CURRICULUM VITAE

1. PERSONAL PARTICULARS

Name : NG SHA SHIONG

IC No. : 730910-06-5095

Nationality : Malaysia

Research ID : G-6189-2010 **h-Index** : 19

ORCID : 0000-0003-2023-6419 **Scopus Author ID** : 57197427721

Current Position : Associate Professor

Address : Institute of Nano Optoelectronics Research and Technology (INOR), Universiti Sains Malaysia, 11800 USM, Penang, Malaysia.

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2. ACADEMIC QUALIFICATIONS

2002 – 2007 : **Doctor of Philosophy (Physics – Research Mode)**
Research Field: Solid State Physics (Semiconductor studies)
Universiti Sains Malaysia (USM), Penang, Malaysia.

1999 – 2001 : **Master of Science (Physics – Research Mode)**
Research Field: Solid State Physics (Semiconductor studies)
Universiti Sains Malaysia (USM), Penang, Malaysia.

1995 – 1999 : **Bachelor of Science (Honours)**
Major: Physics
Universiti Sains Malaysia (USM), Penang, Malaysia.

3. WORKING EXPERIENCES

1 Nov 2007 – 31 Jul 2008 : **Lecturer**
School of Physics, USM Penang, Malaysia.

01 Aug 2008 – 14 Apr 2015 : **Senior Lecturer**
School of Physics, USM Penang, Malaysia.

14 Apr 2015 – 22 Sep 2017 : **Senior Lecturer**
Institute of Nano Optoelectronics Research and Technology (INOR), USM Penang, Malaysia.

22 Sep 2017 – present : **Assoc. Prof.**
Institute of Nano Optoelectronics Research and Technology (INOR), USM Penang, Malaysia.

4. TEACHING

Courses taught/tutored at Universiti Sains Malaysia 2007-to date:

1. Mechanics
2. Modern Physics
3. Physics Practical I&II
4. Semiconductor Fabrication Processes
5. Applied Spectroscopy
6. Physics of Optical Communications
7. Semiconductor Physics
8. Experimental And Measurement Techniques
9. Solid-State Physics
10. Advanced Growth Technology

5. CURRENT RESEARCH

1. MOCVD growth of III-nitride semiconductor materials for light emitting and solar cell applications.
2. Low-cost growth of semiconductor materials in particular, III-Nitrides, metal oxides and molybdenum disulfide.
3. X-ray diffraction and optical (Infrared, Ultraviolet-visible, Photoluminescence and Raman) characterizations of bulk and thin films semiconductor materials.
4. Theoretical modelling of infrared reflectance and surface phonon polariton of wide band gap semiconductors.
5. Fabrication and characterizations of porous and nanostructure semiconductor materials

6. PROFESSIONAL MEMBERSHIP

2003 – 2005	**:**	Materials Research Society (Singapore)
2007 – present	**:**	Optical Society of America (USA)
2019 – present	**:**	Senior Member of Optical Society of America (USA)
2010 – present	**:**	Materials Research Society (USA)
2010 – present	**:**	The Society for Applied Spectroscopy
2011 – present	**:**	Malaysian Institute of Physics (Life Member)
2012 – present	**:**	The Malaysian Solid State Science & Technology Society (Life member)
2015 – present	**:**	SPIE

7. AWARDS/RECOGNITIONS

1. Postgraduate Research Scholarship (Skim Biasiswa Khas), **1999 – 2001**, Universiti Sains Malaysia.
2. Graduate Assistance (Teaching) Scheme (Skim Siswazah Pembantu (Pengajaran)), **2002 – 2004**, Universiti Sains Malaysia.
3. Sanggar Sanjung (Hall of Fame) Award for Publication (Journal) Category, **2005**, Universiti Sains Malaysia.
4. 2 Merit Rewards for Publication (Journal) Category, **2006**, Universiti Sains Malaysia.
5. 3 Sanggar Sanjung (Hall of Fame) Awards for Publication (Journal) Category, **2007**, Universiti Sains Malaysia
6. Best Thesis Award (Pure Science Category), **2008**, Universiti Sains Malaysia.
7. Persada Kencana Alumni Award - Excellent Thesis (Anugerah Alumni Persada Kencana – Kategori Tesis Cemerlang), **2008**, Universiti Sains Malaysia.
8. 3 Merit Rewards for Publication (Journal) Category, **2008**, Universiti Sains Malaysia.
9. 3 Sanggar Sanjung (Hall of Fame) Awards for Publication (Journal) Category, **2009**, Universiti Sains Malaysia.
10. 3 Merit Rewards for Publication (Journal) Category, **2009**, Universiti Sains Malaysia.
11. Sanggar Sanjung (Hall of Fame) Award for Publication (Journal) Category, **2010**, Universiti Sains Malaysia.
12. 7 Merit Rewards for Publication (Journal) Category, **2010**, Universiti Sains Malaysia.
13. 5 Sanggar Sanjung (Hall of Fame) Awards for Publication (Journal) Category, **2011**, Universiti Sains Malaysia.
14. 9 Merit Rewards for Publication (Journal) Category, **2011**, Universiti Sains Malaysia.
15. Best Research Project (under Pure Science category), **2012**, Malaysian Ministry of Higher Education.
16. Sanggar Sanjung (Hall of Fame) Award for Publication (Journal) Category, **2012**, Universiti Sains Malaysia.
17. 4 Sanggar Sanjung (Hall of Fame) Awards for Publication (Journal) Category, **2013**, Universiti Sains Malaysia.
18. 1 Sanggar Sanjung (Hall of Fame) Awards for Publication (Journal) Category, **2014**, Universiti Sains Malaysia.
19. 1 Sanggar Sanjung (Hall of Fame) Awards for Publication (Journal) Category, **2015**, Universiti Sains Malaysia.
20. Excellent Service Award (USM), **2016,** Universiti Sains Malaysia.
21. Sirim Invention, Innovation & Technology Expo (Si2Te) 2017, 17-19 April 2017. AMREX Sirim Berhad. Silver medal.
22. Best Oral Presentations, 2017 International Conference on Advanced Manufacturing and Materials (ICAMM 2017), 25-27 Jun, 2017, The Hong Kong Polytechnic University, Hong Kong
23. 1 Merit Rewards for Publication (Journal) Category, **2018**, Universiti Sains Malaysia.
24. Sanjugan Karya (Book Publicaton), **2019**, Universiti Sains Malaysia.
25. Senior Member of Optical Society of America (OSA, USA), **2019**.

