

Dr. Sib Krishna Ghoshal (Ph.D.)

Brief CV

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CONTACT ADDRESS

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Google Scholar

<https://scholar.google.com/citations?user=yFo4AfgAAAAJ&hl=e>

Research Gate

<https://www.researchgate.net/profile/Sib-Krishna-Ghoshal>

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UTMpeople (Faculty of Science)

<https://people.utm.my/sibkrishna/>

EDUCATION

Ph.D. in Physics	Jawaharlal Nehru University , New Delhi, India (Statistical Condensed Matter Physics)	(Oct 1996)
M.Sc. in Physics	Presidency University , Kolkata, India (First Class)	(Jun 1989)
B.Sc. (Hons) in Physics	University of Calcutta , Kolkata, India (with State level Merit Scholarship)	(Jun 1987)
Higher Secondary School (Science)	West Bengal Board of H.S. Education , India (First Class)	(Apr 1983)

RESEARCH EXPERIENCE

Postdoctoral Fellow & Research Associate Advisor Prof. Bulbul Chakraborty at Martin Fisher School of Physics, Brandeis University, Waltham, MA, USA.	(May 1999 – Apr 2000)
Postdoctoral Fellow, Joint Research Associate & Project Scientist Advisor Prof. K. P. Jain & late Prof. Sir Roger Elliott at Laser technology Research Program, Department of Physics, Indian Institute of Technology Delhi (IITD), India & University of Oxford, UK.	(Jul 1996 – Nov 1998)
Senior & Junior Research Fellow Advisor Prof. Sanjay Puri at School of Physical Sciences, Jawaharlal Nehru University, New Delhi, India.	(Jul 1990 – Oct 1996)
Fellow , Theoretical Physics Seminar Circuit, India.	(Jul 1996)
Research Associate , Council for Scientific & Industrial Research, India.	(Jun 1996)

ACADEMIC APPOINTMENTS

- Professor**, University of Technology Malaysia, (Sept 2021 – Current)
Physics Department, Faculty of Science. Johor Bahru, Malaysia
- Associate Professor**, University of Technology Malaysia, (Sept 2010 – Aug 2021)
Physics Department, Faculty of Science. Johor Bahru, Malaysia
- Associate Professor**, Addis Ababa University, (Oct 2004 – Aug 2010)
Physics Department (Materials Science), United Nations
Development Program for the Expansion of Graduate Studies.
Addis Ababa, Ethiopia
- Senior Lecturer & Reader**, Guru Jambheshwar University (Nov 2003 – Oct 2006)
of Science & Technology, Department of Applied Physics.
Hisar, Haryana, India
- Lecturer**, Guru Jambheshwar University (Nov 1998 – Oct 2003)
of Science & Technology, Department of Applied Physics.
Hisar, Haryana, India
- Teaching Assistant**, Jawaharlal Nehru University, (Jul 1990 – Jun 1991)
School of Physical Sciences. New Delhi, India

ACHIEVEMENTS AT A GLANCE

- Google Scholar **h-index: 41**
- Total **Impact Factor: 700**
- Undergraduate Theses Supervised: **55**
- Masters Theses Supervised (Completed): **79**
- PhD Students Supervised (Completed): **26**
- Examiner for Master Theses: **44**
- Assessor for Postgraduate Theses: **50**
- Reviewer of Journals: **17**
- Patent: **1 (Proposed Anticancer Drug)**
- Research Grants Received: **56**
- Invited & Keynote Talks Delivered: **49**
- Awards: **25**
- Administrative, Evaluation Committees: **22**
- Community & Professional Services: **191**
- Google Scholar **i10-index: 125**
- Total **Citations: 5570**
- Undergraduate Students (Ongoing): **21**
- Master Students (Ongoing): **10**
- PhD Students (Ongoing): **14**
- Examiner for PhD Theses: **20**
- Chairman for Postgraduate Theses: **25**
- Editorial Board Member: **3**
- MOU Signed: **2**
- Number of Courses Taught: **44**
- Facilitators: **48**
- Fellowships & Scholarships: **5**
- Professional Memberships Taken: **7**
- Conferences/Workshops Attended: **113**
- Publications: Book (**1**), Edited Books (**7**), Book Chapters (**18**), Edited Books Submitted (**2**), Book Chapters Submitted (**7**), ISI/Scopus Indexed Journals Articles (**350**), Conferences Proceedings (**215** with **120** International), Communicated (**25**)

AREAS OF EXPERTISE

Condensed Matter Physics, Materials Science, Quantum Physics, Nanoscience, Optical Sciences, AMO Physics, Nanophotonics, Quantum Photonics, Computational Materials Science, Nanotechnology, NanoBioMedicine, Plasmonics, Optoelectronics, Laser Technology & Statistical Physics

HONORS AND AWARDS (SELECTED)

Award for Highest Publications (Citra Carisma) in 2020, University of Technology Malaysia	(Sept 2021)
Selected among Top 2% of Scientists in their Field Worldwide , 2019 rankings, compiled by Stanford University , USA	(Dec 2020)
Excellent Service Award in 2019, Faculty of Science, University of Technology Malaysia	(Dec 2020)
Award for Highest Publications (Citra Carisma) in 2019, University of Technology Malaysia	(Aug 2020)
Award of Excellent Service (Publication & Writing) in 2019, Faculty of Science, University of Technology Malaysia	(Aug 2019)
Award for Highest Publications (Citra Carisma) in 2018, University of Technology Malaysia	(Jul 2019)
Award for Highest Citations in Single Paper (Citra Carisma) in 2018, University of Technology Malaysia	(Jul 2019)
Excellent Service Award in 2018, Faculty of Science, University of Technology Malaysia	(Aug 2018)
Award for Excellent Service (Citra Carisma) in 2016, University of Technology Malaysia	(May 2017)
Excellent Service Award in 2015, Faculty of Science, University of Technology Malaysia	(Aug 2015)
Certificate of Appreciation for Contribution (Individual) to 2013 KAI from Materials and Manufacturing Research Alliance	(Aug 2014)
Certificate of Appreciation for Contribution (Individual) for highest cumulative Impact Factor to 2013 KAI from Materials and Manufacturing Research Alliance	(Apr 2014)
Excellent Service Award in 2013, Faculty of Science, University of Technology Malaysia	(2013)
Best Presenter in The 6 th International Symposium on Advances in Science and Technology, SASTech 2012, Kuala Lumpur, Malaysia	(2012)
Highest Number of Publications, Department of Physics, Faculty of Science, University of Technology Malaysia	(2011)
Best Poster Presenter in the Annual Meeting in Physical Sciences, Jawaharlal Nehru University	(1993)

RESEARCH GRANTS (SELECTED) (TOTAL OVER USD 850,000)

1. **University of Technology Malaysia, Fundametal Research Grant**
Synergistic Effects of Neodymium Ions and Silver Nanoparticles Doping on Spectroscopic Traits of Disordered Phosphate Media ([Ongoing, RM 90000](#)). (2020)
2. **Ministry of the Higher Education of Malaysia Fundamental Research Grant Scheme**
Enhancing Structural and Optical Properties of Tellurite Glass Using Core-Shell Bimetallic Nanoparticles for Solid State Laser Substrate, ([Ongoing, RM 80000](#)). (2019)
3. **Ministry of the Higher Education of Malaysia, Fundamental Research Grant Scheme**
Silicon Dioxide Integrated Water-Repellent Tellurite Glass System With Titania Nanoparticles Activation ([Completed, RM 92000](#)). (2018)
4. **University of Technology Malaysia, Research Grant**
Localized Surface Plasmon Resonance Sensor Based on Hetero-Structured Fiber Optic for Ethanol Gas Detection ([Completed, RM 54000](#)). (2018)
5. **Ministry of the Higher Education of Malaysia, Fundamental Research Grant Scheme**
Enhancing Structural and Optical Properties of Tellurite Glass Using Core-Shell Bimetallic Nanoparticles for Solid State Laser Substrate ([Completed, RM 80000](#)). (2019)
6. **Nippon Sheet Glass, Research Grant**, Influence of Gold Nanoparticles Incorporation on Magnetic and Dielectric Properties of Erbium Doped Lead-Tellurite Glass for Biosensing Applications ([Completed, USD 5000](#)). (2018)
7. **University of Technology Malaysia, Research Grant**, Effective Gas Sensing Characteristics of LaBbO₄ Nanostructured Ceramic ([Completed, RM 50000](#)). (2018)
8. **University of Technology Malaysia, Research Grant**
Removal of Heavy Metals via Radiation Induced Polymerized Grafting Assisted Synthesis of Polytetrafluoroethylene Membrane ([Completed, RM 50000](#)). (2018)
9. **Ministry of the Higher Education of Malaysia, Fundamental Research Grant Scheme**
Polycrystalline Seed-Mediated Growth Method For Neodymium-Doped Lithium-Niobium-Borate Ferroelectric Single Crystal With Modified Properties ([Completed, RM 110000](#)). (2016)
10. **Research Acculturation Grant Scheme**, Tailoring the Spectroscopic Properties of Erbium Doped Tellurite Glass via Controlled Size and Shape of Gold Nanoparticles for SERS Application ([Completed, RM 90000](#)). (2015)
11. **Ministry of the Higher Education of Malaysia, Fundamental Research Grant Scheme**
Magneto-Optical Characteristic of Nd Doped Sodium-Magnesium-Tellurite Glass Embedded with NiO Nanoparticle ([Completed, RM 88000](#)). (2015)
12. **Ministry of the Higher Education of Malaysia, Prototype Research Grant Scheme**
Developing Efficient Glass Based Solid State Lasers ([Completed, RM 160000](#)). (2015)
13. **University of Technology Malaysia, Research Grant**
Research and Development of Self Aligning Nano Technology For Electronics (SANTE) For Applications In LED Displays, Touch Technology, Automotive Heaters and Plasmonic Waveguides ([Completed,, RM 30000](#)). (2015)
14. **Ministry of the Higher Education of Malaysia, Fundamental Research Grant Scheme**
Titanium Nanoparticles Stimulated Surface Plasmon Mediated Optical Enhancement in Erbium Doped Tellurite Glasses ([Completed, RM 85000](#)). (2014)
15. **Ministry of the Higher Education of Malaysia, Fundamental Research Grant Scheme**
Influences of Gold Nanoparticles on Structural and Optical Properties of Erbium/Samarium Co-doped Tellurite Glass ([Completed, RM 110000](#)). (2014)

