

DEPARTMENT OF PHYSICS
Southern University and A&M College
Baton Rouge, Louisiana 70813

Publications of Physics Faculty
Spring 2005- Spring 2011

The name of a faculty member is followed by the listing of his/her publications

Diola Bagayoko

1. *“Ab-initio Electronic Properties of Rutile TiO₂,”* C. E. Ekuma and D. Bagayoko, Submitted to Proceedings of the National Academy of Science (2011).
2. *“First Principle Local Density Approximation Description of Electronic Properties of Ferroelectric Sodium Nitrite (NaN₂O₂),”* E. C. Ekuma, L. Franklin, G. L. Zhao, J. T. Wang, and D. Bagayoko. Submitted for publication (2011).
3. *“Ab Initio Local Density Approximation Description of the Electronic Properties of Zinc Blende Cadmium Sulfide (zb-CdS),”* E. C. Ekuma, L. Franklin, G. L. Zhao, J. T. Wang, and D. Bagayoko. Accepted for publication in Physica B (2011).
4. *“Local Density Approximation Description of Electronic Properties of Wurtzite Cadmium Sulfide (w-CdS),”* E. C. Ekuma, L. Franklin, G. L. Zhao, J. T. Wang, and D. Bagayoko. Accepted for publication in the Canadian Journal of Physics (2011).
5. *“Density Functional Description of Electronic Properties of Wurtzite Zinc Oxide (w-ZnO),”* L. Franklin, G. L. Zhao, and D. Bagayoko. Accepted for publication in the Proceedings of the Louisiana Academy of Science (2010). A much expanded version of this paper has been submitted to PRB.
6. *“Local Density Approximation Description of Electronic Properties of Wurtzite Cadmium Sulfide (w-CdS),”* E. C. Ekuma, L. Franklin, G. L. Zhao, J. T. Wang, and D. Bagayoko. Accepted for publication in the Proceedings of the Louisiana Academy of Science (2010). A much extended version of this paper has been accepted for publication in the Canadian Journal of Physics. (2011).
7. *“Density functional theory description of electronic properties of wurtzite zinc oxide (w-ZnO),”* L. Franklin, G. L. Zhao, and D. Bagayoko. Submitted to Physical Review B. 2010.

8. *Doped C60 Study from First Principles Simulation,*” Shizhong Yang, Shengmin Guo, Shuju Bai, Ebrahim Khosravi, Guang-Lin Zhao and Diola Bagayoko, Journal of Superconductivity and Novel Magnetism, Springer, New York, 1557 (January 2010).

9. *Comment on “Band gap bowing and electron localization of Ga_xIn_{1-x}N”* [*J. Appl. Phys.*, vol. 100, page 093717 (2006)]. D. Bagayoko, L. Franklin, G. L. Zhao, and H. Jin, *J. Appl. Phys.* 103, 096101 (2008).

10. *“A Solution to the Band Gap Catastrophe: Predictive Calculations of Properties of Semiconductors and of Nuclei.”* D. Bagayoko. Proceedings, International Seminar on Theoretical Physics and Applications to Development (ISOTPAND), August 2008, Abuja, Nigeria. Available in the African Journal of Physics (<http://sirius-c.ncat.edu/asn/ajp/allissue/ajp-ISOTPAND/index.html>).

11. *“Predictions of the Electronic Structure and Related Properties of Cubic Calcium Hexaboride (CaB₆).*” L. Franklin, D. Bagayoko, H. Jin, and G. L. Zhao. Accepted for publication in the Proceedings of the 2007 Conference of the Louisiana Academy of Science.

12. *“Modeling and analysis of average daily air temperature from the GLOBE program and applications to teaching and learning science.”* Siaka Sangaré, Komakan Konaté, and Diola Bagayoko. Accepted for publication in the Proceedings, 2007 Conference of the Louisiana Academy of Science.

13. *“Electronic structure of rutile Titanium Dioxide (TiO₂).*” H. Jin, L. Franklin, G. L. Zhao, and D. Bagayoko. Accepted for publication in the Proceedings of the 2007 Conference of the Louisiana Academy of Science.

14. *« Modélisation et analyse de quelques données de température du programme GLOBE. »* Siaka Sangaré, Komakan Konaté, and Diola Bagayoko. Proceedings, 2006 Malian Symposium of Applied Sciences (MSAS2006). Pages 71-81, 2008.

15. *“A Proposed New Measurement of the Superconducting Gap in YBa₂Cu₃O₇.”* G. L. Zhao* and D. Bagayoko, Accepted for Publication in the Journal of Modern Physics B, Vol.21, Nos. 18 & 19, 3290 (2007).

16. *“A Universal Relation between the Densities of States near Van Hove Singularities and the Effective Electron Masses in 1-Dimensional Materials.”* G. L. Zhao and D. Bagayoko, Submitted to the Journal of Nanotechnology for publication B, Vol. 21, Nos. 18 & 19, 3477 (2007).

17. *Comments on “Band structures and optical spectra of InN polymorphs: Influence of quasiparticle and excitonic effects,”* D. Bagayoko, L. Franklin, H. Jin, and G. L. Zhao. *Phys. Rev.* 76, 037101 (2007).