8. PROFESSIONAL ACTIVITIES/ CONSULTANCY

Auditor/Moderator:

1. External Moderator (Physics) for School of General & Foundation Studies (SGFS), AIMST University, 02 May 2017 – 01 May 2019.

2. Internal Auditor/ Programme Self-Review Report for Master of Science (Nano-Optoelectronics) Mixed Mode Programme, 25 Nov 2020 – 29 Nov 2020, Universiti Sains Malaysia.

Examiner for Thesis:

1. Internal Examiner for MSc by coursework project, Muhammad Sa' Dullah Bin Baharom, 2008.
2. Internal Examiner for MSc by coursework project, Tam Chee Wah, 2012.
3. Internal Examiner for PhD thesis, Alaa Jabbar Ghazai, 2012.
4. Internal Examiner for MSc thesis, Teo Silk Guan, 2012.
5. Internal Examiner for MSc thesis, Ng Siow Woon, 2013.
6. Internal Examiner for PhD thesis, Imad Hussein Kadhim, 2016.
7. Internal Examiner for PhD thesis, Hadi Mahmodi Sheikh Sarmast, 2017.
8. Internal Examiner for PhD thesis, Shaker Ali Hamad Abu Bidier, 2017.
9. Internal Examiner for PhD thesis, Shaker A. Bidier, 2017.
10. Internal Examiner for MSc thesis, Emad Adnan Said Kabaa, 2018.
11. Internal Examiner for MSc thesis, Umar Bashir Ganie, 2018.
12. Internal Examiner for MSc thesis, Siti Nur Atikah Binti Shamsuddin, 2019.
13. External Examiner for MSc thesis, Nabihah Binti Sihar, 2019
14. Internal Examiner for MSc (Nano-Optoelectronics) Mixed Mode Dissertation, B Logesh A/L Balamani, 2020.
15. Internal Examiner for MSc thesis, Hasmaifarahatul Hidayah Binti Abd Wahab, 2021

Discipline Expert Panel:

1. Panel for PhD thesis, Shaker A. Bidier, 2017.
2. Panel for MSc thesis, Emad A. Kabaa, 2017.

Visiting Lecturer / Visiting Scientist / Visiting Fellow / Visiting Professor

1. Visiting Scientist, National Changhua University of Education, Taiwan, R.O.C., 17 Nov 2014 – 03 Jan 2015.
2. Visiting Researcher, The Solid State Lighting & Energy Electronics Center (SSLEEC) at UC Santa Barbara, USA, 02 Jun 2018 – 30 Nov 2018.

Reviewing Books/Book Chapters:

1. Book Reviewer, Penerbit USM, (2020).

Reviewing Articles:

1. Manuscript Reviewer, 2D Materials, (2019).
2. Manuscript Reviewer, AIP Conference Proceedings – AMC 2016, (2017).
3. Manuscript Reviewer, AIP Conference Proceedings – Perfik 2012, (2012).
4. Manuscript Reviewer, Applied Optics, (2013).
5. Manuscript Reviewer, Ceramics International, (2020).
6. Manuscript Reviewer, ICAMM 2018, (2018).
7. Manuscript Reviewer, ICMEA 2018, (2017).
8. Manuscript Reviewer, ICoSeMT 2019, (2019)
9. Manuscript Reviewer, International Journal of Physical Sciences, (2009).
10. Manuscript Reviewer, International Journal of Technology (IJTech), (2020)
11. Manuscript Reviewer, International Research Journal of Microbiology, (2012).
12. Manuscript Reviewer, IOP Conference Series (ICSSST2017), (2017).
13. Manuscript Reviewer, IWMSE 2018, (2018).
14. Manuscript Reviewer, Journal of Alloys and Compounds, (2016 & 2017).
15. Manuscript Reviewer, Journal of Applied Physics, (2015, 2016 & 2017, 2020).
16. Manuscript Reviewer, Journal of Crystal Growth, (2018).
17. Manuscript Reviewer, Journal of Optical Society of America B, (2013).
18. Manuscript Reviewer, Journal of Physical Science, (2010 & 2011).
19. Manuscript Reviewer, Journal of Physical Sciences (ICYC2017 Special Issue), (2017).
20. Manuscript Reviewer, Journal of Physics D: Applied Physics, (2015, 2016, 2019).
21. Manuscript Reviewer, Materials Chemistry and Physics, (2017).
22. Manuscript Reviewer, Materials Research Express, (2018, 2019).
23. Manuscript Reviewer, Materials Science in Semiconductor Processing, (2016, 2018).
24. Manuscript Reviewer, Optic Express, (2014).
25. Manuscript Reviewer, Optic Materials, (2015).
26. Manuscript Reviewer, Optical Materials Express, (2014).
27. Manuscript Reviewer, Physica Scripta, (2020, 2021).
28. Manuscript Reviewer, Proceedings of International Conference on Material Technology and Environmental Engineering (MTEE 2015).