16. **University of Technology Malaysia, Research Grant**
Titanium Nanoparticles Assisted Modification in Structural and Optical Properties of Rare Earth Doped Tellurite Glass ([Completed, RM 100000](#)). (2014)
17. **University of Technology Malaysia, Research Grant**
Optical Enhancement in Rare Earth Doped Tellurite Glass Containing Silver Nanoparticles ([Completed, RM 100000](#)). (2014)
18. **University of Technology Malaysia, Research Grant**
the Physical and Optical Characteristics of Erbium Doped Magnesium Antimony Phosphate Glass Embedded with Silver Nanoparticles ([Completed, RM 100000](#)). (2014)
19. **University of Technology Malaysia, Research Grant**
Efficiency and Durability Enhancement of Silicon Nanostructured Solar Cell by Radiation Grafting ([Completed](#)). (2014)
20. **University of Technology Malaysia, Research Grant**, Doped Silica Optical Fiber as Thermoluminescence Radiation Dosimeters ([Completed, RM 100000](#)). (2014)
21. **Ministry of the Higher Education of Malaysia Fundamental Research Grant Scheme**, Spectroscopic Enhancement of Er³⁺: Nanoparticles Co-doped Nanoglass ([Completed, RM 120000](#)). (2013)
22. **Ministry of the Higher Education of Malaysia, FRGS**, Optical Effects in Silicon Nanostructures for Efficient Solar Cells ([Completed, RM 88000](#)). (2013)
23. **Ministry of the Higher Education of Malaysia, Fundamental Research Grant Scheme** Characterization and Fundamental Properties of Radiosensitive Borate Glass doped with Nano Gold Particles for Radiotherapeutic Measurement ([Completed, RM 90000](#)). (2013)
24. **Addis Ababa University, Research and Graduate Funding**
Optical Effects in Silicon Nanostructures ([Completed, USD 10000](#)). (2007)
25. **UGC Major Research Project**, Monte Carlo Simulation to Study Structural Transitions in Cu-Au Alloys, BCC iron & YBCO ([Completed, USD 7000](#)). (2004)
26. **DST-FIST Project**, Setting up Simulation and Nonlinear Optics Laboratory ([Completed, USD 35000](#)). (2003)
27. **DST Major Research Project**, Monte Carlo Study in YBCO and Copper Gold Alloy ([Completed, USD 10000](#)). (2002)

LIST OF PUBLICATIONS (SELECTED)

Book & Book Chapters

1. Book Chapter 27 "*Nanophotonics for 21st Century in Optoelectronics*" / Book 2, **S. K. Ghoshal**, M.R. Sahar, M. S. Rohani & S. Sharma; INTECH Open Access Publisher, www.intechweb.org, pp. 575-630, (2011), ISBN 978-953-307-576-1.
2. **Book "*Magnificent Popular Sciences*"**, **Sib Krishna Ghoshal** & Ganesen Krishnan (Editors). UTM Press, Malaysia (2021), UTM Press, Malaysia (2021), ISBN 978-983-52-1794-4.
3. Book Chapter 1 "*Introduction to Magnificent Popular Sciences*" in edited Book "*Magnificent Popular Sciences*" by **Sib Krishna Ghoshal** & Ganesen Krishnan. **S. K. Ghoshal** & Ganesen Krishnan, pp. 1, UTM Press, Malaysia (2021), ISBN 978-983-52-1794-4.

4. Book Chapter 2 "*An Endless Odyssey towards Greener Earth*" in edited Book "Magnificent Popular Sciences" by **Sib Krishna Ghoshal** & Ganesen Krishnan. **S. K. Ghoshal**, G. Krishnan, H. Nuhu & I. M. Danmallam, pp. 33, UTM Press, Malaysia (2021), ISBN 978-983-52-1794-4.
 5. Book Chapter 8 "*Wonders of Rare Earths*" in edited Book "Magnificent Popular Sciences" by **Sib Krishna Ghoshal** & Ganesen Krishnan. **S. K. Ghoshal** & Areej S. Alqarni, pp. 187, UTM Press, Malaysia (2021), ISBN 978-983-52-1794-4.
 6. Book Chapter on "*Coronavirus Pandemic: A Review of a New-fangled Risk to Public Health*". Sunita Sharma, Amit Kumar, Lokesh Chandra Gupta & **S. K. Ghoshal**. Springer Book Entitled Intelligent Healthcare. Editors: Bhatia S., Dubey A.K., Chhikara R., Chaudhary P., Kumar A. EAI/Springer Innovations in Communication and Computing. Springer, Cham. (Online, 2021).
 7. Edited Book on Rare Earths Doped Inorganic Functional Glasses, **S. K. Ghoshal** & Ezza S. Sazali. UTM Press, Malaysia (2021), ISBN 978-983-52-1794-6.
 8. Edited Book on Nanoparticles Activated Rare Earth Doped Glass, **S.K. Ghoshal** & Ramli Arifin. UTM Press, Malaysia (2017), ISBN 978-983-52-1432-5.
 9. Edited Book on "*Recent Progress in Plasmonic Nanoglass*", **S.K. Ghoshal** & Md. Rahim Sahar. UTM Press, Malaysia (2016), ISBN 978-983-52-1198-0.
 10. Edited Book on "*Frontiers of Rare Earth Doped Tellurite Glass*", **S.K. Ghoshal** & Asmahani Awang. UTM Press, Malaysia (2015), ISBN 978-983-52-1181-2.
 11. Book Chapter on "*Plasmonics: A Voyage towards Nanoscale Optics in Nonlinear Optics and Synchrotron Radiations*" / Book Noriah Bindin (Editor), **S. K. Ghoshal**, M. R. Sahar & M. S. Rohani, pp. 89-124, UTM Press, Malaysia (2014), ISBN 978-983-52-0938-3.
 12. Book "*Digital Electronics*" by **S. K. Ghoshal**, Devendra Mohan and Dharminder Kumar, Galgotia Book Source Pvt. Ltd., New Delhi, India (2002), ISBN: EBK0006241.
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Published in Journals

1. "*Prominent Absorption and Luminescence Characteristics of Novel Silver-Cinnamon Core-Shell Nanoparticles Prepared in Ethanol using PLAL Method*". **Ali Aqeel Salim**, **S. K. Ghoshal** & **Hazri Bakhtiar**. Radiation Physics and Chemistry, **190**, 109794 (2022).
2. "*Plasmonic Effect of Bimetallic TiO₂/Al₂O₃ Nanoparticles in Tellurite Glass for Surface-Enhanced Raman Scattering Applications*." Ixora Ferodolin, Asmahani Awang, **S. K. Ghoshal**, Alireza Samavati, Chee Fuei Pien & Jedol Dayou. Journal of Luminescence, **241**, 118488 (2022).
3. "*Naturally Occurring Radioactive Materials in Bracelets and Necklaces: Radiological Risk Evaluation*." Halmat Jalal Hassan, Suhairul Hashim 1, Noor Zati Hani Abu Hanifah, **Sib Krishna Ghoshal**, Mohamad Syazwan Mohd Sanusi, Fariza Hanim Binti Suhailin, Muhammad Fahmi Rizal Abdul Hadi, Rozman Mohd Tahar & David Andrew Bradley. Evaluation. Int. J. Environ. Res. Public Health, **18**, 11170 (2021).
4. "*Spectrographic Analysis of Zinc-sulfate-magnesium-phosphate Glass Containing Neodymium Ions: Impact of Silver-gold Nanoparticles Plasmonic Coupling*." N. N. Yusof, S. Hashim, **S. K. Ghoshal**, M. N. Azlan, M. H. M. Zaid, Imed Boukhris & Imen Kebaili. Journal of Luminescence **242**, 118571 (2022).
5. "*Correlation of Mechanical Properties and Crystal Field Parameters of Europium Doped Magnesium Zinc Sulphophosphate Glasses*." Ibrahim Mohammed Danmallam, **S. K. Ghoshal**, R. Ariffin, Ibrahim Bulus & Y.A. Yamusa. Indian Journal of Physics, **95(11)**, 2453 (2021).
6. "*Effects of Ultraviolet Radiation Exposure on Optical Nonlinearity and Switching Traits of SnO₂ Thin Films Deposited by Thermal Evaporation*". Sandeep Yadav, Sonia Kumari, **S. K.**

