

Zacharias G. Fthenakis

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EDUCATION

- PhD in Physics, Physics Department, University of Crete (2010)
- Masters in Condensed Matter Physics, Physics Dept., University of Crete (1996)
- Diploma in Physics, Physics Department, University of Crete (1994)

RESEARCH AND TEACHING APPOINTMENTS

9/2019 - Postdoctoral Research Associate, TCPI – National Hellenic Research Foundation, Greece

1/2017 – 1/2019: Postdoctoral Research Associate, University of South Florida, USA

1/2014 – 1/2015: Postdoctoral Research Associate, Foundation for Research and Technology (FORTH), Greece

9/2013 – 9/2016: Adjunct Professor, Hellenic Mediterranean University, Greece

9/2011 – 9/2013: Postdoctoral Research Associate, Michigan State University, USA

6/2001 – 8/2001: Research Associate, University of Exeter, UK

9/2000 – 9/2011: Instructor - Adjunct Professor - Visiting Assistant Professor, Hellenic Mediterranean University, Greece

MAIN RESEARCH INTERESTS

- Modeling for the study of materials properties
- Ferroelectric materials including phase transitions
- New Carbon allotropes, both 3- and 2-dimensional
- Graphene, carbon nanotubes, fullerene-like structures and other materials
- Structural, Mechanical, Electronic, Magnetic and Transport properties of finite and periodic systems (2- and 3-dimensional)

HONORS – AWARDS - FUNDING

- IOP Trusted Reviewer (2020)
- TMR-Network "USEFULL", Fellowship (6/2001 – 8/2001)
- IESL-FORTH Postgraduate Fellowship (1995 – 1999)
- Award from the Summer School of Advanced Physics, Univ. of Crete (1993)
- Award from the Hellenic Mathematical Society (1988)

PUBLICATIONS - PRESENTATIONS

- 29 articles in refereed journals, 2 articles in conference proceedings, 1 chapter in a book, >300 citations, h-index: 11 (Sept. 2020); ResearcherID:0000-0003-2661-5743
- 39 presentations, 24 talks.

SELECTED RECENT PUBLICATIONS

1. "Structural deformations and mechanical properties of Si₂BN under uniaxial and uniform biaxial strain in comparison with graphene: An ab-initio study" **Z. G. Fthenakis** and M. Menon, Phys. Rev. B **99**, 205302 (2019)
2. "All-mechanical polarization control and anomalous (electro)mechanical responses in ferroelectric nanowires" D. Pappas, **Z. G. Fthenakis** and I. Ponomareva, Nano Lett. **18**, 5996 (2018)
3. "Dynamics of antiferroelectric phase transition in PbZrO₃", **Z. G. Fthenakis** and I. Ponomareva, Phys. Rev. B **96**, 184110 (2017)
4. "Are the experimentally observed 3-dimensional Carbon honeycombs, all-sp² structures? The dangling p-orbital instability." **Z. G. Fthenakis**, RSC Adv. **7**, 9790 (2017)
5. "Graphene allotropes under extreme uniaxial strain: an ab initio theoretical study", **Z. G. Fthenakis**, N. N. Lathiotakis, Phys. Chem. Chem. Phys. **17**, 16418 (2015).
6. "Successive spin polarizations underlying a new magnetic coupling contribution in diluted magnetic semiconductors" A. N. Andriotis, **Z. G. Fthenakis** and M. Menon, J. Phys.: Cond. Matt. **27**, 052202, (2015)
7. "Effect of structural defects on the thermal conductivity of graphene: From point to line defect to haeckelites" **Z. G. Fthenakis**, Z. Zhu, and D. Tománek, Phys. Rev. B **89**, 125421 (2014)
8. Topologically protected conduction state at carbon foam surfaces: An ab-initio study" Z. Zhu, **Z. G. Fthenakis**, J. Guan, and D. Tománek, Phys. Rev. Lett. **112**, 026803 (2014)
9. "Limits of mechanical energy storage and structural transformations in twisted nanotube ropes" **Z. G. Fthenakis**, Z. Zhu, D. Teich, G. Seifert, and D. Tománek, Phys. Rev. B **88**, 245402 (2013)
10. "Computational study of the thermal conductivity in defective carbon nanostructures" **Z. G. Fthenakis**, and D. Tománek, Phys. Rev. B **86**, 125418 (2012)