering of Hydrogenated Amorphous Silicon**", in *Semiconductors and Semimetals*, Vol. 21A, J.I. Pankove Ed. (Academic Press, N.Y., 1984). Chapter 4

2. T. D. Moustakas, "**CVD Diamond Synthesis Methods and Effects of Process Parameters**", in *Synthetic Diamond: Emerging CVD Science and Technology*. K.E. Spear and J.P. Dismukes Eds (John Wiley and Sons, N.Y., 1994). Chapter 6
- 3 J. I. Pankove and T. D. Moustakas "**Introduction: A Historical Survey of Research of Gallium Nitride**", in *Gallium Nitride (GaN) I*, J.I. Pankove and T. D. Moustakas Eds., *Semiconductors and Semimetals*. Vol.50 (Academic Press, N.Y.1998) Chapter 1.
4. T. D. Moustakas "**Growth of III-V Nitrides by Molecular Beam Epitaxy**", in *Gallium Nitride (GaN) II*, J.I. Pankove and T. D. Moustakas Eds, *Semiconductors and Semimetals*. Vol.57 (Academic Press, N.Y., 1999) Chapt. 2.
5. H.M. Ng and T. D. Moustakas "**Intermetallic Compounds by Molecular Beam Epitaxy**" in *Intermetallic Compounds: Principles and Practice Vol. 3* J.H. Westbrook and R.L. Fleischer Eds. (John Wiley Ltd., N.Y 2002), Chapter 37.
6. D.Doppalapudi and T.D. Moustakas "**Epitaxial Growth and Structure of III- V Nitride Thin Films**" in "*Handbook of Thin Film Materials*", Edited by H.S. Nalwa, Vol. 4 , (Academic Press, 2002), Chapter 2.
7. T.D. Moustakas , "**Growth of Wide-Band Gap Semiconductors by MBE**" in *Gallium Nitride Based Technologies*, Edited by Marek Osinski (SPIE, Optical Engineering Press, 2002).
8. William F. Hug. Ray D. Reid, Rohid Bhartia and Theodore Moustakas "**Ultraviolet resonance Raman spectroscopy for biological micro-sensing using ESUVOS**" in *Solid State UV Technology* Edited by Michael Shur and John Carrano.
9. Tao Xu and Theodore D. Moustakas, "**Growth and Characterization of III-Nitride Quantum Dots and their Applications to Emitters**" in *Self-Assembled Quantum Dots*, Edited by Zhiming Wang (Springer)

Scientific Papers

1974

1. A.J. Grant, T. D. Moustakas, T. Penney and K. Weiser, “**Conduction in Localized Band-tail and in Extended States, I. Experimental Studies of Transport in Amorphous As_2Te_3** ,” in *Amorphous and Liquid Semiconductors*, J. Stuke and W. Brenig, eds., (Taylor and Francis, Ltd., London, 1974), p.325.
2. K. Weiser, A. J. Grant and T. D. Moustakas, “**Conduction in Localized Band-tail and in Extended States, II. Development of a Model**,” in *Amorphous and Liquid Semiconductors*, J. Stuke and W. Brenig, eds., (Taylor and Francis, Ltd., London, 1974), p. 335.

1975

3. T. D. Moustakas and K. Weiser, “**Transport and Recombination Properties of Amorphous Arsenic Telluride**,” *Phys. Rev. B*, **12**, 2248 (1975)
4. T. D. Moustakas, K. Weiser and A. J. Grant, “**Anomalous Thermoelectric Power of Some Liquid Chalcogenide Systems**,” *Solid State Commun.*, **16**, 575 (1975)

1976

5. T. D. Moustakas and G. A. N. Connell “**Amorphous Ge_xH_{1-x} Bolometers**,” *J. Appl. Phys.*, **47**, 1322 (1976).
6. T. D. Moustakas, G. A. N. Connell and W. Paul, “**Photoconductivity in the Amorphous Ge_xH_{1-x} System**,” in *Electrical Phenomena in Non-Crystalline Semiconductors*, B. T. Kolomeits, ed., (Academy of Science of the USSR, 1976), p. 310.
7. W. Paul, A. J. Lewis, G. A. N. Connell and T. D. Moustakas, “**Doping, Schottky Barrier and p-n Junction Formation in**

Amorphous Ge and Si by RF Sputtering,” *Solid State Commun*, **20**, 969 (1976).