- Ghoshal**, Raj Kumar, S. K. Chaudhary & Devendra Mohan. *Optics and Laser Technology*, **133**, 106575 (2021).
7. *"Effects of Bimetallic Nanoparticles Ag and TiO₂ Embedment on Tellurite Zinc-Silicate Glass: Self-Cleaning Characteristics"*. S. N. M Nazhirah, **S. K. Ghoshal**, R. Arifin & K.Hamzah. *Surfaces and Interfaces*, **25**, 101236 (2021).
 8. *"Cumulative Lifetime Attributed Risks for Patients Subjected to Contrast Enhanced Chest CT Examinations"*. Entesar Zawam Dalah, A. Obaideen, Sabaa Anam, Malaz Khalid, T. Nadishani, Nafissa, Hiba, S. Hashim & **S. K. Ghoshal**. *Radiation Physics and Chemistry*, **189**, 109710 (2021).
 9. *"Structural, chemical and magnetic features of gold nanoshapes integrated-Er₂O₃-doped tellurite glass system prepared by a conventional melt-quenching technique"*. A. A. Salim, Z.A.S. Mahraz, P. Anigrahawati, N.A.M. Jan, **S. K. Ghoshal**, M.R. Sahar, F.M. Noor, K.A. Samah, S.N.S. Yaacob, R. Zainal, S.K.Md. Zain, M. Yusop, M. S. Aziz, S.S. Alias, N.H. Ahmad, H. Nurhafizah, A.N. Harun, H. Bakhtiar & E. S. Sazali. *Applied Physics A*, **127**, 673 (2021).
 10. *"Absorption, Fluorescence and Sensing Quality of Rose Bengal Dye-Encapsulated Cinnamon Nanoparticles"*. Ali Aqeel Alshammari, **S. K. Ghoshal**, M. S. Shamsudin, Muhammad Izz Rosli, M. S. Aziz, S.W. Harun, G. Krishnan & H. Bakhtiar. *Journal: Sensors and Actuators: A. Physical*, **332(1)**, 113055 (2021).
 11. *"Modified structures, optical and photovoltaic characteristics of low energy ions beam irradiated TiO₂/TiO₂-Graphene thin films as electron transport layer in perovskite solar cell"*. Deepika Gaur, Sunita Sharma & **S. K. Ghoshal**. *Materialstoday: Proceedings*, **43(6)**, 3826 (2021).
 12. *"Tailored Morphology, Absorption and Bactericidal Traits of Cinnamon Nanocrystallites Made via PLAL Method: Role of Altering Laser Fluence and Solvent"*. **Ali Aqeel Salim**, Sib Krishna **Ghoshal** & **Hazri Bakhtiar**. *Optik-International Journal for Light and Electron Optics*, **226**, 165879 (2021).
 13. *Nanosecond pulse laser-induced fabrication of gold and silver-integrated cinnamon shell structure: tunable fluorescence dynamics and morphology*. **Ali Aqeel Salim**, **Hazri Bakhtiar**, G. Krishnan & S. K. **Ghoshal**. *Optics and Laser Technology*, **138**, 106834 (2021).
 14. *"Growth mechanism and optical characteristics of Nd:YAG laser ablated amorphous cinnamon nanoparticles produced in ethanol: Influence of accumulative pulse irradiation time variation"*. **Ali Aqeel Salim**, S. K. **Ghoshal** & **Hazri Bakhtiar**. *Photonics and Nanostructures - Fundamentals and Applications*, **43**, 100889 (2021).
 15. *"Incorporating 3D Metal Printing with Artificial Intelligence in Meeting Aerospace Demands"*. Aneez Syuhada, M. S. Shamsudin, M. F. Omar, **S. K. Ghoshal**, S. W. Harun & M. S. Aziz. *Journal of Physics: Conference Series*, IOP doi:10.1088/1742-6596/1892/1/012015, **1892**, 012015 (2021).
 16. *"Microbe Speed Breaker Nano cuts Nano: Advancing nanotechnology"*. **S. K. Ghoshal** & E. S. Sazali. *Nexus Journal*, [research.utm.my/#magazine; https://online.fliphtml5.com/niewq/odma/#p=22](https://online.fliphtml5.com/niewq/odma/#p=22), **3(3)**, 20 (2020).
 17. *Tailored Structures and Dielectric Traits of Holmium Ion-doped Zinc-sulpho-boro-phosphate Glass Ceramics*. Areej S. Alqarni, R. Hussin, S. N. Alamri & **S. K. Ghoshal**. *Ceramics International*, **46(3)**, 3282 (2020).
 18. *"On the Lasing Potency of Samarium Activated BaSO₄-TeO₂-B₂O₃ Glass Host: Judd-Ofelt Analysis"*. S. Hashim, **S. K. Ghoshal** & I. Abdullahi. *Indian Journal of Physics*, **94(11)**, 1811 (2020).
 19. *"Tailored Fluorescence Traits of Pulse Laser Ablated Gold-Cinnamon Nanocomposites"*. **Ali Aqeel Salim**, Sib Krishna **Ghoshal**, Ganesan Krishnan & **Hazri Bakhtiar**. *Materials Letters*, **264**, 127335 (2020).
 20. *"Spectral features of two-particle Schrodinger operator on d-dimensiional lattice"*. Mukhiddin Muninov & **S. K. Ghoshal**. *Complex Analysis and Operator Theory*, **14**, 11 (2020).

21. Dose Assessment of 4- and 16-slice Multi-Detector Computed Tomography (MDCT) Scanners. Ratna Suffhiyanni, Suhairul Hashim, **Sib Krishna Ghoshal** & Nurul Diyana Shariff. *Radiation Physics and Chemistry*, **168**, 108445 (2020).
22. "On the Taught New Tricks of Enzymes Immobilization: An All-inclusive Overview". Roswanira Abdul Wahab, Nursyafiqah Elias & **S. K. Ghoshal**. *Reactive and Functional Polymers*, **152**, 104613 (2020).
23. Red laser potential of europium doped boro-tellurite-dolomite glass host: A basic insight on spectroscopic traits. Ibrahim Bulus, R. Hussin, **S. K. Ghoshal**, Abd Rahman Tamuri, Ibrahim Mohammed Danmallam & Yamusa Abdullahi Yamusa. *Journal of Noncrystalline Solids*, **534**, 119949 (2020).
24. "Bio-silica incorporated barium ferrite composites: Evaluation of structure, morphology, magnetic and microwave absorption traits". W. Widanarto, A.I. Ekaputra, M. Effendi, **Sib Krishna Ghoshal**, Candra Kurniawan, Erfan Handoko & Mudrik Alaydrus. *Current Applied Physics*, **20**, 638 (2020).
25. Neodymium ions activated barium ferrite composites for microwave X-band absorber applications: synthesis and characterisations. Wahyu Widanarto, Ananda Iqbal Ekaputra, Mukhtar Effendi, **Sib Krishna Ghoshal**, Candra Kurniawan, Erfan Handoko & Mudrik Alaydrus. *Composites Communications*, **19**, 51 (2020).
26. Synergistic Effect of PEO Layer on TiO₂/TiO₂-Graphene based Perovskite Solar Cell. Deepika Gaur, Sunita Sharma, **S. K. Ghoshal**, Pooja Seth, Shruti Aggarwal & Neha Aggarwal. *Asian Journal of Chemistry*, **32(12)**, 3219 (2020).
27. "Pulse laser ablated growth of Au-Ag nanocolloids: Basic insight on physiochemical attributes". A. A. Salim, **S. K. Ghoshal**, Hazri Bakhtiar, G. Krishnan, M. Safwan Aziz & H. H. J. Sapngi. *IOP Journal of Physics: Conference Series*. doi:10.1088/1742-6596/1484/1/01, **1484**, 012011 (2020).
28. "Electronic and Optical Correlation Effects in Bulk Gold: Role of Spin-Orbit Coupling" H. A. Alluhaybi, **S. K. Ghoshal**, B. O. Alsobhi & W. N. Wan Shamsuri, *Computational Condensed Matter*, **18**, e00360 (2019).
29. "Detection Techniques for Adulterants in Honey: Challenges and Recent Trends". Kuan Wei Se, Roswanira Abdul Wahab, Syarifah Nuratiqah Syed Yaacob & **Sib Krishna Ghoshal**. *Journal of Food Composition and Analysis*, **80**, 16 (2019).
30. Synthesis and Characterisation of Dysprosium-doped Borate Glasses for Use in Radiation Dosimeters. R. S. Omar, S. Hashim & **S. K. Ghoshal**. *Vietnam Journal of Science, Technology and Engineering (Physical Sciences)*, Doi: 10.31276/VJSTE., **61(3)**, 3 (2019).
31. "Spectral attributes of self-adjoint Fredholm operators in Hilbert space: A rudimentary insight". Mukhiddin Muninov & **S. K. Ghoshal**. *Complex Analysis and Operator Theory*, <https://doi.org/10.1007/s11785-018-0865-7>, Online, **13(3)**, 1313 (2019).
32. Electronic and Optical Correlation Effects in Bulk Gold: Role of Spin-Orbit Coupling H. A. Alluhaybi, **S. K. Ghoshal**, B. O. Alsobhi & W. N. Wan Shamsuri, *Computational Condensed Matter*, **16**, e00360 (2018).
33. Hydrophobic zinc-tellurite glass surface as self-cleaning vehicle: Interplay amid SiO₂ and TeO₂. Siti Nur Nazhirah Mazlan, **Sib Krishna Ghoshal** & Ramli Arifin. *Malaysian Journal of Fundamental and Applied Sciences Special Issue on Natural Sciences and Mathematics*, ISSN: 2289-599X, 492 (2018).
34. On the optical properties of Er³⁺ ions activated magnesium zinc sulfophosphate glass: role of silver nanoparticles sensitization. F. Ahmadi, R. Hussin & **S. K. Ghoshal**. *Journal of Luminescence*, **204**, 95 (2018).
35. Gold nanoparticles sensitized samarium doped tellurite glass: assessment of structural and thermal stability. Y. Tanko, M. R. Sahar, **S. K. Ghoshal** & A. Shuaibu. *Advanced Science Letters*, **24 (6)**, 4158 (2018).
36. "Effect of Metakaolin Replaced Granulated Blast Furnace Slag on Fresh and Early Strength Properties of Geopolymer Mortar". Ghasan F. Huseien, Jahangir Mirza, Mohammad Ismail,