29. Manuscript Reviewer, Proceedings of MNRG 2016, (2017).
30. Manuscript Reviewer, Sains Malaysiana (2018).
31. Manuscript Reviewer, Solid State Communications, (2011).
32. Manuscript Reviewer, Solid State Electronics, (2018).
33. Manuscript Reviewer, Surface Review Letters, (2016, 2017).
34. Manuscript Reviewer, Vacuum, (2019).
35. Manuscript Reviewer, Surface and Interface, (2021).
36. Manuscript Reviewer, Journal of the Mechanical Behavior of Biomedical Materials (2021).
37. Manuscript Reviewer, International Journal of Nanotechnology (Special Issue) (2021).

Technical Assessor:

1. Technical assessor for Radio Frequency Sputtering system, 2010, Universiti Sains Malaysia.
2. Technical assessor for Ultra-violet Visible Near Infrared (UV-Vis-NIR) Spectrophotometer system, 2012, Universiti Sains Malaysia.
3. Technical assessor for the Dip Coater System, 2014, Universiti Sains Malaysia.
4. Technical assessor for the Spectrometer/Monochromator System, 2016, INOR, Universiti Sains Malaysia.
5. Technical assessor for the Microwave Process Chamber, 2016, INOR, Universiti Sains Malaysia.
6. Technical assessor for the X-ray Diffraction System, 2018, INOR, Universiti Sains Malaysia.

Assessor for Grant Application:

1. Assessor for Graduate Research Fund Scheme, 2011, Universiti Sains Malaysia.
2. Assessor for Special Research University (RUI) Matching Grant, 2020, Universiti Sains Malaysia.
3. Research Grant Progress Monitoring Evaluation Panel for Research University Grants (RUI), 2021, Universiti Sains Malaysia.
4. Internal Reviewer for Fundamental Research Grant Scheme (FRGS) Phase 1/2021 Research Domain: Pure and Applied Sciences, 2021, Universiti Sains Malaysia.

Invited Speaker (Conference / Seminar / Symposium and other similar academic forums)

1. **Ng Sha Shiong**, 2010, "Photoluminescence Spectroscopy", Workshop on Advanced Characterization Methods for Nanomaterials, 1st – 3rd, June 2010, School of Physics, Universiti Sains Malaysia, Penang, Malaysia.
2. **Ng Sha Shiong**, 2010, "Physics Practical & Postgraduate Study in School of Physics", Sustainable Academic Appreciation Program (Program Penghayatan Lestari Akademik), 18 Jul 2010, Student Development and Advisory Unit, Lecture Hall T, Universiti Sains Malaysia, Penang, Malaysia.
3. **Ng Sha Shiong**, 2012, "Raman and Photoluminescence Spectroscopy", Workshop on Fabrication and Advanced Characterization Methods for Nanomaterials, 15th – 17th, Feb 2012, School of Physics, Universiti Sains Malaysia, Penang, Malaysia.
4. **Ng Sha Shiong**, 2012, "Fourier Transform Infrared Spectroscopy", Workshop on Fabrication and Advanced Characterization Methods for Nanomaterials, 15th – 17th, Feb 2012, School of Physics, Universiti Sains Malaysia, Penang, Malaysia.
5. **Ng Sha Shiong**, 2013, "Optical Characterization", Workshop on Advanced Semiconductor Technology: Fabrication, Characterization and Applications, 23rd – 24th, December 2013, CRI Seminar Room, Centre for Research Initiatives, Building J06, Universiti Sains Malaysia.
6. **Ng Sha Shiong**, 2014, "Advanced Raman Spectroscopy", Seminar On Advanced Raman Spectroscopy, 25th – 26th, June 2014, Science and Engineering Research Centre (SERC), Seri Ampangan Engineering Campus, Universiti Sains Malaysia, Penang, Malaysia.
7. **Ng Sha Shiong**, 2014, "Optical characterization of semiconductor materials: Polarized Infrared Reflection and Attenuated Total Reflection Techniques", 03th Dec 2014, Lecture Hall E408, Department of Electronics Engineering, National Changhua University of Education, Changhua 500, Taiwan, Republic of China.
8. **Ng Sha Shiong**, 2015, "Raman Spectroscopy for Material Characterization", Seminar On Spectroscopy & Chromatography Analysis, 14th – 15th, September 2015, Science and Engineering Research Centre (SERC), Seri Ampangan Engineering Campus, Universiti Sains Malaysia, Penang, Malaysia.
9. **Ng Sha Shiong**, 2016, "A Guide for Scientific Writing: Research Article Writing", Knowledge Transfer and Scientific Writing" Workshop, 20th April 2016, School of Physics, Universiti Sains Malaysia, Penang, Malaysia.
10. **Ng Sha Shiong**, 2016, "Raman Spectroscopy: Instrumentation & Selected Applications", Raman Workshop: Raman Spectroscopy - Basic Principles, Instrumentation & Selected Applications, 01 August 2016, Auditorium B, Lower Ground Floor, Block C, USAINS, sains@usm, Bukit Jambul, Penang, Malaysia.
11. **Ng Sha Shiong**, (2017) Fundamentals of Raman Spectroscopy and Instrumentation Talk Through, in Confocal Raman Spectroscopy: Advanced Surface Characterization Technique for Materials Science, 02-03 October 2017, Seminar Room 3, Lower Ground Floor, Block C, sains@usm, Bukit Jambul, Pulau Penang, Malaysia.
12. **Ng Sha Shiong**, (2017) Raman & Photoluminescence Spectroscopy, in Workshop on Advanced Materials Technology: Growth & Characterization (AMT-GC 2017), 16 November 2017, Auditorium B, Ground Floor, Block C, sains@usm, Bukit Jambul, Pulau Penang, Malaysia.