18. *“Density functional Calculations of the Growth and Structural Properties of Short Carbon Nanotubes,”* G. L. Zhao and D. Bagayoko. Refereed Proceedings, International Conference, Switzerland, July 2006.

19. "*Prédictions des Propriétés Electroniques des Atomes, Molécules, et Semi-conducteurs.*" D. Bagayoko. Proceedings, 2004 Malian Symposium of Applied Sciences (MSAS), Bamako, Mali. Pages 53-58. ISBN No. 951-42-8026-1.
20. "*Density Functional Band Gaps of AlAs.*" H. Jin, G. L. Zhao, and D. Bagayoko. Phys. Rev. B73, 245214 (2006).
21. "*Ab-initio Simulations of the Growth and Structural Properties of Short Carbon Nanobells.*" G. L. Zhao, D. Bagayoko, and E. G. Wang. Proceedings of the 2005 China Conference on Nanoscience and Technology, Beijing, China, July 2005.
22. "*Re-examination of the Ab-initio Calculation of the Electronic Structures of ZnSe, Ge, and GaAs.*" G. L. Zhao, L. Franklin, and D. Bagayoko. Submitted to Physical Review B, 2005.
23. "*LDA and LCAO-BZW Description of Electronic Properties of Wurtzite Zinc Oxide (w-ZnO).*" Diola Bagayoko, Lashounda Franklin, and G. L. Zhao. Proceedings of the 2005 National Conference of the National Society of Black Physicists (www.nsbp.org), Orlando, Florida.
24. "*Predictions of Electronic, Structural, and Elastic Properties of Cubic InN.*" Diola Bagayoko, Lashounda Franklin, and G. L. Zhao, Journal of Applied Physics 96, 4297-4301, 2004.
27. "*Density Functional Band Gap of Wurtzite InN.*" Diola Bagayoko and Lashounda Franklin, Journal of Applied Physics, 97, 123708, 2005.

Rambabu Bobba

1. *Research Progress in High Voltage Spinel $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$ Material*, R. Santhanam, B. Rambabu, *Journal of Power Sources*, 196, 2010
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4. *Electrochemical performance of $\text{LiNi}_{0.5}\text{Mn}_{1.5}\text{O}_4$ prepared by improved solid state method as cathode in hybrid supercapacitor*, Huiming Wu, Ch. Venkateswara Rao, B. Rambabu* *Journal of Materials Chemistry and Physics*. Volume 116, Issues 2-3, 15 August 2009, Pages 532-535
5. Reduction of V⁴⁺ from V⁵⁺ using polymer as a surfactant for electrochemical applications, V S Reddy Channu1, Rudolf Holzel, B. Rambabu 2, Rajamohan R. Kalluru3, Quinton L. Williams3, *Int. J. Electrochem. Sci.*, 5 (2010) 605 – 614
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Edward E. Doomes

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7. "First cross-correlation analysis of interferometric and resonant-bar gravitational-wave data for stochastic backgrounds," *The LSC: E.E. Doomes, et al; Phys. Rev. D* 76, 022001 (2007)
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Ali R. Fazely

Search Capability for $\bar{\nu}_{e,\tau} \rightarrow \nu_{e,\tau}$ Decays in Cubic Kilometer Neutrino Detectors

Authors: [A.R. Fazely](#), [R.M. Gunasingha](#), [R.L. Imlay](#), [K.D. Muhammad](#), [S.V. Ter-Antonyan](#), [X. Xu](#) (Southern University),

Journal reference: Phys. Rev. D 81, 117101 (2010)

DOI: [10.1103/PhysRevD.81.117101](https://doi.org/10.1103/PhysRevD.81.117101)

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Authors: M. Kowalski

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Authors: Stephan Hundertmark and Antoine Kouchner

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Authors: Marek Kowalski and Anna Mohr
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- 20, [paper](#), [arxiv](#), [doi](#), [spires](#)
Authors: IceCube Collaboration: A. Achterberg et al
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Authors: Julia K. Becker, Andreas Groß, Kirsten München, Jens Dreyer, Wolfgang Rhode and Peter L. Biermann
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Authors: IceCube Collaboration and InterPlanetary Network: A. Achterberg et al
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Title: *High-Energy Neutrinos in the Context of Multimessenger Astrophysics*
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Ref.: Physical Review **D79** (2009) 062001, 18 March 2009 [[arXiv:0809.1646](#) [[astro-ph](#)]]
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Authors: G. Wikström and J. Edsjö
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Ref.: Journal of Cosmology and Astroparticle Physics **04** (2009) 009, 9 April 2009 [[arXiv:0903.2986](#) [[astro-ph.CO](#)]]
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Ref.: Physical Review Letters **102** (2009) 201302, 21 May 2009 [[arXiv:0902.2460](#) [[astro-ph.CO](#)]]
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Authors: Tyce DeYoung
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Ref.: Modern Physics Letters **A24** (2009) 1543-1557, 28 June 2009 [[arXiv:0906.4530](#) [[astro-ph.HE](#)]]
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