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Address: Idukki ,Kerala,India - 685604

Expertise

Condensed Matter Physics

Structural, Electronic, and Optical Properties of Materials

Work experience

1. Pavanatma College, Murrickacherry 1996 — Present

Associate Professor

Idukki

Education

1. Ph.D - 2015

MG University Kottayam

Honours and Awards

Junior Research Fellowship - 1995

1.

UGC/CSIR

Research Project

COMPUTATIONAL METHOD FOR THE ACCURATE TREATMENT OF SURFACE ROUGHNESS IN NANO-SCALE DG MOSFETS WITH HIGH-K GATE DIELECTRICS AND PARALLEL CONNECTED GATE CONTACTS OF DIFFERENT WORK-FUNCTIONS

Role: PI

Year 2016, Amount 195000

Publication

1. Large birefringence in the quasi-one-dimensional material Sb₂Se₃: A DFT investigation of electronic and optical anisotropy

C.P. Sujith ., Saji Joseph ., A.K. Sneha ., Thomas Mathew ., Vincent Mathew .,
Journal of Physics and Chemistry of Solids, Volume 174, Year 2023, Pages 111161

2. A first principles characterization of electronic and optical anisotropy of quasi-one-dimensional transition metal lead sulfides PbMS₃ (M = Hf, Zr)

C.P. Sujith ., Saji Joseph ., A.K. Sneha ., Thomas Mathew ., Vincent Mathew .,
Physica B: Condensed Matter, Volume 669, Year 2023

3. Large optical anisotropy in quasi-one-dimensional tantalum thallium chalcogenides TaTlX₃ (X = S, Se): A first-principles investigation

C.P. Sujith ., Saji Joseph ., Thomas Mathew ., Vincent Mathew .,
Materials Chemistry and Physics, Volume 303, Year 2023, Pages 127754

4. A first principles characterization of electronic and optical anisotropy of quasi-one-dimensional transition metal lead sulfides PbMS₃ (M = Hf, Zr)

C.P. Sujith ., Saji Joseph ., A.K. Sneha ., Thomas Mathew ., Vincent Mathew .,
Physica B: Condensed Matter, Volume 669, Year 2023, Pages 415270

5. Large optical anisotropy in quasi-one-dimensional tantalum thallium chalcogenides TaTlX₃ (X = S, Se): A first-principles investigation

C.P. Sujith ., Saji Joseph ., Thomas Mathew ., Vincent Mathew .,
Materials Chemistry and Physics, Volume 303, Year 2023

6. Large birefringence in the quasi-one-dimensional material Sb₂Se₃: A DFT investigation of electronic and optical anisotropy

C.P. Sujith ., Saji Joseph ., A.K. Sneha ., Thomas Mathew ., Vincent Mathew .,
Journal of Physics and Chemistry of Solids, Volume 174, Year 2023

7. **Ab initio investigation of the structural and electronic properties of tantalum thallium chalcogenides TaTlX₃ (X S, Se)**

Sujith, CP and Joseph, Saji and Mathew, Thomas and Mathew, Vincent
Journal of Solid State Chemistry, Volume 315, Year 2022, Pages 123534

8. **Exploring the electronic and optical anisotropy of quasi-one-dimensional ternary chalcogenide CrSbSe₃: A DFT study**

Sujith, CP and Joseph, Saji and Mathew, Thomas and Mathew, Vincent
Solid State Sciences, Year 2022, Pages 106926

9. **First-principles investigation of structural, electronic and optical properties of quasi-one-dimensional barium cadmium chalcogenides Ba₂CdX₃ (X S, Se, Te) using HSE06 and GGA-PBE functionals**

Sujith, CP and Joseph, Saji and Mathew, Thomas and Mathew, Vincent
Journal of Physics and Chemistry of Solids, Volume 161, Year 2022, Pages 110488

10. **Ab initio investigation of the structural and electronic properties of tantalum thallium chalcogenides TaTlX₃ (X = S,Se)**

C.P. Sujith ., Saji Joseph ., Thomas Mathew ., Vincent Mathew .,
Journal of Solid State Chemistry, Volume 315, Year 2022

11. **Exploring the electronic and optical anisotropy of quasi-one-dimensional ternary chalcogenide CrSbSe₃: a DFT study**

C.P. Sujith ., Saji Joseph ., Thomas Mathew ., Vincent Mathew .,
Solid State Sciences, Volume 130, Year 2022

12. **First-principles investigation of structural, electronic and optical properties of quasi-one-dimensional barium cadmium chalcogenides Ba₂CdX₃ (X = S, Se, Te) using HSE06 and GGA-PBE functionals**

