

## SAAD BINOMRAN

**King Saud University**  
**Physics and Astronomy Department, College of Science**  
**PO BOX 2455, Riyadh 11451, Saudi Arabia**

Phone: + 966 1 467-6626

e-mail: [somran@ksu.edu.sa](mailto:somran@ksu.edu.sa)

### EDUCATION:

- Doctor of Philosophy in physics, University of Arkansas, May 2008.
- Master of Science in physics, University of Arkansas, May 2004.
- Bachelor of Science in Physics, King Saud University, Saudi Arabia, May 1998.

### PROFESSIONAL POSITIONS:

- 2012-present, Associate Professor, Department of Physics and Astronomy, King Saud University, Riyadh, Saudi Arabia.
- 2011-Present, Vice-dean of Science and Human studies College, Salman bin Abdulaziz University, AlKharj, Saudi Arabia.
- 2008-2012, Assistance Professor, Department of Physics and Astronomy, King Saud University, Riyadh, Saudi Arabia.
- 2008-present, Research Affiliate, Computational Condensed Matter Physics (CCMP) Group, University of Arkansas.
- 2002-2008, Research Assistant at the Department of Physics, University of Arkansas.
- 1999-present, Demonstrator at the Department of Physics, King Saud University, Riyadh, Kingdom of Saudi Arabia.
- 1998-1999, Physics Teacher in High School at Ministry of Education, Riyadh, Kingdom of Saudi Arabia.

### REVIEW ACTIVITIES:

Referee to IOP Journals

Referee to Material Research Society Journals

### PUBLICATIONS:

1. M. Merabet, D. Rached, R. Khenata, S. Benalia, B. Abidri, N. Bettahar, **S. Bin Omran**, "Electronic structure of  $(BP)_n/(BAs)_n$  (0 0 1) superlattices", Physica B: Condensed Matter, 406 3247 (2011).

2. M.A. Ghebouli, A. Bouhemadou, B. Ghebouli, M. Fatmi and **S. Bin-Omran**, "Prediction study of the elastic and thermodynamic properties of the newly discovered tetragonal SrPd<sub>2</sub>Ge<sub>2</sub> phase", Solid State Communications, 151 976 (2011).
3. M.A. Ghebouli, B. Ghebouli, A. Bouhemadou, M. Fatmi and **S. Bin-Omran**, "Structural, elastic, electronic, optical and thermodynamic properties of KMgH<sub>3</sub>", Solid State Sciences 13 647 (2011).
4. D. Allali, A. Bouhemadou, **S. Bin-Omran**, "Theoretical prediction of the structural, electronic and optical properties of SnB<sub>2</sub>O<sub>4</sub> (B = Mg, Zn, Cd)", Computational Materials Science 51 194 (2012).
5. A. Maachou, H. Aboura, B. Amrani, R. Khenata, **S. Bin Omran**, Dinesh Varshney, "Structural stabilities, elastic and thermodynamic properties of Scandium Chalcogenides via first-principles calculations", Computational Materials Science, 50 3123 (2011).
6. F. Zerarga, A. Bouhemadou, R. Khenata and **S. Bin-Omran**, " Structural, electronic and optical properties of spinel oxides ZnAl<sub>2</sub>O<sub>4</sub>, ZnGa<sub>2</sub>O<sub>4</sub> and ZnIn<sub>2</sub>O<sub>4</sub>", Solid State Sciences 13 1638 (2011).
7. A. Bouhemadou, F. Zerarga, A. Almuhayya and S. Bin-Omran, "FP-LAPW study of the fundamental properties of the cubic spinel CdAl<sub>2</sub>O<sub>4</sub>", Materials Research Bulletin, 46 (12) 2252 (2011).
8. M. Merabet, S. Benalia, D. Rached, R. Khenata, A. Bouhemadou and **S. Bin Omran**, Ali H. Reshak, M. Rabah, "Structural and electronic properties of bulk GaP and AlP and their (GaP)<sub>n</sub>/(AlP)<sub>n</sub> superlattices", Superlattices and Microstructures 49 132 (2011).
9. K. Haddadi, A. Bouhemadou, L. Louail and **S. Bin-Omran**, "Inverse-perovskite oxides Ca<sub>3</sub>EO with E = Si, Ge, Sn, Pb: Structural, elastic and thermal properties", Solid State Communications 150 1995 (2010).
10. F. Semari, R. Khenata, M. Rabah, A. Bouhemadou, **S. Bin-Omran**, A.H. Reshak and D. Rached, "Full potential study of the elastic, electronic, and optical properties of spinels MgIn<sub>2</sub>S<sub>4</sub> and CdIn<sub>2</sub>S<sub>4</sub> under pressure effect". Journal of Solid State Chemistry 183, 12 (2010).
11. M. Hachemaoui, R. Khenata, A. Bouhemadou, **S. Bin-Omran**, Ali H. Reshak, F. Semari, D. Rached, "Prediction study of the structural and elastic properties for the cubic skutterudites LaFe<sub>4</sub>A<sub>12</sub> (A D P, As and Sb) under pressure effect", Solid State Communications 150 1869 (2010).
12. M.Reffas,A.Bouhemadou,R.Khenata,T.Ouahrani, **S. Bin-Omran**, " Ab initio study of structural, elastic, electronic and optical properties of spinel SnMg<sub>2</sub>O<sub>4</sub>", Physica B: Condensed Matter 405 4079 (2010).
13. **S. Bin-Omran**, "The Influence of Strain on the Polarization of Epitaxial (Ba<sub>0.70</sub>Sr<sub>0.30</sub>)TiO<sub>3</sub> Ultrathin Film Obtained from First Principles", J. Phys.: Condens. Matter 22 275901 (2010).
14. **S. Bin-Omran** I. Kornev, I. Ponomareva and L. Bellaiche, "Diffuse Phase Transition in Ferroelectric Ultrathin Films from First Principles", Phys. Rev. B 81, 094119 (2010).
15. **S. Bin-Omran**, "Properties of Ferroelectric Ultrathin Films from First Principles", Ph.D's dissertation, University of Arkansas, May 2008.
16. **S. Bin-Omran**, I. Ponomareva and L. Bellaiche , "Dependence of Polarization on Epitaxial Strain in Ferroelectric Ultrathin Films from First Principles", Phys. Rev. B. 77, 144105 (2008).
17. V. Ranjan, **S. Bin-Omran**, D Sichuga, R. S. Nichols, L. Bellaiche and A. Alsaad, "Properties of GaN/ScN and InN/ScN superlattices from first principles", Phys. Rev. B 72, 085315 (2005).