1977

8. T. D. Moustakas and W. Paul, “**Transport and Recombination in Sputtered Hydrogenated Amorphous Ge**,” *Phys. Rev. B*, **16**, 1564 (1977).
9. T. D. Moustakas, D. A. Anderson and W. Paul, “**Preparation of Highly Photoconductive Amorphous Silicon by RF Sputtering**,” *Solid State Commun*, **223**, 155 (1977).
10. D. A. Anderson, T. D. Moustakas and W. Paul, “**Effect of Hydrogen on the Transport Properties of Amorphous Silicon**,” in *Amorphous and Liquid Semiconductors*, W. E. Spear, ed. (CICL, University of Edinburgh, 1977), p. 334.
11. W. Paul, T. D. Moustakas, D. A. Anderson and E. Freeman, “**Properties of a-GaAs Containing H and Other Dopants**,” in *Amorphous and Liquid Semiconductors*, W. E. Spear, ed. (CICL, University of Edinburgh, 1977), p.467.

1979

12. T. D. Moustakas, “**Sputtered Hydrogenated Amorphous Silicon**,” *J. of Electronic Materials*, **8**, 391 (1979).

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2. T.D. Moustakas “**Reactively Sputtered Amorphous Silicon**”, Presented at *SERI’s Amorphous Silicon Review Meeting* (Washington, D.C., April 22, 1980).
3. T.D. Moustakas “**Hydrogenated Amorphous Silicon**,” Presented at the *7th Annual Spring Symposium of North Central Chapter of the American Vacuum Society* (Detroit, MI, May 8, 1980).
4. T.D. Moustakas “**Charge Transport and Properties of Amorphous Semiconductors**,” *Gordon Conference on Radiation Chemistry* (Brewster Academy, Wolfeboro, N.H., June 28, 1982).
5. T.D. Moustakas, “**Correlation between Deposition Parameters and Performance of Sputtered Amorphous Silicon Solar Cells**,” *SPIE Symposium on Photovoltaics for Solar Energy Applications* (Arlington, Va., April 6, 1983).
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12. T.D. Moustakas “**Tungsten Carbide-transition Metal Superlattices: Growth and Characterization**,” *Symposium on High Temperature Structural Composites* (Stevens Institute of Technology, N.J., May 1987).
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17. T.D. Moustakas “**Synthesis and Structure of Diamond Thin Films**,” *11th International*