13. **Ng Sha Shiong**, (2019) Sol-gel spin coating growth of magnesium doped indium nitride thin films on different substrates, in The 4th International Tropical Renewable Energy Conference (i-TREC 2019), 14 – 16 August 2019, The Anvaya Beach Resorts-Bali Indonesia.
14. **Ng Sha Shiong**, (2019) Advanced Growth Technology, in Workshop On Advanced Semiconductors And Nanotechnology (WASN 2019), 09 October 2019, Malaysian Global Innovation & Creativity Centre (MaGIC), Cyberjaya, Malaysia.

Committee Members:

1. Committe member for the Workshop on Advanced Characterization Methods for Nanomaterials, 1st – 3rd, June 2008, School of Physics, Universiti Sains Malaysia, Penang, Malaysia.
2. Committe member for the Workshop on Fabrication and Advanced Characterization Methods for Nanomaterials, 15th – 17th, Feb 2012, School of Physics, Universiti Sains Malaysia, Penang, Malaysia.
3. Committe member for the Workshop on Advanced Semiconductor Technology: Fabrication, Characterization and Applications, 23rd – 24th, Dec 2013, Centre for Research Initiatives, Universiti Sains Malaysia, Penang, Malaysia.
4. Scientific committe member for the 1st Meeting of Malaysia Nitrides Research Group (MNRG), 7th April 2014, Centre for Research Initiatives, Universiti Sains Malaysia, Penang, Malaysia.
5. Scientific committe member for the 2nd Meeting of Malaysia Nitrides Research Group (MNRG), 8th – 9th June 2015, Centre for Research Initiatives, Universiti Sains Malaysia, Penang, Malaysia.
6. Organizing committee for International Symposium on LED and OLED Technology in Conjunction with the International Year of Light 2015 (ISOLED 2015), 14 December 2015.
7. Organizing committee for Nobel Laureate Lecture Series, 29 July 2016, Universiti Sains Malaysia, Penang, Malaysia.
8. Chairman for the Raman Workshop organizing committee, 01 August 2016, Institute of Nano Optoelectronics Research and Technology, Universiti Sains Malaysia, Penang, Malaysia.
9. Chairman for Scientific Research & Writing Workshop**,** 5 December 2016, Auditorium Ishak Pateh Akhir, Ground Floor, Block C, sains@usm, Bukit Jambul, Pulau Penang, Malaysia.
10. Chairman for 3rd Meeting of Malaysia Nitrides Research Group (MNRG), 6-7 December 2016, Auditorium Murad Mohd Noor, Ground Floor, Block C, sains@usm, Bukit Jambul, Pulau Penang, Malaysia.
11. Committee member for Academy of Sciences Malaysia Fellow's Lecture by Professor Dr. Zainuriah Hassan FASc, 07 December 2016, Auditorium Murad Mohd Noor, Ground Floor, Block C, sains@usm, Bukit Jambul, Pulau Penang, Malaysia.
12. Deputy Chairman II for the 6th International Conference on Solid State Science and Technology (ICSSST 2017), 14-16 November 2017, Olive Tree Hotel, Pulau Penang, Malaysia.
13. Chairman of organizing committee for the Confocal Raman Spectroscopy: Advanced Surface Characterization Technique for Materials Science, 02-03 October 2017, Institute of Nano Optoelectronics Research and Technology, Universiti Sains Malaysia, Penang, Malaysia.
14. Chairman of organizing committee for the Workshop on Advanced Materials Technology: Growth & Characterization (AMT-GC 2017), 16 November 2017, Institute of Nano Optoelectronics Research and Technology, Universiti Sains Malaysia, Penang, Malaysia.
15. Scientific & Publication committee member for the 4th Meeting of Malaysia Nitrides Research Group (MNRG), 21st December, 2017, Institute of Nano Optoelectronics Research and Technology, Universiti Sains Malaysia, Penang, Malaysia.
16. Technical Committee for the 2017 International Conference on Advanced Manufacturing and Materials (ICAMM 2017), 25-27 Jun, 2017, The Hong Kong Polytechnic University, Hong Kong.
17. Technical Committee for the 2018 International Conference on Materials Engineering and Applications (ICMEA 2018), 14-16 January, 2018, Bali, Indonesia.
18. Technical Committee for the 2018 2nd International Conference on Advanced Manufacturing and Materials (ICAMM 2018), 11-13 Jun, 2018, Tokyo, Japan.
19. Technical Committee for the 2018 International 4th Annual International Workshop on Materials Science and Engineering (IWMSE 2018), 18-20 May, 2018, Xi'an, China.
20. Technical Committee for the 2019 3rd International Conference on Advanced Manufacturing and Materials (ICAMM 2019), May 29-31, 2019, Beijing University, Beijing, China.
21. Chairman of the Registration and Protocol Committee for the International Conference on Semiconductor Materials and Technology (ICoSeMT 2019), 29 – 30 April 2019, Flamingo Hotel by the Beach, Penang, Malaysia
22. Committee member for Sharing Session with Nobel Laureate, 23 September 2019, Auditorium Murad Mohd Noor, SAINS@USM, Penang, Malaysia.
23. Deputy Chairman of the Workshop On Advanced Semiconductors And Nanotechnology (WASN 2019), 09 October 2019, Malaysian Global Innovation & Creativity Centre (MaGIC), Cyberjaya, Malaysia.
24. Chairman for 5th Meeting of Malaysia Nitrides Research Group (MNRG), 01-02 December 2020, Virtual Conference.
25. Advisory Board for International Conference on Communication, Optical & Microelectronics, April 3-4, 2020, JECRC, Jaipur, India.