- S. K. Ghoshal** & Mohd Azreen Mohd Ariffin. *Ain Shams Engineering Journal*, **9**, 1557 (2018).
37. *"Environmental-amiable pulsed laser ablation in liquid mediated growth of silver/cinammon nanocomposites: absorption attributes"*. Ali Aqeel Salim, **Sib Krishna Ghoshal**, Noriah Bidin & Hazri Bakhtiar. *Journal of Advanced Research in Materials Science*, **43(1)**, 28 (2018).
 38. *Antibacterial activity of decahedral cinnamon nanoparticles prepared in honey using PLAL technique*. A. A Salim, H. Bakhtiar, N. Bidin & **S. K. Ghoshal**. *Materials Letters*, **232**, 183 (2018).
 39. *Liquid media regulated growth of cinnamon nanoparticles: Absorption and emission traits*. Ali Aqeel Salim, **Sib Krishna Ghoshal**, Lau Pik Suan, Noriah Bidin, Khaidzir Bin Hamzah, Maisarah Duralim, Noriah Bidin & Hazri Bakhtiar. *Malaysian Journal of Fundamental and Applied Sciences Special Issue on Natural Sciences and Mathematics*, ISSN: 2289-599X, 447 (2018).
 40. *"A Simple Approach for Rapid Detection and Quantification of Adulterants in Stingless Bees (Heterotrigena itama) Honey"*. Kuan Wei Se, **Sib Krishna Ghoshal**, Roswanira Abdul Wahab, Raja Kamarulzaman Raja Ibrahim & Mohd. Nizam Lani. *Food Research International*, **105**, 453 (2018).
 41. *General Radiographic Attributes of Optically Stimulated Luminescence Dosimeters: A Basic Insight* Y. Musa, S. Hashim, **S. K. Ghoshal**, D.A. Bradley, N.E. Ahmad, M.K.A. Karim, A. Hashim & A.B.A Kadir. *Radiation Physics and Chemistry*, **147**, 1 (2018).
 42. *Near-infrared up-conversion emission from erbium ions doped amorphous tellurite media: Judd-Ofelt evaluation*. Zahra Ashur Said Mahraz, M. Rahim Sahar & **S. K. Ghoshal**. *Journal of Alloys and Compounds*, **740**, 617 (2018).
 43. *"Dye Sensitized Solar Cells: From Genesis to Recent Drifts"*. Sunita Sharma, Bulkesh, **S. K. Ghoshal** & Devendra Mohan. *Renewable and Sustainable Energy Reviews*, **70**, 529 (2017).
 44. *"Geopolymer Mortars as Sustainable Repair Material: A Comprehensive Review"*. Ghasan Fahim Huseien, Mohammad Ismail, Jahangir Mirza, **S. K. Ghoshal**, Mohd Azreen Mohd Ariffin & Ahmed Abdulameer Hussein. *Renewable and Sustainable Energy Reviews*, **80**, 54 (2017).
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 31. *Nanophotonics for 21st century and beyond*. **S. K. Ghoshal**, H.S. Tewari, R.K. Pandey, M.R. Sahar & M.S. Rohani. In the Proceedings of National Seminar on "Current Trends on Nanoscience and Nanotechnology, June 25-26, page 22, Bhilai, India (2011).
 32. *Excitonic Contribution on Light Emitting Properties of Nanosilicon*. **S. K. Ghoshal**, M. R. Sahar & M. S. Rohani, In the Proceedings of **International** Science Conference INSC 2011, 4-5 July, page 36, Selangor, Malaysia (2011).
 33. *"A model for thermoluminescence from silicon quantum dots"*, Nebiyu Gemechu Debelo & **S.K. Ghoshal**. In the Proceedings of Collaborative Conference on Interacting nanostructures (CCIN09), Institute of Nanoscale Science and Engineering, San Diego, California (November 9-13, 2009).
 34. *"Entanglement in the short time response of semiconductor nanostructures"*, Mekonnen Abebe & **S.K. Ghoshal**. In the proceedings of Collaborative Conference on Interacting Nanostructures (CCIN09), Institute of Nanoscale Science and Engineering, San Diego, California (November 9-13, 2009).
 35. *"Investigation of excitons effect on photoluminescence spectra of silicon quantum dots"*, Tesfaye Shiferaw & **S.K. Ghoshal**. In the proceedings of Collaborative Conference on Interacting

- Nanostructures (CCIN09), Institute of Nanoscale Science and Engineering, San Diego, California (November 9-13, 2009).
36. *"Electroluminescence from silicon and germanium nanostructures"*, Getnet Melese & **S.K. Ghoshal**. In the proceedings of Collaborative Conference on Interacting Nanostructures (CCIN09), Institute of Nanoscale Science and Engineering, San Diego, California (November 9-13, 2009).
 37. *"A Gaussian model to investigate the photoluminescence spectra of nanoporous silicon quantum wires"*, Zebib Yenus Nuru & **S.K. Ghoshal**. In the proceedings of Collaborative Conference on Interacting Nanostructures (CCIN09), Institute of Nanoscale Science and Engineering, San Diego, California (November 9-13, 2009).
 38. *"Study of radiative lifetime and internal quantum efficiency of small-scale silicon nanostructure"*, Sioma Debela & **S.K. Ghoshal**. In the proceedings of Collaborative Conference on Interacting Nanostructures (CCIN09), Institute of Nanoscale Science and Engineering, San Diego, California (November 9-13, 2009).
 39. *"A 3D Model to Describe Structural Transition in $YBa_2Cu_3O_{7-x}$: Temperature Dependence Elastic Moduli"*, Gashawtena Bayou & **S.K. Ghoshal**. The proceedings of ICMAT & IUMRS-ICA 2009 (Singapore), page ICMATA01629.
 40. *Third order nonlinear properties in sulforhodamineB doped silica and polymeric matrices*, Sunita Sharma, Devendra Mohan & **S.K. Ghoshal**, Proceedings of National conference on photonics and materials science (NCPMS-2008) Oct. 24-25, India, Edited by N. Kishore et al., Page no. 192-194.
 41. *"A generic model for coherent optical transport in nanostructure"*, Mekonnen Abebe & **S.K. Ghoshal**, PFAM-08, India. Processing and Fabrication of Advanced Materials-XVII, Vol. I, I.K. International Publishing House, New Delhi, Editors: N. Bhatnagar & T.S. Srivatsan, AC-036, 311, (2008).
 42. *Effects of crystallites size and surface passivation on optical behaviour of nanosilicon: A model calculation*, **S.K. Ghoshal**, Ashagrie Mekuriaw, Balew Adane, Sunita Sharma & Devendra Mohan PFAM-08, India, Processing and Fabrication of Advanced Materials-XVII, Vol. I, I.K. International Publishing House, New Delhi, Editors: N. Bhatnagar & T.S. Srivatsan, AC-037 (2008).
 43. *Temperature Dependent Optical Properties of Silicon Nanoclusters: Theory and Simulation*, **Sib Krishna Ghoshal**, Deginet Tebekew, Mekonnen Abebe, Sunita Sharma & Devendra Mohan PFAM-08, India, Processing and Fabrication of Advanced Materials-XVII, Vol. I, I.K. International Publishing House, New Delhi, Editors: N. Bhatnagar & T.S. Srivatsan, AC-045, (2008).
 44. *Oscillator Strength of Silicon Nanoclusters: Influence of Surface Passivation*. **Sib Krishna Ghoshal**, Hagos Gebrehiwet, Sunita Sharma & Wondwosen Tilahun, Pages: 119-127 (2007) in the Edited Book on Mirowaves and Optoelectronics, Publishers: Anamaya publishers, New Delhi, Editors: M.D. Shirsat, P.W. Khirade, S.S. Patil, V.V. Nawarkhele, G.S. Raju, P.B. Patil and S.C. Mehrotra.
 45. *Microprocessor based assembly for physical and chemical vapour deposition application*. Mekonnen Abebe & **S. K. Ghoshal**, Fourth International Conference of the African Materials Research Society, Tanzania, in Proceedings of AMRS-07, Dec.10-14, page O12, Tanzania (2007).
 46. *The nonequilibrium Green's function formalism: optical and transport phenomena*. Mekonnen Abebe & **S. K. Ghoshal**, Fourth International Conference of the African Materials Research Society, Tanzania, in Proceedings of AMRS-07, Dec.10-14, page O41, Tanzania (2007).
 47. *Influence of Surface Passivation on the Band Gap of Silicon Nanoclusters*, **Sib Krishna Ghoshal**, ICMO-2007, 15-19 Dec., page 39, Aurangabad (2007).
 48. *Influence of surface states on the energy gap of silicon nanostructures: The role of hydrogen and oxygen*, **S. K. Ghoshal** & Ermias Atnafu Abebe, PFAM-07, Singapore, page 47 (2007).