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58. H. M. Ng, T.D. Moustakas “**Group III Nitride VCSELs structures grown by Molecular Beam Epitaxy**”, Symposium - Physics and Simulation of Optoelectronic Devices, *SPIE Photonics West Meeting* (San Jose, Jan 24 2000).
59. M. Misra, E. Iliopoulos, D. Doppalapudi, H.M. Ng, T. D. Moustakas “**Photoconductive Detectors Fabricated on GaN and Al_xGa_{1-x}N Films Grown by Molecular Beam Epitaxy**” *6th GaN Workshop Richmond, VA* (March 12, 2000)
60. M. Misra, A. Sampath, and T.D. Moustakas “**Vertical Transport in n-GaN Films**” *6th GaN Workshop Richmond, VA* (March 12, 2000)
61. T.D. Moustakas “**Growth and Device Applications of III-V Nitrides by MBE**”, *5th International Workshop on Expert Evaluation and Control of Compound Semiconductor Materials and Technologies, Heraklion, Crete, Greece* (May 21, 2000)
62. T.D. Moustakas “**MBE III-V Nitrides**”, Plenary speaker, *11th International Conference on Molecular Beam Epitaxy, Beijing, China -Plenary Talk* (September 10, 2000)
63. T. D. Moustakas “**Ordering in Nitride Alloys**”, *2001 Lawrence Symposium on Critical Issues in Epitaxy, Arizona State University* (Jan 3, 2001)
64. T. D. Moustakas, “**Group III-Nitride VCSEL structures grown by MBE and Ordering in AlGa_xN Alloys**”, *DARPA UV-Emitters Study Group, Arlington VA*, (April 8-11, 2001).
65. T. D. Moustakas “**Growth of Nitrides by MBE**”, *Army Research Laboratory, Adelphi* (May3, 2001)
66. T.D. Moustakas, “**Physics of III-V compounds**”, *A series of lectures in the Graduate Program “Physics of Materials” of the Aristotle University of Thessaloniki, Greece* (June 1-8, 2001).
67. T. D. Moustakas, “**MBE Growth of Wide-Bandgap Nitrides**”, *Symposium on Gallium Nitride Based Technologies, Photonics West, San Jose* (Jan. 21-22, 2002)
68. T. D. Moustakas, “**A series of lectures on Nitride Semiconductors**”, MIT (Spring 2002)
69. T. D. Moustakas, “**Phase Separation and Long Range Atomic Order in Nitride Alloy**”, *7th Nitride Workshop, Richmond Virginia* (March 11-13, 2002)
70. Yan Shao, T. C. Chen, Sandeep Iyer ., N. G. Chu, D. B. Fenner, and T. D. Moustakas, “**Growth of GaN by Gas-Cluster-Ion-Beam Deposition (GCIB)**”, *7th Nitride Workshop, Richmond Virginia* (March 11-13, 2002)
71. T. D. Moustakas, “**III-Nitrides-Growth and Applications**”, Arizona State University (March 25, 2002)
72. T. D. Moustakas, “**VCSEL structures based on III-Nitride Semiconductors**”, MIT Micro photonics Center (April 18, 2002)
73. T.D. Moustakas “**Growth of III-Nitrides by MBE**”, *Centennial Meeting of the Electrochemical Society, Philadelphia*, (May 12 –17 2002)
74. A. Bhattacharyya, I. Friel, J. Cabalu, Sandeep Iyer and T. D. Moustakas, “**Ultraviolet Resonant Cavity Light Emitting Diodes grown by Molecular Beam Epitaxy on non-polar Gallium Nitride Substrates**” DARPA meeting, Daytona beach, Florida (May 21st, 2002).
75. E. Iliopoulos and T. D. Moustakas, “**Growth of III-Nitrides by Molecular beam epitaxy**”, National Synchrotron light source users meeting, Brookhaven National Labs (May 22nd 2002).
76. Enrico Bellotti and T.D. Moustakas, “**Design and Fabrication of GaN-based Static Induction Transistor**” Symposium on Static Induction Devices (Tokyo, Japan, May. 2002)
77. T. D. Moustakas, “**III-Nitride Semiconductors and their applications to Optical and Electronic Devices**” XVIII Pan-Hellenic Symposium on Solid

State Physics and Materials Science Heraklion, Crete, Greece (Sept. 15-18, 2002).