26. Advisory Board for International Conference on Advances in Materials Science, Communication and Microelectronics February 19-20, 2021, JECRC, Jaipur, India.
27. Technical Committee for the 4th International Conference on Materials Engineering and Applications (ICMEA 2021), January 8-10, 2021, Nha Trang, Vietnam.
28. Technical Committee for the International Conference on Electron Devices and Applications (ICEDA 2021), May 29-31, 2021, Nanjing, China.
29. Treasurer for the 2nd International Conference on Semiconductor Materials and Technology (ICoSeMT 20121) and International Invention, Innovation & Design Expo (INoDeX 2021), 08 – 09 Nov 2021, Virtual Conference.

9. GRADUATE SUPERVISION

(a) **PhD projects** (**MS**: main supervisor, **CS**: co-supervisor)

1. Mazin A Mahdi (**Completed 2013**), Synthesis Of Wide Band Gap CdS And ZnCdS Nanostrucures For High Speed Photodetection Device. **CS**
2. Maryam Amirhoseiny Abdollah (**Completed 2014**), Structural And Optical Properties Of Sputtered Nanocrystalline Indium Nitride On Silicon Substrates. **CS**
3. Al Jameel Abdulaziz Ibraheem (**Completed 2016**), Surface phonon polariton characteristics in InAlGaN quaternary Alloys. **CS**
4. Fong Chee Yong (**Completed 2016**), Spin coating growth and characterizations of gallium nitride (GaN) thin films. **MS**
5. Lee Sai Cheong (**Completed 2016**), Surface and optical phonon characteristics of wurtzite crystals with different crystal orientations. **MS**
6. Pauline Yew (**Completed 2018**) Theoretical and experimental studies of optical phonon characteristics of wurtzite $Al_xIn_{1-x}N$. **MS**
7. Lee Zhi Yi (**Completed 2018**), Spin coating growth and characterizations of indium nitride (InN) thin films. **MS**
8. Maizaitul Akmam Bt Ab Hamid (On going – 01 Mar 2016), Growth gallium nitride thin films by sol-gel dip coating method. MS
9. Ibrahim Ahmed Mohamed Elsayed Elewah (on-going – 01 September 2018), Performance Evaluation and Enhancement of Visible Light Communications VLC. **MS**
10. Ahlaam Taher Nomaan Saeed Mohammed (On going – 22 October 2018), GaN-nanoparticales embedded in polymer using electrospinning method for photodetector applications. **CS**
11. Mohd Ann Amirul Zulffiqal Bin Md Sahar (On going – 01 Mar 2018), Novel Structures for High Efficiency GaN-based Light Emitting Diodes. **CS**.
12. Wang Tian Kun (On going – 01 September 2019), Chiral Near Field GaN-based Photodetector. **MS**
13. Ahmad Sauffi Bin Yusof (On going – 01 May 2019), Fabrication and characterization of InGaN based solar cell. **CS**.
14. Loo Chin Chyi, (On going – 01 September 2019), Monash University Malaysia, Photostriction as a Piezo-Phototronic Effect in GaN and GaN-based Multiple Quantum Well. **CS**
15. Habib Ullah Manzoor (On going – 01 November 2020), Growth of indium-rich InGaN thin films using atmospheric plasma chemical vapor deposition technique for solar cell applications. **MS**
16. Nantha Balan A/l Kasi Pandi (On going – 01 Mar 2021), Optical Nonlinearity in Monolayered Materials. **CS**.
17. Tan Aik Kwan (On going – 01 Jun 2021), Multijunction Indium-rich InGaN by MOCVD for Solar Cell Application. **MS**.

(b) **MSc projects (Masters by Research)** (MS: main supervisor, CS: co-supervisor)

1. Lee Sai Cheong (**Completed 2012**), Infrared attenuated total reflection infrared studies on the surface phonon polariton in wide band gap Zinc Oxide semiconductors. **MS**
2. Ching Chin Guan (**Completed 2013**), Fabrication and characterizations of porous zinc oxide thin films. **MS**
3. Cheah Sook Fong (**Completed 2014**), Morphological and optical properties of porous gallium nitride (GaN) fabricated by photoelectrochemical process. **MS**
4. Nurul Atikah Bt Mohd Isa (**Completed 2018**), Sol-gel spin coating growth of aluminium gallium nitride thin films. **MS**
5. Lee Hui San (**Completed 2018**), Microwave assisted growth of doped indium nitride thin films. **MS**
6. Tan Aik Leng (**Completed, 2019**), Sol-gel spin coating growth and characterization of molybdenum disulfide thin films on AlN/Si template. **CS**

(b) **MSc projects (Masters Mixed Mode)** (MS: main supervisor, CS: co-supervisor)

1. Ooi Ming Erh (**Completed 2020**), MOCVD growth of InGaN thin films for solar cell application. **MS**

2. Eunice Kwok Wei Lyn (**Completed 2020**), Growth and characterization of Ga2O3 thin films using Sol gel spin coating method. **MS**
3. Rahman Kazi Faridur (On going – 09 September 2019), Characterization, and fabrication of GaN-based LEDs. **MS**