18. V. Ranjan, **S. Bin-Omran**, L. Bellaiche and A. Alsaad, "Isostructural phase transitions in GaN/ScN and InN/ScN superlattices", Phys. Rev. B 71, 195302 (2005).
19. **S. Bin-Omran**, "Properties of ordered  $\text{Sc}_{1-x}\text{In}_x\text{N}$  alloys from first-principles", Master's thesis, University of Arkansas, May 2004.

## SCIENTIFIC CONFERENCES:

1. Saad Bin-Omran "A first principles study of strain dependence on the polarization of epitaxial  $(\text{Ba}_{0.70}\text{Sr}_{0.30})\text{TiO}_3$  ultrathin film",  $\Psi_k$ -2010 conference, in Berlin, Germany, from September 12 to 16, 2010.
2. Saad Bin-Omran "A first principles study of strain dependence on the polarization of epitaxial  $(\text{Ba}_{0.70}\text{Sr}_{0.30})\text{TiO}_3$  ultrathin film", 4<sup>th</sup> International Conference on Advanced Computational Engineering and Experimenting, ACE-X 2010, 08-09 JULY, 2010 (Paris, France).
3. S. Bin-Omran, "Influence of Strain on the Polarization of Epitaxial  $(\text{Ba},\text{Sr})\text{TiO}_3$  Ultrathin Film from First Principles", Condensed Matter and Material Physics (CMMP) 2009 Conference, December 15-17, 2009 (Warwick, United Kingdom).
4. S. Bin-Omran I. Kornev, I. Ponomareva and L. Bellaiche, "Effect of Mechanical and Electrical Boundary Conditions on Phase Transitions in PZT Ultrathin Films", 2009 Materials Research Society Fall Meeting, November 30-December 4 (Boston, MA 02115).
5. S. Bin-Omran and L. Bellaiche, "A First Principles Study of Ferroelectric Phase Transitions in  $\text{Pb}(\text{Zr}_{0.4}\text{Ti}_{0.6})\text{O}_3$  Ultrathin Films". Joint meeting of 12<sup>th</sup> International Meeting on Ferroelectricity and 18<sup>th</sup> IEEE International Symposium on Applications of Ferroelectrics, August 23 to 27, 2009 at Xi'an, China.
6. S. Bin-Omran, I. Ponomareva, and L. Bellaiche, "Unusual Behaviour of Polarization-Strain Coupling in PZT Ultrathin Films". The International Conference for NanoTechnology Industries: The Leading Technology of 21<sup>st</sup> Century, Riyadh, Saudi Arabia, April 2009.
7. S. Bin-Omran, I. Kornev, I. Ponomareva, and L. Bellaiche, "Diffuse Phase Transition in Ferroelectric Ultrathin Films" (Fundamental Physics of Ferroelectrics, Williamsburg, USA, 2009).
8. S. Bin-Omran, I. Ponomareva and L. Bellaiche, "Dependence of Polarization on Epitaxial Strain in  $\text{BaTiO}_3$  and PZT Ultrathin Films from First-Principles" (Fundamental Physics of Ferroelectrics, Williamsburg, USA, 2008).
9. L. Bellaiche, S. Bin-Omran, I. Kornev, S. Lisenkov, L. Louis, I. Ponomareva, S. Prosandeev, R. Haumont, G. Geneste, B. Dkhil, T. Ostapchuk, J. Hlinka, and J. Petzelt, " Properties of Ferroelectrics, Ferromagnetic and multiferroics from atomistic simulations" (Fundamental Physics of Ferroelectrics, Williamsburg, USA, 2008).

## AWARDS AND MEMBERSHIP

- 2008 Sigma Xi (the Scientific Research Society) Awarded.

- 2008 Member of the University of Arkansas Chapter of Sigma Xi.
- 2008-2009 Member of American Physical Society (APS).
- 2008-present Member of Material Research Society (MRS).
- 2009 Member of The Institute of Electrical and Electronics Engineers (IEEE)
- 2009-presen Member of Institute of Physics (IOP) Condensed Matter Division