78. T.D. Moustakas “**Ordering in Ternary Nitride Alloys**” 13th International Conference on Ternary and Multinary Compounds, Paris (Oct. 14-18, 2002)
79. T. D. Moustakas “**Basic and Applied Research and their Benefits to Society**” Presentation upon receiving an Honorary Doctoral Degree from the Aristotle University of Thessaloniki (June 26, 2003)
80. T.D. Moustakas “**Physics and Technology of Optoelectronic Materials and Devices**” *A series of lectures in the Graduate Program “Physics of Materials” of the Aristotle University of Thessaloniki, Greece (June 23-27, 2003).*
81. T. D. Moustakas “**Optoelectronic Devices based on Nitride Quantum Well Structures**” Aristotle University of Thessaloniki, Greece (June 27, 2003).
82. T. D. Moustakas “**Wide Band Gap Semiconductors: Photonic and Electronic Applications**” International Conference on Electro-ceramics (MIT, August 3-7, 2003).
83. T.D. Moustakas, “**GaN LEDs for Solid State Lighting**”, the Electrochemical Society-New England Section (Northeastern University, March 9, 2004).
84. D. Doppalapudi, R. Milcak, J. Chan, H.L. Tuller, J. Abell, W. Li and T.D. Moustakas, “**Sensors based on SiC-AlN MEMS**” 206th Electrochemical Society Meeting (Honolulu, Hawaii, October 2004)
85. T.D. Moustakas, “**Growth of InN Films by Cluster Beam Epitaxy and RF plasma-assisted MBE**” Indium Nitride Workshop 2, (Kailua-Kona, Hawaii, January 2005).
86. T.D. Moustakas, “**Nitride UV-LEDs based on flat and “wrinkled” quantum wells**”, Photonics West 2005 (San Jose, January, 2005).
87. T. D. Moustakas, “**Low-cost Blue/UV LEDs with very high Photon Conversion and Extraction Efficiency for White Lighting**” 2005 DOE Solid-State Lighting Program Planning Workshop (San Diego, February 2005).
88. T. D. Moustakas, “**GaN LEDs for Solid State Lighting**”, Saint-Gobain Lighting Community Meeting (Boston June 9, 2005)
89. T.D. Moustakas, “**MBE and HVPE Growth of III-Nitrides**” 16th American Conference on Crystal Growth and Epitaxy (Big Sky, Montana, July 10-15, 2005).
90. T. D. Moustakas, J. S. Cabalu, R. Chandrasekaran, S. Riyopoulos “**High efficiency LEDs based on textured GaN templates with wrinkled quantum wells**”, Optics East (Boston, Oct 25. 2005).
91. T.D. Moustakas “**Physics of Textured III-Nitride Quantum Wells for Applications to LEDs**” International Semiconductor Device Research Symposium (Washington DC, Dec. 7-9, 2005).
92. T. D. Moustakas, “**Low-cost Blue/UV LEDs with very high Photon Conversion and Extraction Efficiency for White Lighting**” 2006 DOE Solid-State Lighting Program Planning Workshop (Orlando, February 1-3, 2006).
93. T. D. Moustakas, “**A New Model Describing the Plasma-Assisted MBE Growth of GaN Thin Films and its Alloys with AlN and InN**”, International Conference on Metallurgical Coatings and Thin Films, (San Diego May 1-5, 2006).
94. T. D. Moustakas , “**Significant achievements in III-nitride semiconductors research in the last fifteen years**”, Plenary Speaker, European Workshop on III-Nitride Materials and Devices-Plenary Talk (Heraklion, Crete, Greece, Sept. 18-20, 2006).
95. T. D. Moustakas, “**A new model describing the plasma-assisted MBE growth of GaN thin films**” International Workshop on Nitride Semiconductors 2006, (Kyoto, Japan, Oct. 22-27, 2006)

96. T. D. Moustakas, **“Nitride Semiconductor LEDs”**
New England chapter of IEEE LEOS (Lincoln
Laboratories, Jan. 11, 2007)
97. T. D. Moustakas, **“GaN R&D at Boston
University with emphasis in Solid State
Lighting”** The 10th Annual Boston University
Photonics Center Symposium (June 8th, 2007).
98. T. D. Moustakas, **“Origin of the high
photoconductive gain in AlGaIn thin films”** SPIE
Symposium on “Optoelectronic Devices: Physics,
Fabrication, and Applications IV” (Optics East,
Boston Sept. 9-12, 2007)
99. T. D. Moustakas, **“Progress in III-nitride
semiconductors research and the influence of
Jacques Pankove’s work in the development of
this field”** Joint OSA /IEEE-LEOS Denver
Seminar Jacques Pankove tribute talk (Boulder,
November 8, 2007)
100. T.D. Moustakas, **“ Blue-Green LEDs based on
III-Nitride quantum wells and quantum dots”,**
3rd International Conference on Micro-
Nanoelectronics, Nanotechnology and MEMS
(Athens, Greece, November 18-21, 2007)