10. RESEARCH GRANTS (PS: Principal Investigator; Co-Researcher)

(a) International

1. COMSTECH-TWAS:
Title: Experimental and theoretical studies of surface phonon polariton characteristics of AlxIn1-xN thin films grown on SiC substrate.
Duration: 18 Months (10/09/2012 - 09/03/2014)
Source of Funding: Organisation of Islamic Cooperation.
Amount of grant: US$ 12,000.00
Project Leader: Dr. Ng Sha Shiong

2. Nippon Sheet Glass Foundation for Materials Science and Engineering:
Title: Mg-doped GaN thin Films Grown on AlN/Sapphire Substrate Prepared by Sol-Gel Spin Coating Method
Duration: 2 Years (1/01/2016 - 31/12/2017)
Source of Funding: Nippon Sheet Glass (NSG) Foundation, Japan
Amount of grant: RM 20,251.70
Project Leader: Dr. Ng Sha Shiong

3. External Agency:
Title: A Strategy for the Production of Thermochromic Energy Saving Materials for use in Roofing and other Applications.
Duration: 12 Months (1/11/2013 - 29/02/2016)
Source of Funding: Cygnet Work Inc., USA.
Amount of grant: RM 100,000.00
Project Leader: Prof. Zainuriah Hassan
Co-Researchers: Prof. Madya Ir. Dr. Cheong Kuan Yew, Prof. Dr. Farook A/L Adam, En. Mohd Nor Isman Bin Ismail, Mr. Waleed Khaldi (Cygnet Work Inc. Amerika Syarikat), Dr. Naser Mahmoud Ahmed, Dr. Ng Sha Shiong, Dr. Yam Fong Kwong

4. Hubert Curien Partnership - Hibiscus (PHC-Hibiscus): France-Malaysia:
Title: Development of InGaN Schottky-Based Solar Cells (INSOL).
Duration: 2 Years (01/11/2019 - 31/03/2022)
Source of Funding: Ministry of Education of Malaysia.
Amount of grant: RM 66,000.00
Project Leader: Prof. Zainuriah Hassan
Co-Researchers: Assoc. Prof. Dr. Ng Sha Shiong, Dr. Lim Way Foong, En. Mohd Anas Bin Ahmad, Nicolas Fressengeas, Queny Kieffer, Sidi Hamady

(b) National

1. Fundamental Research Grant Scheme (FRGS):
Title: Infrared attenuated total reflection infrared studies on the surface phonon polariton in wide band gap zinc oxide semiconductors
Duration: 2 Years (15/12/2009 - 14/11/2011)
Source of Funding: Ministry of Higher Education of Malaysia
Amount of grant: RM 36,000.00
Project Leader: Dr. Ng Sha Shiong
Co-researchers: Prof. Zainuriah Hassan, Assoc. Prof. Haslan Abu Hassan, Siti Khadijah Mohd Bakhori

2. Fundamental Research Grant Scheme (FRGS):
Title: Surface phonon polariton resonance modulation in wurzite III-nitride semiconductor system via modification of surface structure and formation of alloy structure
Duration: 2 Years (16/4/2013 - 15/4/2015)
Source of Funding: Ministry of Higher Education of Malaysia
Amount of grant: RM 159,000.00

Project Leader: Dr. Ng Sha Shiong
Co-researchers: Prof. Zainuriah Hassan, Prof. Haslan Abu Hassan.

3. Fundamental Research Grant Scheme (FRGS):
Title: Investigation of InN-based semiconductors prepared using sol-gel spin coating method
Duration: 2 Years (01/12/2014 - 30/11/2016)
Source of Funding: Ministry of Higher Education of Malaysia
Amount of grant: RM 67,200.00
Project Leader: Dr. Ng Sha Shiong
Co-researchers: Prof. Zainuriah Hassan, Dr. Yam Fong Kwong.

4. Science Fund:
Title: Low-cost sol-gel spin coating growth of GaN-based semiconductors for optoelectronic applications
Duration: 30 Months (01/05/2015 - 30/10/2017)
Source of Funding: Ministry of Science, Technology & Innovation Malaysia
Amount of grant: RM 395,115.00
Project Leader: Dr. Ng Sha Shiong
Co-researchers: Prof. Zainuriah Hassan, Prof. Haslan Abu Hassan, Dr. Yam Fong Kwong.

5. Fundamental Research Grant Scheme (FRGS):
Title: Effects of aluminium (Al), x and indium (In), y compositions on surface and interface ohonon polariton (SPP and IPP) modes of AlxInyGa1-x-yN and ZnO thin films.
Duration: 3 Years (01/05/2011 - 31/10/2014)
Source of Funding: Ministry of Higher Education of Malaysia
Amount of grant: RM 100,000.00
Project Leader: Prof. Haslan Abu Hassan
Co-researchers: Prof. Zainuriah Hassan, Dr. Ng Sha Shiong

6. Fundamental Research Grant Scheme (FRGS):
Title: Investigation on hexagonal inclusions in cubic gallium nitride materials
Duration: 24 Years (01/06/2012 - 30/11/2014)
Source of Funding: Ministry of Higher Education of Malaysia
Amount of grant: RM 92,000.00
Project Leader: Dr. Norzaini Zainal
Co-researchers: Prof. Zainuriah Hassan, Dr. Ng Sha Shiong, Dr. Naser Mahmoud Ahmed, Prof. Datin Dr. Saadah Abdul Rahman, Dr. Ahmad Shuhaimi Abu Bakar

7. Exploratory Research Grant Scheme (ERGS):
Title: Fabrication and characterization on nanostructured compound semiconductors for application as gas sensors
Duration: 2 Years (01/08/2012 - 31/07/2014)
Source of Funding: Ministry of Higher Education of Malaysia
Amount of grant: RM 92,000.00
Project Leader: Prof. Zainuriah Hassan
Co-researchers: En. Mohd Anas Bin Ahmad, Dr. Naser Mahmoud Ahmed, Dr. Ng Sha Shiong, Dr. Norzaini Zainal, Dr. Yam Fong Kwong, En. Yushamdan Bin Yusof.