49. *Study of the microscopic mechanism of pulse distortion and effect of nonlinearity on propagation at 1550nm through silica core fiber.* Sunita Sharma, **S.K. Ghoshal** & Devendra Mohan, 2nd **International** Conference on Current Developments in Atomic, Molecular and Optical Physics with Applications (CDAMOP-06), Delhi, 21-23 March (2006).
50. *The Expanding Role of LASER from Entertainment to Surgery,* Sunita Sharma, Devendra Mohan and **S.K. Ghoshal**, The proceedings of National Seminar on Recent Advances in Bio-Sciences (BIOMEET-06) Feb.10-11, 2006, Sonapat, India.
51. *"Simulation Study of Cu-Au Alloy at the Onset of Structural Phase Transition".* Umesh Gupta, **S. K. Ghoshal** & Devendra Mohan, Proceedings of the Advanced Condensed Matter Physics – 2005 held at TIET, Patiala, Feb 11-12, (2005).
52. *A Microscopic Approach to Study Nonlinear Response in Silica Core Optical Fiber.* Sunita Sharma, **S.K. Ghoshal** & Devendra Mohan, Proceedings of the Fourth DAE-BRNS National Laser Symposium (BARC), Mumbai, Jan 10-13 (2005).
53. *Monte Carlo Simulation to Study Stress Driven Transition in Cu-Au Alloy.* Umesh Gupta & **S.K. Ghoshal**, Abstract Book of 22nd **International** Conference on Statistical Physics of IUPAP, Bangalore (INDIA), 184 (2004).
54. *"Optical and Electron Correlation Effects in Silicon Quantum Dots".* **S.K. Ghoshal**, K.P. Jain & S.R. Elliott, Proceedings of **IUMRS**, ICMAT-ICA 2003, Singapore, 664 (2003).
55. *Origin of Nonlinear Optical Susceptibilities and Electrostriction in Silica-Core Fiber: A Model Calculation.* **S.K. Ghoshal**, D. Kumar & Dharminder Kumar, Proceedings of **IUMRS**, ICMAT-ICA 2003, Singapore, 486.
56. *Structural Phase Transition in Copper Gold Alloy: A Monte Carlo Study.* **S.K. Ghoshal**, Karan Singh Gill & Umesh Gupta, Proceedings of 91st National Science Congress (2004).
57. *Photoluminescence in Silicon Quantum Dots: The Role of Hydrogen and Oxygen.* **S.K. Ghoshal**, Proceedings of 91st National Science Congress, 28 (2004).
58. *Study of Mechanical Properties of MEMS Materials.* **S.K. Ghoshal** & Devendra Mohan, Proceedings of National Conference on Optoelectronics and MEMS Technologies (April 16-17, CSIO, Chandigarh) 2004.
59. *"Biosensors for Environmental and Other Monitoring".* **S.K. Ghoshal**, Bulletin of National Seminar on Emerging Environmental Issues and Technological Challenges, 1, 17 (2003).
60. *"Earthquake and its Havoc: A Mystery for Environmentalists".* Sunita Rani & **S.K. Ghoshal**, Bulletin of National Seminar on Emerging Environmental Issues and Technological Challenges, 1, 143 (2003).
61. *"Role of Defects in Science and Technology".* **S.K. Ghoshal**, Compendium on Computer Applications, 1, 284 (2003).
62. *"Monte Carlo Simulation".* **S.K. Ghoshal**, Compendium on Computer Applications, 1, 305 (2003).
63. *Metropolis Monte Carlo Simulation of Simple Liquids and Magnetic Materials.* **S.K. Ghoshal**, Dharminder Kumar & Umesh Gupta, Compendium on Computer Applications, 1, 312 (2003).
64. *"Computer Simulation, Modeling and Molecular Drug Architecture: Monte Carlo & Molecular Dynamics Method".* **S.K. Ghoshal**, Compendium on Recent Advances in Pharmaceutical Technology and Computer Applications, 2, 221 (2003).
65. *"Quantum Computing: A future Breakthrough in Information Technology".* **S. K. Ghoshal** & D. Mohan, Symposium on Optoelectronics (January 24-27), Jodhpur, India, 27 (2002).
66. *"Electron Correlation Effects in Silicon Quantum Dots".* **S. K. Ghoshal** & K.P. Jain, Proceedings of National Symposium on Frontiers in Condensed Matter Physics (March 22-23) Hisar, India, 18 (2002).
67. *"Monte-Carlo Study of Elastic Effects in Disordered Cu-Au Alloy".* **S.K. Ghoshal**, D.L. Olmsted & B. Chakraborty, Proceedings of National Symposium on Frontiers in Condensed Matter Physics (March 22-23), Hisar, India, 27 (2002).

68. *“Modulus Softening in Y-Ba-Cu-O”*. S.K. Ghoshal & S. Dattagupta, Proceedings of National Symposium on Frontiers in Condensed Matter Physics (March 22-23), Hisar, India, 38 (2002).
69. *Optical Effects in Semiconductor Nanostructures*. S.K. Ghoshal, D. Kumar & D. Mohan, Proceedings of the Fifth Conference of the **International** Academy of Physical Sciences (April 7-9, Bundelkhand University, Jhansi), 38 (2002).
70. *“Study of the Nonlinear Optical Susceptibilities of Optical Fiber Materials”*. S.K. Ghoshal, D. Kumar & D. Mohan, Proceedings of the National Seminar on Emerging Dimensions in Information Technology (August 10-11, Hisar, India) 24 (2002).
71. *“Kinetics of Structural Phase Transition”*. S. Dattagupta & S.K. Ghoshal, Proceedings of the **International** Conference on Advances in Physical Metallurgy, BARC, Bombay, **12**, 162, (1994).

WORKSHOPS, CONFERENCES, SYMPOSIA ATTENDED (NOTABLE)

1. International Conference on *“Materials Research in Science and Engineering”* (KMRSE'21) (Virtual Event), Kumaraguru College of Technology, Coimbatore, India (July 23-25, 2021).
2. The Webinar on *“Advances in 4D Printing Materials and Technology”* between NCU (Delhi), GJUST Hisar (India) and AOMRG Organized by Physics Department (AOMRG), FS, UTM (August 5, 2021).
3. International e-Conference on *“Recent Advances in Materials Science”* (ICRAMS), Government PG College Maldevta, Raipur, Dehradun & Department of Physics, H.N.B. Garhwal Central University, Srinagar, India (May 15-16, 2021).
4. Webinar on *“Glass for World Sustainability”* among AOMRG (Malaysia), UNS and UNINES (Indonesia), Organized by Physics Department (AOMRG), FS, UTM and MASS (August 16, 2021).
5. Webinar on *“Optical Materials for 21st Century”* Organized by AOMRG of Physics Department between GJUS&T (Hisar, India) and AOMRG, FS (UTM) on the Potential (September 21, 2020).
6. Webinar on *“Antimicrobial Adaptable Nanomaterials”* Organized by AOMRG of Physics Department between NCU (Delhi) and AOMRG, Physics Department (AOMRG, FS, UTM) on the Potential Anti-Viral and Anti-Bacterial Nanomaterials Applications Including Covid Pandemic (Sept, 2020).
7. International Conference on *“Physics and Chemistry of Materials in Novel Engineering Applications”*, PCMNEA 2020, Kumaraguru College of Technology, Coimbatore, India (February, 2020).
8. International Conference on *Advances in Basic Sciences (ICABS-19)*, Bahal, Haryana, India (February, 2019).
9. *6th International Conference on Applied and Engineering Physics (iCEAP-19)*, Hanoi, Thai Nguyen, Vietnam (October, 2019).
10. *6th Academic Conference on Natural Sciences for Young Scientists, Master and PhD Students from Asean Countries (CASEAN-19)*, Hanoi, Thai Nguyen, Vietnam (October, 2019).
11. *International Laser Technology & Optics Symposium 2019 (iLATOS-19)*, Le Grandeur Palm Resort, Johor (September, 2019).
12. *29th Regional Conference on Solid State Science and Technology (RCSST 2016)*, KSL, Johor Bahru, Malaysia (Dec, 2016).
13. *5th International Conference on Solid State Science and Technology (ICSSST 2015)*, Langkawi, Malaysia (Dec, 2015).
14. Workshop: Advanced Optical Materials Research Presentation, Physics Dpt., UTM (Nov, 2015).

15. 28th Regional Conference on Solid State Science & Technology (RCSST28, 2014), Pahang, Malaysia (Nov, 2014).
16. 27th Regional Conference on Solid State Science & Technology (RCSST27, 2013), Sabah, Malaysia (December, 2013).
17. The 4th International Conference on Solid State Science and Technology, ICSST 2012, Melaka, Malaysia (Dec, 2012).
18. The 6th International Symposium on Advances in Science and Technology, SASTech 2012, Kuala Lumpur, Malaysia (March, 2012).
19. The 26th Regional Conference of Solid State Science and Technology, RCSST 2011, Royale Bintang, Seremban, Negeri Sembilan, Solid State Science & Technology: Wealth Through Innovation (November, 2011).
20. National Science Postgraduate Conference 2011 (NSPC 2011), organised by Faculty of Science and PGSS, UTM, Malaysia (November, 2011).
21. Stakeholders Consultative Workshop on a Proposed PhD Curriculum in Environmental Science, Faculty of Science, Ethiopia (May, 2010).
22. International Conference on Ph.D. Program, Ethiopia (June, 2008).
23. Workshop on Material Science Program, Ethiopia, (July, 2006).
24. **22nd Congress of Ethiopian Chemical Society**, Ethiopia (February, 2006).
25. International Conference IUMRS-ICA 2003, ICMAT-2003, Singapore (December, 2003).
26. Fifth Conference of the International Academy of Physical Sciences (April, Bundelkhand University, Jhansi, 2002).
27. **International Statistical Physics Meeting**, Boston, USA, (January 1999).
28. **International Research Workshop on Condensed Matter Physics**, I.C.T.P., Trieste, Italy, (July 1995).
29. **National Symposium on Physics of Semiconductor Nanostructures** (Indian Institute of Technology, Delhi), India (1997).
30. Workshop on Material Science Using High Energy Heavy Ions (Nuclear Science Centre, New Delhi), India (1994).
31. Workshop on Hydrogen in Materials (Nuclear Science Centre, New Delhi), India (1994).