C.P. Sujith ., Saji Joseph ., Thomas Mathew ., Vincent Mathew .,
Journal of Physics and Chemistry of Solids, Volume 161, Year 2022

13. **Density functional study of structural, electronic and optical properties of quasi-one-dimensional compounds BaTiX₃(X=S,Se)**

Thomas Mathew ., Suseel Rahul K ., Saji Joseph ., Vincent Mathew .,
Superlattices and Microstructures, Volume 153, Year 2021

14. **Density functional study of structural, electronic and optical properties of quasi-one-dimensional compounds BaTiX₃ (X S, Se)**

Mathew, Thomas and Joseph, Saji and Mathew, Vincent and others
Superlattices and Microstructures, Volume 153, Year 2021, Pages 106859

15. **Challenges in the Downscaling of Semiconductor Memory**

Saji Joseph
Journal of Emerging Technologies and Innovative Research , Volume 6, Year 2019, Pages 20-24

16. **An Efficient Computational Method for Modeling Interface Roughness in Laterally Contacting Tri-Metal Double Gate MOSFETs**
Saji Joseph, Vincent Mathew
Pesquisa, Volume 3, Year 2018, Pages 1-18
17. **Channel Thickness Dependence of DIBL Effect in Double Gate MOSFET**
Saji Joseph
Journal of Emerging Technologies and Innovative Research, Volume 5, Year 2018, Pages 43-47
18. **Transport characteristics and subthreshold behavior of High-K dielectric double gate MOSFETs with parallel connected gates**
Josepha, Saji and Ta, George James and Mathew, Vincent
Journal of Electron Devices, Volume 16, Year 2012, Pages 1363--1369
19. **Simulation of high- κ dielectrics in counter doped double gate metal oxide semiconductor field effect transistors**
James T.G.;Joseph S.;Mathew V.
Journal of Nanoelectronics and Optoelectronics, Volume 5, Year 2010, Pages 43-49
20. **Threshold voltage control through layer doping of double gate MOSFETs**
Joseph S.;George James T.;Mathew V.
Journal of Semiconductor Technology and Science, Volume 10, Year 2010, Pages 240-250
21. **Effect of counter-doping thickness on double-gate MOSFET characteristics**
George J.;Joseph S.;Mathew V.
Journal of Semiconductor Technology and Science, Volume 10, Year 2010, Pages 130-133
22. **Short channel effects in Counterdoped nanoscale double-gate MOSFETs**
T George James, Saji Joseph, Vincent Mathew
Research Lines, Volume 3, Year 2010, Pages 19-26
23. **The influence of metal gate work function on short channel effects in atomic-layer doped DG MOSFETs**
George James, T and Joseph, Saji and Mathew, Vincent
Journal of Electron Devices, Volume 8, Year 2010, Pages 310--319
24. **Simulation of High--K Dielectrics in Counter Doped Double Gate Metal Oxide Semiconductor Field Effect Transistors**
James, T George and Joseph, Saji and Mathew, Vincent
Journal of nanoelectronics and optoelectronics, Volume 5, Year 2010, Pages 43--49
25. **Reduction of off-state leakage current on fully depleted DG-MOSFETs**
S. Joseph ., G. James ., T.V. Mathew .,
2009 International Conference on Emerging Trends in Electronic and Photonic Devices and Systems, ELECTRO '09, Volume , Year 2009, Pages 148-151
26. **Effect of channel layer doping on the performance of nanoscale DG MOSFETs**

S. Joseph ., G. James ., T.V. Mathew .,
2009 International Conference on Emerging Trends in Electronic and Photonic Devices and Systems,
ELECTRO '09, Volume , Year 2009, Pages 49-52

27. **Reduction of Off-State Leakage Current on Fully Depleted DG-MOSFETs**

T George James, Saji Joseph, Vincent Mathew
Proc. International Conference on Emerging Trends in Electronic and Photonic Devices and Systems,
Electro-2009, Volume , Year 2009, Pages 151-154

28. **Effect of unintentional charges on the performance of nanoscale DGMOSFETs**

Joseph S.;James G.;Mathew V.
2008 2nd National Workshop on Advanced Optoelectronic Materials and Devices, AOMD 2008, Volume ,
Year 2008, Pages 243-248

29. **Effect of unintentional charges on the performance of nanoscale DGMOSFETs**

Saji Joseph, T George James, Vincent Mathew
Proc. 2nd National Workshop on Advanced Optoelectronic Materials and Devices AOMD-2008, Volume ,
Year 2008, Pages 43-48