8. MALAYSIAN TORAY SCIENCE FOUNDATION (MTSF):
Title: The fabrication and investigation of nitrogen doped copper oxide thin films on polyethylene terephthalate by radio frequency sputtering for photovoltaic application
Duration: 1 Year (05/10/2012 - 31/05/2014)
Source of Funding: Malaysia Toray Science Foundation
Amount of grant: RM 20,000.00
Project Leader: Mr. Ooi Poh Kok
Co-researchers: Dr. Ng Sha Shiong, Prof. Mat Johar Abdullah

9. Exploratory Research Grant Scheme (ERGS):
Title: Exploration of Titania Nanostructures for Fabrication of High Performance Dye-sensitized Solar Cell
Duration: 3 years (01/06/2013 - 31/05/2016)
Source of Funding: Ministry of Higher Education of Malaysia
Amount of grant: RM 180,000.00
Project Leader: Dr. Yam Fong Kwong
Co-Researchers: Prof. It-Meng (Jim) Low, Dr. Ng Sha Shiong, Prof. Zainuriah Hassan

10. Fundamental Research Grant Scheme (FRGS)
Title: Fundamental Analysis Of Semiconductor-Metal Transition In Indium-Doped Zinc Oxide Carrier Concentration And Current-Voltage Measurements
Duration: 3 Years (01/05/2013 - 30/4/2016)
Source of Funding: Ministry of Higher Education of Malaysia
Amount of grant: RM 120,000.00
Project Leader: Prof. Madya Dr. Saw Kim Guan
Co-Researchers: Dr. Ng Sha Shiong, Dr. Pung Swee Yong, Dr. Yam Fong Kwong

11. Fundamental Research Grant Scheme (FRGS)
Title: Study Of Structural And Optical Properties Of Nanostructured Wide Band Gap Ternary Alloy Semiconductors
Source of Funding: Ministry of Higher Education of Malaysia
Duration: 2 years (01/12/2013 - 30/11/2015)
Amount of grant: RM 137,000.00
Project Leader: Prof. Zainuriah Hassan
Co-Researchers: Dr. Naser Mahmoud Ahmed, Dr. Ng Sha Shiong, Dr. Norzaini Zainal, Dr. Yam Fong Kwong.

12. Fundamental Research Grant Scheme (FRGS)
Title: Preparation and Characterization of Nanostructured Porous Ternary and Quaterbary III-nitrides Alloys
Source of Funding: Ministry of Higher Education of Malaysia
Duration: 2 years (01/01/2014 - 31/12/2016)
Amount of grant: RM 200,000.00
Project Leader: Prof. Zainuriah Hassan
Co-Researchers: Dr. Chuah Lee Siang, Dr. Naser Mahmoud Ahmed, Dr. Ng Sha Shiong, Dr. Norzaini Zainal, Dr. Yam Fong Kwong.

13. Fundamental Research Grant Scheme (FRGS)
Title: Investigation of Structural, Optical and Electrical Properties of MoS2 Thin Films Grown by a Novel Solution Process.
Duration: 2 Years (01/08/2016 - 31/07/2018)
Source of Funding: Ministry of Higher Education of Malaysia
Amount of grant: RM 154,954.00
Project Leader: Prof. Haslan Abu Hassan
Co-researchers: Dr. Ng Sha Shiong, Dr. Yam Fong Kwong

13. Long Term Research Grant Scheme (LRGS)
Title: Wide Bandgap Semiconductor - Energy Efficient Lighting.
Duration: 3 Years (15/10/2017 - 15/10/2020)
Source of Funding: Ministry of Higher Education of Malaysia
Amount of grant: RM 2,000,000.00
Project Leader: Prof. Dr. Zainuriah Hassan
Co-researchers: Prof. Dr. Abdul Manaf Bin Hashim, Dr. Ng Sha Shiong, Dr. Norzaini Zainal, Dr. Shaharin Fadzli Abd Rahman, En. Mohd Anas Bin Ahmad

14. Long Term Research Grant Scheme (LRGS)
Title: Wide Bandgap Semiconductor - Energy Efficient Lighting.
Duration: 3 Years (15/10/2017 - 30/04/2021)
Source of Funding: Ministry of Higher Education of Malaysia
Amount of grant: RM 1,000,000.00
Project Leader: Assoc. Prof. Dr. Prabakaran Poopalan
Co-researchers: Dr. Ala'Eddin Ahmad Jaber Saif, Dr. Nor Azura Malini Bt Ahmad Hambali, Dr. Nurjuliana Juhari, Dr. Ong Siok Lan, Dr. Azzuliani Binti Supangat, Dr. Goh Boon Tong, Dr. Ng Sha Shiong, En. Mohd. Anas Ahmad, Dr. Mohd. Zainizam Bin Sahdan, Dr. Mohd. Khairul Bin Ahmad

15. Fundamental Research Grant Scheme (FRGS)
Title: An insight into the structural, optical and electrical properties of transparent conductive gallium oxide thin films prepared by sol-gel spin coating method
Duration of Project: 36 Months 31/08/2022
Source of Funding: Ministry of Higher Education of Malaysia
Amount of grant: RM 137,800.00
Project Leader: Assoc. Prof. Dr. Ng Sha Shiong

