

United Arab Emirates University
Physics Department



Short Curriculum Vitae

Personal Data

Name : Nacir Tit
Academic Rank : Professor
Banner ID : 000001440
Place/Date of Birth : 02/06/1965
Nationality : Algerian - Canadian
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Date Joining UAEU : September 1993

Educational Background

- **Ph.D.** Title: "Electronic and Optical Properties of Anodic Oxides on Titanium"
Institution: University of Minnesota (USA)
Date Granted: December 1991
- **M.Sc.** Title: "Photoelectrochemical Spectroscopic Study of Rutile TiO₂ Thin Films"
Institution: University of Minnesota (USA)
Date Granted: December 1988
- **B.Sc.** Title: Solid State Physics
Institution: Université d'Oran (Algeria)
Date Granted: June 1985

Research Interests:

- Calculations of Electronic Structures and Optical Properties of Semiconductor Superlattices and Alloys for both Photonics and Telecommunication Applications.
- Simulation of Photoluminescence in Semiconducting Nanostructures such as Silicon Nanoparticles and Silicon Nanowires for Solar-Energy Applications.
- Simulation of Semiconducting Surfaces for Gas Sensing Applications.
- Calculations of Optical Properties of Porous and Amorphous Silicon for Solar-Energy Applications.

Main Subjects Taught at UAEU in the Last 5 Years:

- General Physics I [PHYS-105]
- General Physics II [PHYS-110]
- Vibrations & Waves [PHYS-240]
- Optics [PHYS-245]
- Mathematical Physics [PHYS-255]
- Classical Mechanics [PHYS-262]
- Computational Physics [PHYS-330]
- Solid State Physics [PHYS-470]
- Modeling of Physical Systems [PHYS-490]
- Semiconductor Physics [PHYS-612]
- Thermodynamics of Materials [MTSE-604]
- Modeling and Computational Methods [MTSE-612]
- Selected Topics in Materials Science & Engineering [MTSE-620]

Details of Research Grants (in the LAST 5 YEARS only)

- “Investigation of the Electronic Properties of GaInNAs Alloys”, (2006), Sponsored by UAEU-Research Affairs (Grant # 06-02-2-11/06, Amount= AED 11,875)
- “Origins of the Bandgap Bowing in the Semiconductor Alloys”, (2009), Sponsored by UAEU-Research Affairs (Grant # 08-02-2-11/09, Amount= AED 11,230)
- “Silicon Nanoparticles for Solar-Energy Applications”, (2010), Sponsored by the Emirates Foundation (Amount= AED 180,000)

Details of Publications in the LAST 5 YEARS

- N. Tit: “Large Configuration-Induced Band-Gap Fluctuations in $\text{GaN}_x\text{As}_{1-x}$ Alloys”, *J. Phys. D: Appl. Phys.* **39** (2006) 2514-2521.
- N. Tit and A. Murat: “Strain-Induced Band-Mixing Effects in ZnS/CdS (001) Superlattices”, *Int. J. Mod. Phys. B* **22** (2008) 1997-2008.
- N. Tit and I.M. Obaidat: “Electronic Band Structures of the Strained $(\text{ZnSe})_m(\text{CdSe})_n$ (001) Superlattices”, *Int. J. Mod. Phys. B* **22** (2008) 4937-4950.
- N. Tit and I.M. Obaidat: “Tight-Binding Method for Quantum-Confinement Energy Calculations in the CdSe/ZnSe Multiple-Quantum Wells”, *Int. J. Mod. Phys. C* **19** (2008) 1635-1645.
- N. Tit and I.M. Obaidat: “Charge Confinements in CdSe/ZnSe Symmetric Double-Quantum Wells”, *J. Phys.: Condens. Matter* **20** (2008) 165205 (10pp).
- N. Tit and I.M. Obaidat: “Insights on the Bound States in the Strained CdSe/ZnSe Single-Quantum Wells”, *Int. J. Mod. Phys. B* **22** (2008) 2055-2069.
- N. Tit and I.M. Obaidat: “Confinement Behaviors of Charge Carriers in Strained CdTe/ZnTe Single-Quantum Wells”, *Physica E* **41** (2008) 23-30.
- N. Tit and I.M. Obaidat: “Coupling Behaviors and Decoupling Transitions of CdTe/ZnTe Symmetric versus Asymmetric Double-Quantum Wells”, *J. Comp. Theo. Nanoscience* **6** (2009) 195-205.
- N. Tit and I.M. Obaidat: “Transition Behaviors from Coupled-to-Uncoupled CdTe/ZnTe Symmetric versus Asymmetric Double-Quantum Wells”, *Microelectronics Journal* **40** (2009) 523-526.
- I.M. Obaidat and N. Tit: “Quantum-Confinement versus Strain Effects in the $\text{Zn}(\text{Cd})\text{S}(\text{Se})$ Family of Superlattices”, *Microelectronics Journal* **40** (2009) 527-529.
- N. Tit and I.M. Obaidat: A **Book-CHAPTER**: “Rules Governing the Confinements in Semiconductor Quantum Wells”, as Chapter 2 in a Book on: ”Advances in Condensed Matter Physics”, Ed. A.H. Reshak (Research Signpost, Kerala, India, 2009) pp. 27-54 [<http://www.signpost.com>].