COMMUNITY, PROFESSIONAL & ADMINISTRATIVE SERVICES (NOTABLE)

1. Invited speaker talk delivered on "*Advances in 4D Printing Materials & Technology*". Webinar between NCU (Delhi), GJUST Hisar (India) and AOMRG Organized by Physics Department (AOMRG), FS, UTM (August 5, 2021).
2. Keynote speaker talk delivered on "*Organic-Inorganic NanoHybrids for Upcoming NanoBioMedicine*". International Conference on Materials Research in Science and Engineering (KMRSE'21) (Virtual Event), Kumaraguru College of Technology, Coimbatore, India (July 23-25, 2021).
3. Appointed as **Assessor for Masters and PhD Theses Examination**, Physics Department, FS, UTM **(2010-Continued)**.
4. Invited as **Chief Guest Inagural Talk in the International Conference on Materials Research in Science and Engineering** (KMRSE'21) (Virtual Event), Kumaraguru College of Technology, Coimbatore, India (July 23-25, 2021).
5. Keynote speaker talk delivered on "*On a Unique Host with Tailored Lasing Traits: Synergism of Metal Nanoparticles and Lanthanide Ions*". International e-Conference on Recent Advances in Material Science (ICRAMS), Government PG College Maldevta, Raipur, Dehradun & Department of Physics, H.N.B. Garhwal Central University, Srinagar, India (May 15-16, 2021).
6. Invited as **Chairman of a Session in the International e-Conference on Recent Advances in Material Science** (ICRAMS), Government PG College Maldevta, Raipur, Dehradun &

- Department of Physics, H.N.B. Garhwal Central University, Srinagar, India (May 15-16, 2021).
7. Invited speaker talk delivered on *Defending the Thesis in Convincing Manner*. Organized by Physics Department, FS, UTM (January 23, 2021).
 8. Invited speaker talk delivered on *Writing High Impact Publications*. Lantikan Sebagai Penceramah Bagi Kursus Berstruktur Pgss Faculty of Science Bagi Program Secara Atas Talian Organized by FS, PGSS and SPS, UTM (July 28, 2021).
 9. Invited speaker talk delivered on *How to Write Review Paper*. Sharing Session of FS Research Week 2021, Organized by Physics Department, FS, UTM (March 14–21, 2021).
 10. Appointed for PhD Thesis Examination (Internal) of Omar Hamad, Thesis entitled "*Synthesis and Characterization of Gold Nanoparticles-Doped Zinc Oxide Nanostructures for Ultraviolet Photodetector Application*," Physics Department, Faculty of Science, University of Technology Malaysia (August 19, 2021).
 11. Appointed for PhD Thesis Examination (Internal) of Wan Hairul Anuar Bin Kamaruddin, Thesis entitled "*Polycrystalline Seed-Mediated Growth of Neodymium Modified Borate Crystal and Glass System With Their Properties*," Physics Department, Faculty of Science, University of Technology Malaysia (February 16, 2021).
 12. Appointed for PhD Thesis Examination (Internal) of Nik Noor Aien Binti Mohamed Abdul Ghani, Thesis entitled "*Feasibility Study of Muon Absolute Lifetime Using RuO₂ Thin Film Target for Neutrino Nuclear Response*," Physics Department, Faculty of Science, University of Technology Malaysia (June 20, 2021).
 13. Appointed for PhD Thesis Examination (Internal) of Khamisah Binti Abu Samah, Thesis entitled "*Microstructural and Electrical Properties of Cullet-Paper Ash-Kaolin Clay Ceramic*," Physics Department, Faculty of Science, University of Technology Malaysia (July 26, 2021).
 14. Appointed for MSC Thesis Examination (Internal) of Shakina Harith Mohd Sayadi, Thesis entitled "*Synthesis and Characterizations of Cullet-Clay-Titanium Nitride Ceramics*," Physics Department, Faculty of Science, University of Technology Malaysia (July 8, 2021).
 15. Appointed for PhD Thesis Examination (Internal) of Sharifah Fahsuhazam Binti Abd. Rahman, "*The Physical and Electrical Properties P₂O₅- MgO-Li₂O-TiO₂ Glass Ceramic Embedded With NiO Nanoparticles*," Physics Department, Faculty of Science, University of Technology Malaysia (June 27, 2021).
 16. Appointed as External Examiner for the PhD Thesis of Mr. Sefan Kelil in Physics Programme Entitled "*Transport Properties of Charge Carriers in Disordered Organic Semiconductors based on Monte Carlo Simulations*," Department of Physics, Addis Ababa University, Ethiopia (June 15, 2021).
 17. Appointed as Chairperson for First Assessment Semester 1 Session 2020/2021, MSCF3 and PSCF3, Physics Department, FS, UTM (January 17, 2021).
 18. Appointed as Chairperson for First Assessment Semester 2 Session 2020/2021, MSCF3 and PSCF3, Physics Department, FS, UTM (June 15, 2021).
 19. Appointed in Task Force for the MOOC for the Research methodology Course (USP0010), Faculty of Science, UTM (June 8, 2021).
 20. MOU signed between NorthCap University (Delhi, India) and Guru Jambheshwar University of Science and Technology (Hisar, India) and UTM (February 17, 2021).
 21. Appointed as Associate Research Fellow Laser Centre IBNU Sina Institute for Scientific and Industrial Research (ISI-SIR) from June 1, 2021 to May 31, 2023.
 22. Invited talk delivered on "*Antimicrobial Adaptable Nanomaterials*". Webinar between NCU Delhi and AOMRG Organized by Physics Department (AOMRG), FS (UTM) on the Potential Anti-Viral and Anti-Bacterial Nanomaterials Applications Including Covid Pandemic (September 28, 2020).

23. Invited talk delivered on *Script Preparation & Presentation Using Online Audio*. Faculty of Science Future Ready Educators (FREE) Week, Organized by Physics Department (FS, UTM) (September 27-30, 2020).
24. **Keynote Speaker talk delivered on "A New Host with Customized Intense Lasing Action: Ag Nanoparticles & Ho³⁺ Interplay"**. International Conference on Physics and Chemistry of Materials in Novel Engineering Applications, PCMNEA 2020, Kumaraguru College of Technology, Coimbatore, India (February 6-7, 2020).
25. **Invited talk delivered on "Self-cleaning Glasses"**. Sri Ramakrishna Mission Vidyalaya College of Arts & Science, Coimbatore, India (February 5, 2020).
26. Invited talk delivered on *"Bactericidal Potency of Gold-Cinnamon Nanocomposites"*. Online Faculty Development Program on Novel Material for Biomedical and Health Care Applications at M. Kumarasamy College of Engineering, Karur, Tamilnadu, India (May 11-16, 2020).
27. Invited talk delivered on *A Paradigm Called High Impact Publications: Tactics & Funde*, Workshop Penyelidikan Research Group (AOMRG) on Writing High Impact Article for Publication, Meeting Room Physics Department, Faculty of Science, UTM, Malaysia (28 January, 2020).
28. Invited talk delivered on *How to Write a Win-Win Proposal for Funding*, Workshop Penyelidikan Research Group (AOMRG) on Proposal Writing, Meeting Room Physics Department, Faculty of Science, UTM, Malaysia (29 January, 2020).
29. Invited Plenary talk delivered on *"Synergistic Effects of Erbium and Titania Nanoparticles Concoction on Improved Self-cleaning and Spectral Qualities of Amorphous Tellurite Host"*. The 6th International Conference on Applied and Engineering Physics (iCEAP-19), Hanoi, Thai Nguyen, Vietnam (October 22-26, 2019).
30. Invited Plenary talk delivered on *"Modified Structure and Impedance Attributes of Holmium Ions Included Phosphate-Based Media: Synergism of Amorphous and Crystalline Phases"*. 6th Academic Conference on Natural Sciences for Young Scientists, Master and PhD Students from Asean Countries (CASEAN-19), Hanoi, Thai Nguyen, Vietnam (October 23-26, 2019).
31. Invited talk delivered on *"How to Strategise High Impact Publication"*. Workshop Organized Jointly by SPS-PGSS-SC, Faculty of Engineering, School of Computing, UTM (November 13, 2019).
32. Served as **Organizing Committee Member in the 6th Academic Conference on Natural Sciences for Young Scientists, Master and PhD Students from Asean Countries (CASEAN-19)**, Hanoi, Thai Nguyen, Vietnam (October 23-26, 2019).
33. Served as the **Chairperson in the 6th Academic Conference on Natural Sciences for Young Scientists, Master and PhD Students from Asean Countries (CASEAN-19)**, Hanoi, Thai Nguyen, Vietnam (October 23-26, 2019).
34. **Keynote Speaker talk delivered on "Plasmonics: A Revolution in Nanoscale Optics (A Journey From Plasmon to Plasmonics to Plasmaronics)"**. International Laser Technology & Optics Symposium 2019 (iLATOS-19), Le Grandeur Palm Resort, Johor (September 3-4, 2019).
35. **Served as Organizing Committee Member in the International Laser Technology & Optics Symposium 2019 (iLATOS-19)**, Le Grandeur Palm Resort, Johor (September 3-4, 2019).
36. Invited talk delivered on *Publishing for Graduation: Secret Recipes*. Supervisory Development Program Level 2 (AS-102), Dewan Kuliah 2, C17, Faculty of Science, UTM Johor Bahru (September 5, 2019).
37. Appointed as MSc Thesis Internal Examiner entitled "Synthesis and Characterizations of Bismuth Ferrite nanoparticles for Photocatalytic Degradation of Rhodamine B (RHB)" by Che Zaheerah N. Bt. Che Mohd Zawawi, Physics Department, FS, UTM (June 19, 2019).
38. Appointed as Associate Research Fellow Laser Centre IBNU Sina Institute for Scientific and Industrial Research (ISI-SIR) from May 31, 2019 to May 31, 2021 October 1, 2019).

39. Appointed as External Examiner for the PhD Thesis of Mr. Sandeep Kumar Singh (13112065) in Material Science Program Entitled, "Nanostructured Carbon Materials: Synthesis, Characterization, and Applications in Microwave Absorption and RF Gas Sensor" at IIT Kanpur, India (August 30, 2019).
40. Appointed as the **Editor of the Book of "Magnificent Popular Sciences"**, by the Dean, Faculty of Science, UTM (August, 2019).
41. Appointed as External Examiner for the PhD Thesis Entitled "Effect of Co And Al on Optical and Electrical Properties of TiO₂ Thin Films" Mangalore University, India (May 20, 2019).
42. Appointed as Evaluator of PSM II, Semester II, Sesi 2018/2019 (Material Physics), Physics Department, Faculty of Science, UTM (May 7, 2019).
43. **Invited talk delivered on "Bacteriacidal Effectiveness of Cinnamon Nanoparticles"**. International Conference on Advances in Basic Sciences (ICABS-19), Bahal, Haryana, India (February 7-9, 2019).
44. Invited talk delivered on *Strategies for Inmactful Research Article Writing: Practical Tips and Funde*. Research Week, Ibnu Sina Institute, Faculty of Science, UTM (February 22, 2019).
45. **Invited talk delivered on "Strategies for Inmactful Research Article Writing: Practical Tips and Funde"**. Research Week, Ibnu Sina Institute, Faculty of Science, UTM (February 22, 2019).
46. **Invited talk delivered as Facilitator on "A Paradigm Called Inmactful Research Publication: Secret Recipes"**. Journal Writing Workshop in the Research Week, Ibnu Sina Institute, Faculty of Science, UTM (February, 2019).
47. **Appointed in Task Force for the MOOC for the Research methodology Course (USP0010)**, Faculty of Science, UTM (January, 2019).
48. Invited talk delivered on *Publish in Quartile Journal: A Scientific Articulation Skill Publication Workshop in First UTM Emerging Scientists Conference 2018 (UTM-ESCon2018)*, Pulau Spring resort, Johor Bahru (May, 2018).
49. Appointed as Chairperson for First Assessment Semester 2 Session 2017/2018, Physics Department, FS, UTM (June, 2018).
50. Appointed as Associate Research Fellow Laser Centre IBNU Sina Institute for Scientific and Industrial Research (ISI-SIR) from May, 2017 to May, 2019.
51. **Appointed as MSC Disertation Examiner**, Physics Department, FS, UTM (February, 2018).
52. **Appointed as Advanced Condensed Matter Physics Lecturer (MSCF1483)** for Taibah University PhD Student, Physics Department, FS, UTM (February, 2018).
53. Invited talk delivered on *Strategies to Publish a Review Paper*. Workshop Organized Jointly by SPS-FSPGC-FS on How to Publish in Quartile Journals, C17-DK1, Faculty of Science, UTM (July, 2017).
54. **Invited talk delivered on "An Endless Odyssey towards Greener Earth"**. Polular Science Lecture Series, C17-DK2, Faculty of Science, UTM (March, 2017).
55. **Appointed (June 19, 2016) as Head of Publication Committee in 29th Regional Conference on Solid State Science and Technology (RCSSST 2016)**, KSL, Johor Bahru, Malaysia (November, 2016).
56. Invited talk delivered on *"Nuclear Physics: Fundamentals"*. Winter School on Nuclear Physics (2016), Physics Department, Faculty of Science, Johor Bahru, Malaysia (December, 2016).
57. **Invited talk delivered on The Seven Habits of Effectiveness for a Student, Seven Habits for Successful Students**, Physics Department, UTM (December, 2016).
58. **Appointed as Reviewer for Articles 6th International Graduate Conference on Engineering, Science and Humanities (IGCESH 2016)**, University of Technology Malaysia (August, 2016)
59. **Appointed as Chairperson for the 5th International Conference on Solid State Science and Technology (ICSSST 2015)** in Metal and Alloy Session, Langkawi, Malaysia (December, 2015).

60. Appointed as Assessor for First Assessment Semester I Session 2015/2016 for Masters and PhD Theses, Physics Department, FS, UTM (December, 2015).
61. Appointed as an Editorial Board Member Malaysian Journal of Fundamental and Applied Sciences, TNCP, UTM (January 2015-December 2016).
62. Appointed as Evaluator of Draft Proposal for Final Year Project (FYP) I, PSM I 2015/2016 Physics Department, Faculty of Science, UTM (November, 2015).
63. Member in the Editorial Board of Venus Apex Committee, Global Operation, Venus Publication, India (January, 2015).
64. Appointed as Facilitator in the Workshop on Advanced Spectroscopy, talk delivered on Raman Spectroscopy Physics Department, Faculty of Science, Meeting Room Physics Department, C21, UTM (August, 2015).
65. Appointed as Facilitator in Research Methodology Workshop at Faculty of Petroleum and Renewable Engineering, N11a, DK1, FPREE, UTM (September 29, 2015).
66. Appointed as Editor of Book Chapter "Frontiers of Rare Earth Doped Tellurite Glass", Faculty of Science, UTM (April, 2015).
67. Appointed as Facilitator of Writing Workshop 2, Bachelor's Degree Project (PSM) 2 Sem 2 2014/2015 Physics Department, Faculty of Science, UTM (March 17, 2015).
68. Appointed as Evaluator Panel for SCIENCE FUND Phase 1/2015, Frontiers Materials and Research Alliance (April, 2015).
69. Appointed as Evaluator Panel for FRGS Phase 2/2014, Materials and Manufacturing Research Alliance (September 22-30, 2014).
70. Appointed as Evaluator Panel for GUP Phase 1/2015, Materials and Manufacturing Research Alliance (December 10-31, 2014).
71. Appointed as Facilitator of Writing Workshop 2, Bachelor Degree Project (PSM) 2 Sem 2 2013/2014 Physics Department, Faculty of Science, UTM (May, 2014).
72. Appointed as Member of Postgraduate Committee, Physics Department, FS, UTM (2014-16, 2 yrs).
73. Appointed as MSC thesis Examiner Physics Department, FS, UTM (May, 2014).
74. Invited talk delivered on *Art of Writing for High Impact Factor Academic Journal*, Seminar on High Impact Factor Journal, C17-105, Faculty of Science, UTM, Malaysia (December, 2013).
75. Invited talk delivered on *Seven Habits for Fruitfulness in a Nut Shell*, Seven Habits for Successful Students 2013, Physics Department, UTM, May 20 (2013).
76. Appointed as Expert Evaluator of MyGrants, FRGS (MOHE) August- September (2013).
77. Served in the Academic Quality Award Audit, Faculty of Science, UTM, March (2013).
78. Appointed as Assessor for Masters Dissertation Examination, FS, UTM (2010-Continued).
79. Keynote Speaker of National Science Postgraduate Conference 2011 (NSPC 2011), organised by Faculty of Science and PGSS, UTM, Malaysia on *The need for solar energy: Role of nanoscience*.
80. Invited talk delivered on "*Plasmonics Promises: A Journey from Plasmon to Plasmonics to Plasmaronics*", Seminar on Optoelectronics of Advanced Materials by Laser Research Group, Physics Department, UTM, Malaysia (2011).
81. Served as Modular Curriculum Development Committee member for Physics Department, Addis Ababa University, Ethiopia, Africa (2009).
82. MSc Theses Supervised with Prof. Nicola Marzari, AAU, Material Science Program (2009)
83. Invited talk delivered on *The Art of Research in Space: On 42st Anniversary of First Human in Space*, Tribute to Yuri A. Gagarin, Russian Centre for Science and Culture, Ethiopia (2008).
84. Served as Strategic Planning Committee member for Materials Science Program, Addis Ababa University, Ethiopia, Africa (2007).

85. Invited talk delivered on *Sputnik: Not Merely a Satellite a New Civilization: On 64th Anniversary of First Space Shuttle Sputnik*, Russian Centre for Science and Culture, Ethiopia (2007).
86. Served as Curriculum Development Committee member for Materials Science Program, Addis Ababa University, Ethiopia, Africa (2006).
87. Invited talk delivered on "*Flight into Space: What We Learn?*" On 40th Anniversary of First Human in Space, Tribute to Yuri A. Gagarin, Russian Centre for Science and Culture, Ethiopia (2006).
88. Served as Curriculum Development Committee member for Computational Science Program in Addis Ababa University, Ethiopia, Africa (2006).
89. Served as **Curriculum Review Committee member** for Materials Science Program, Hawassa University, Ethiopia, Africa (2006).
90. Talk at All India Radio, "*Need of Basic Research in the University*", Hisar, Haryana, India (2004).
91. Invited talk delivered, Refresher Course for College & University Faculties on Recent Advances in Pharmaceutical Technology and Computer Applications, GJUST, Hisar, India. *Computer Simulation, Modelling and Molecular Drug Architecture: Monte Carlo & Molecular Dynamics Method* (2003).
92. Invited talk delivered at Refresher Course for College and University Faculties on Computer Applications, Department of Computer Science and Engineering, GJUST, Hisar, India. *Metropolis Monte Carlo Simulation of Simple Liquids and Magnetic Materials* (2003).
93. Invited talk delivered at Refresher Course for College and University Faculties on Computer Applications, Department of Computer Science and Engineering, GJUST, Hisar, India. "*Does Defects Play Any Role?*" (2003).
94. Served as Curriculum Development Committee member for Applied Physics, Guru Jambheshwar University of Science and Technology (GJUST), Hisar, Haryana, India (2002).