- N. Tit, I.M. Obaidat and H. Alawadhi: “Origins of Bandgap Bowing in Compound-Semiconductor Common-Cation Ternary Alloys”, *J. Phys.: Condens. Matter* **21** (2009) 075802 (6pp).
- N. Tit, I.M. Obaidat and H. Alawadhi: “Absence of the Bowing Character in the Common-Anion II-VI Ternary Alloys”, *J. Alloys & Compounds* **481** (2009) 340-344.
- N. Tit, I.M. Obaidat and H. Alawadhi: “Effect of Bond Ionicity on the Bandgap Bowing in Compound Semiconductor Alloys”, *J. Comp. Theo. Nanoscience* **6** (2009) 1646-1653.
- N. Tit, I.M. Obaidat and H. Alawadhi: “Existence or Absence of Bandgap Bowing in Compound Semiconductor Ternary Alloys”, Proceedings of the Microscopy of Semiconducting Materials (MSM-XVII), Oxford, UK, during 17-20 March 2009. *J. Phys.: Conf. Series* **209** (2010) 012024 (4 pp).
- I.M. Obaidat, Y. Haik, V. Mohite, B. Issa and N. Tit: “Peculiar Magnetic Properties of MnZnGdFeO Nanoparticles”, *Adv. Sci. Lett.* **2** (2009) 60-64.
- I.M. Obaidat, V. Mohite, B. Issa, N. Tit and Y. Haik: “Predicting a Major Role of Surface Spins in the Magnetic Properties of Ferrite Nanoparticles”, *Crystal Res. Technol.* **44** (2009) 489-494.
- N. Tit, N. Amrane, and A.H. Reshak: “Comparison of Bowing Behaviors between III-V and II-VI Common-Cation Semiconductor Ternary Alloys”, *J. Electron. Mat.* **39** (2009) 178-186.
- N. Tit, N. Amrane, and A.H. Reshak: “Bandgap Characters in GaAs-based Ternary Alloys”, *Crystal Res. Technol.* **45** (2010) 59-69.
- N. Tit, N. Amrane, and A.H. Reshak: “Electronegativity Effects on the Bandgap Bowing Characters in Compound-Semiconductor Ternary Alloys”, Proceedings of the International Conference on Nanotechnology & Advanced Materials, Bahrain 4-7 May 2009. *Int. J. Nanoscience* (2010) in press.
- N. Tit, Z.H. Yamani, J. Graham and A. Ayesh: “Origins of the Visible-Light Emissions in Silicon Nanocrystals Coated with Hydrogen”, *J. Luminescence* **130** (2010) 2226-2237.
- N. Tit, Z.H. Yamani, J. Graham and A. Ayesh: “Effects of the Passivating Coating on the Properties of Silicon Nanocrystals”, *Mat. Chem. Phys.* **124** (2010) 927-935.
- N. Tit: “Nitrogen-Electronegativity-Induced Bowing Character in the Ternary Zincblende $\text{Ga}_{1-x}\text{In}_x\text{N}$ Alloys”, *J. Alloys & Compounds* **503** (2010) 529-537.

Membership of Scientific and Professional Organizations

- American Physical Society
- Royal Macroscopy Society
- European Materials Research Society

HONORS AND AWARDS

- UAEU-College of Science Award for Excellence in Scholarship for the Academic Year 2009-2010.
- Award of Best Paper in the Category of Non-Funded research Projects, Presented in the UAEU-ARC-10 Conference (Al-Ain, April 13-16, 2009).
- UAEU Award for Excellence in Research and Teaching for the Academic Year 2002-2003.
- Abdul-Hameed Shouman Prize of Young Arab Scientists in the Field of Physics for 1996 (Ceremony: 29 October 1997, Amman, Jordan).
- PhD-Dissertation Fellowship, University of Minnesota, Academic Year 1990-1991 (USA).
- The Abdus-Salam ICTP-Junior Associateship during 1999-2004, Trieste (Italy).
- Awarded the First Prize in Physics in Bachelor's Graduation, Université d'Oran, Algeria (June 1985).
- Algerian Scholarship to the USA (1985-1988).

Conferences, Workshops and Seminars

- Participated in more than 42 International Conferences and Workshops
- Chaired 8 sessions in 8 Local and International Conferences
- Chaired the organizing committee of the UAE-CERN Workshop on: "High-Energy Physics and its Applications", Al-Ain, 26-28/11/2007
- Invited to deliver seminars locally and abroad.

Editorial Board

- International Journal of Nanoelectronics & Materials (Malaysia)
- Journal of Spectroscopy & Dynamics (India)

Referee

- Refereed papers in International Journals
- Refereed conference proceedings
- Refereed Research Proposals
- Refereed Promotion Files locally and abroad