RESEARCH TRAINING TAKEN

- ICTP African School on Nanoscience for Solar Energy Conversion, **Addis Ababa University**, Ethiopia (May 2010)
- Summer School on Materials modelling from first principles: theory and practice, ICMR, **University of California**, Santa Barbara, USA (July 2009)
- ICTP and NSF East African School on Materials and Computational Sciences, Addis Ababa University, Ethiopia (Sept 2008)
- SERC School on Non-linear Optics and Laser Spectroscopy, **Indian Institute of Technology**, Delhi, India (Dec 1997)
- SERC School on Models and Techniques of Statistical Mechanics, **Institute of Physics**, Bhubaneswar, India (Dec 1994)
- SERC School on Ferroc Materials, Department of Materials Science, Banaras Hindu University, Varanasi, India (Jan 1993)

OTHER ACADEMIC RECORDS

- **Refresher Course**, Academic Staff College, Jawaharlal Nehru University, India (Jul 2001)
- **Orientation Course**, Academic Staff College, Jawaharlal Nehru University, India (Jun 1998)
- **National Eligibility Test (NET Qualified)** – University Grants Commission, C.S.I.R, India (Dec 1991)
- **Pre-Ph.D. Coursework**, Jawaharlal Nehru University, India (First Class) with Prof. Ram Ramaswamy (Jul 1991)
- **Ph.D. Thesis Title:** *Kinetics of Defect - Mediated Structural Phase Transitions.* (Oct 1996)
Thesis Advisor: Professor Sushanta Dattagupta

FUTURE AND ONGOING RESEARCH INTERESTS

My research involves different areas and varieties of problems in *Experimental, Theoretical & Computational* physics (modelling and simulation). Broadly including Condensed Matter, Materials Science, Nanoscience, NanoBioMedicine, Laser physics, Optoelectronics, Renewable energy and Statistical physics. Simulations methods applied: Monte Carlo, Molecular Dynamics, Density Functional Theory based techniques (Quantum Espresso).

- Synthesis and characterizations of rare earths-doped & nanoparticles embedded up-conversion lasing glasses
- Nonlinearities in optical fibres, glassy materials and semiconductor nanostructures
- Optical & electron correlation effects in nanosystems
- Phase transitions, ordering dynamics and pattern formation in glasses, alloys, superconductors and defect-mediated solid systems
- First principle techniques (based on DFT) for strongly correlated manganate systems & Determination of Electronic & Optical Properties of Semiconductor Nanostructures.
- Materials for renewable energy generation
- Sustainable & durable nanomaterial-based construction materials
- Organic-inorganic nanocomposites for future biomedicine development

OTHER RESEARCH SPECIFICS

•Synthesis and Characterization of Up-conversion Materials for Developing Solid State Lasers. •Synthesis and Characterization of nanomaterials for SOFC. •Ordering in Cu-Au alloys and Magnetic Materials using Effective Medium Theory (EMT) based Monte Carlo Techniques. •Non-equilibrium Statistical Physics: Phase Ordering Dynamics and Pattern Formation and Computer Simulation Using Monte Carlo Technique. •Electronic Structure Calculation of Silicon Nanostructures Using Empirical Pseudo-potential, Tight-binding & Density Functional Theory (Quantum Espresso). •Techniques based on First-principles (Density-functional Based) Theory, force-field methods (include coarse-grained potentials) •Multi-scale Modelling of Materials (Nanomaterials, Bulk, Metals,Alloys, Semiconductors Including Defects) •First Principle Molecular Dynamical Simulation of Defect Systems and Clusters. •Optically Active and Titania Nanoparticles Sensitized Binary Glasses for Self-Cleaning Applications. •Plasmonic Nanoglass: From Preparation to

Application. •Simulation and Modelling of Perovskite Solar Cells. •Laser Induced Breakdown Spectroscopy. •Modelling of Optical Nonlinearities in Fibres and Rare Earth Doped Glasses With and Without Nanoparticles. •Modelling of Fuel Cells and Solar Cells •Optical Electron Correlation Effects in Semiconductor Nanostructures (SNS). •Theoretical Study of Structural Phase Transitions in high Temperature Superconductors, Alloys & Other Complex Systems •Study of Structural Properties and Modelling of Nanomaterials. •Laser & Nonlinear Optics •Theory, Modelling & Simulation in Quantum Optics. •MEMS, NEMS Modelling & Bio-photonics...

TEACHING: COURSES AT UNDERGRADUATE & POSTGRADUATE LEVEL

UNIVERSITY OF TECHNOLOGY MALAYSIA (UTM), MALAYSIA

Bachelor & Masters in Physics: Advanced & Basic Materials Science and Condensed Matter Physics, Analytical Techniques, Research Methodology, Mathematical Methods, Research Techniques, Classical & Quantum Mechanics, Analytical Techniques, Computational Physics, Modern Physics, Thermodynamics & Statistical Physics, Semiconducting Bulk Materials, Low Temperature Physics & Superconductivity, Spectroscopy & Microscopy & Materials Analyses, Undergraduate Projects & Dissertation, Masters Projects, Solid State Physics, Phase Transformation, Research Methodology, Nuclear & Materials & General Physics Laboratory, Optics & Electronics Laboratory...

Special Experimental Courses: General Physics, Condensed Matter & Materials Science Based Experiments, Nuclear Physics, Optics, Digital Electronics & Laser Physics...

PhD in Physics: Phase Transformation, Research Methodology, Advanced Condensed Matter Physics, Advanced Spectroscopy, Numerical Methods, PhD dissertation...

ADDIS ABABA UNIVERSITY (AAU), ETHIOPIA

Bachelor in Physics: Statistical Physics, Electricity & Magnetism, Modern Physics, Solid State Physics and Senior Project...

Bachelor in Physics Education: Quantum Mechanics, Mathematical Methods for Physics, Classical & Quantum Mechanics, and Solid State Physics...

Masters in Physics: Mathematical Physics, Computational Physics, Statistical Physics, Statistical Mechanics Solid State Physics, Special Topics, Graduate Project & Thesis...

Masters in Materials Science: Mathematical & Computational Methods in Materials Science, Quantum Theory & Special Topics in Materials Science, Seminar, Graduate Thesis

Masters in Environmental Science: Environmental Modelling, Environmental Physics...

Masters in Physics Ed.: Mathematical Methods, Classical/Quantum Mechanics...

Masters in Microelectronics: Solid State Electronics, Graduate Thesis, Selected Topics (I, II, III), Numerical Modelling for Semiconductor Devices and Processing...

PhD in Physics: Solid State Physics, Special Topics, Seminar and PhD Dissertation...

GURU JAMBHESHWAR UNIVERSITY OF SCIENCE AND TECHNOLOGY (GJUST), INDIA

Bachelors (BSc) & Masters (MSc) : Electrodynamics, Solid State Physics, Numerical Methods, Mathematical Physics, Statistical Mechanics, Quantum Mechanics, Nuclear Physics, Spectroscopy and Instrumentation, Laser Physics, Fiber Optics, Optoelectronics, Computational Physics, Digital Electronics...

TEACHING: ADDITIONAL COURSES AT VARIOUS LEVELS

Particle Physics, Phase Transitions, Statistical Mechanics, Theory of Semiconductors, Nanoscience and Nanotechnology, Nanophotonics, Modern Physics, Mathematical Methods for Materials Science, Mathematical Physics, Engineering Physics, Electrodynamics, Statistical Modelling, Electronic Structure of Matter, Defect Physics, Low Dimensional Systems, Mesoscopic Systems, Computational Materials Science, Computer Science, Communications Systems, Programming Languages, Solid State Electronics, Complex Fluids, Atmospheric Physics, Nonlinear Optics, Theory of Lasers, Electronics, Optical Communications, Electronic Science, Digital Electronics, Atomic and Molecular Physics, Spectroscopy, Solid State Devices, Electricity and Magnetism, Classical Mechanics, Heat and Mechanics, Thermodynamics, Optics and Physical & Chemical Properties of Matter...

COMPUTER SKILLS

- Programming Knowledge in FORTRAN 77 & 95, C and C++ Languages.
- Experience in UNIX, LINUX, DOS, Microsoft Office, and WINDOWS. Working with Software like LATEX, EMACS, XMGR, Origin etc.
- Developed Computational Materials Science Laboratory at Addis Ababa University, Ethiopia.
- Established a Large Scale Computer Simulation Laboratory for Condensed Matter research, DST-FIST funded project.
- Research Skills in Monte Carlo Simulation, DFT, WEIN2K, ARTwork and Quantum Espresso (PWscf).

PROFESSIONAL BODIES & SOCIETIES

- **Society for Malaysian Solid State Science**, Lifetime Member (2011 - Current)
- **IEEE Electronic Society**, Member (2016 - 2017)
- **IOPi**, Member (2014 - 2017)
- **IEEE Photonics Society**, Member (2013 - 2016)
- **BELMAS (The British Educational Leadership Management and Administration Society)**, Member (2014 - 2015)
- **Chemical Society of Ethiopia**, Member. Africa (2006 - 2010)
- **International Materials Research Society**, Member. Singapore (2003 - 2008)