Co-researchers: Prof. Dr. Haslan Abu Hassan, Prof. Dr. Zainuriah Hassan, Assoc. Prof. Dr. Saw Kim Guan, Dr. Naser Mahmoud Ahmed, Dr. Muhammad Firdaus Bin Omar, En. Mohd Anas Ahmad, En. Muhammad Fadhirul Izwan Bin Abdul Malik

16. Fundamental Research Grant Scheme (FRGS)
Title: Mechanism of nitridation on high miscut-angle sapphire substrate to improve AlN underlying layer for highly efficient III-nitride devices
Duration of Project: 3 Years (01/09/2019 - 31/08/2022)
Source of Funding: Ministry of Higher Education of Malaysia
Amount of grant: RM 146,230.00
Project Leader: Assoc. Prof. Dr. Norzaini Zainal
Co-researchers: Dr. Ahmad Shuhaimi Bin Abu Bakar, En. Mohd Anas Bin Ahmad, Dr. Mohd Syamsul Nasyriq Bin Samsol Baharin, Assoc. Prof. Dr. Ng Sha Shiong, Dr., Wan Maryam Binti Wan Ahmad Kamil

17. MALAYSIAN TORAY SCIENCE FOUNDATION (MTSF):
Title: Growth and characterization of InGaN thin films for solar cell application
Duration: 1 Year (01/01/2020 - 31/12/2020)
Source of Funding: Malaysia Toray Science Foundation
Amount of grant: RM 15,000.00
Project Leader: Mr. Ahmad Sauffi Bin Yusof
Co-researchers: Prof. Dr. Zainuriah Hassan, Assoc. Prof. Dr. Ng Sha Shiong

(c) University

1. USM Incentive Grant:
Title: Surface phonon polariton characteristics of InN and InGaN semiconductors
Duration: 1 Year (8/7/2008 - 7/7/2009)
Amount of grant: RM 5,000.00
Project Leader: Dr. Ng Sha Shiong

2. USM Research University (RU) Grant:
Title: Surface phonon and interface phonon polaritons characteristics of III-nitrides heterostructure systems
Duration: 2 Years (01/09/2009 - 31/08/2011)
Amount of grant: RM 99,549.20
Project Leader: Dr. Ng Sha Shiong
Co-researchers: Prof. Zainuriah Hassan, Assoc. Prof. Haslan Abu Hassan, Siti Khadijah Mohd Bakhori

3. USM Short term Grant:
Title: Fabrication and characterizations of porous ZnO thin films
Duration: 2 Years (01/03/2011 - 28/02/2013)
Amount of grant: RM 32,269.00
Project Leader: Dr. Ng Sha Shiong

4. USM Short term Grant:
Title: Surface phonon polariton characteristics of free-standing zinc-blende GaN and zinc-blende GaN thin film on GaAs substrate
Duration: 2 Years (01/12/2011 - 30/11/2013)
Amount of grant: RM 21,523.60
Project Leader: Dr. Ng Sha Shiong
Co-researchers: Dr. Norzaini Zainal

5. USM Research University (RU) Grant:
Title: Effects of crystal orientation on the surface and optical phonon characteristics of wurtzite crystals
Duration: 3 Years (15/07/2012 - 14/07/2015)
Amount of grant: RM 153,335.40
Project Leader: Dr. Ng Sha Shiong
Co-researchers: Prof. Zainuriah Hassan, Prof. Haslan Abu Hassan

6. USM Research University (RU) Grant:
Title: The fabrication and investigation of diamond/zinc oxide heterojunction
Duration: 2 Years (28/5/2008 - 27/5/2011)
Amount of grant: RM 145,153.68

Project Leader: Assoc. Prof. Saw Kim Guan
Co-researchers: Dr. Yam Fong Kwang, Prof. Zainuriah Hassan, Dr. Ng Sha Shiong

7. USM Research University (RU) Grant:
Title: Wide band gap GaN-based semiconductors for gas sensing applications
Duration: 2 Years (01/08/2010 - 31/10/2012)
Amount of grant: RM 244,990.00
Project Leader: Prof. Zainuriah Hassan
Co-researchers: Dr. Yam Fong Kwang, Dr. Ng Sha Shiong, Dr. Khalid Mutashar Omar, Mohd Anas Ahmad

8. USM Short term Grant:
Title: The fabrication of zinc oxide nanostructures on boron-doped diamond heterojunction for ultraviolet energy detection
Duration: 2 Years (01/12/2011 - 31/05/2014)
Amount of grant: RM 36,904.00
Project Leader: Assoc. Prof. Saw Kim Guan
Co-researchers: Dr. Yam Fong Kwang, Prof. Zainuriah Hassan, Dr. Ng Sha Shiong

9. USM Research University (RU) Grant:
Title: Fabrication and characterization of GaN-based heterostructures for energy efficient LED-based solid state lighting.
Duration: 3 Years (15/12/2012 - 14/12/2015)
Amount of grant: RM 189,500.00
Project Leader: Prof. Zainuriah Hassan
Co-researchers: Dr. Yam Fong Kwang, Dr. Ng Sha Shiong, Dr. Norzaini Zainal, En. Mohd Anas Ahmad, En. Yushamdan Bin Yusof

10. USM Bridging Fund:
Title: Microwave Assisted Growth Of Gallium Nitrade Thn Flims On Patterned Sapphire Substrate Prepared By Sol-Gel Spin Coating Technique
Source of Funding: Universiti Sains Malaysia
Duration of Project: 12 Months (01/12/2018 - 30/11/2019)
Amount of grant: RM 25,000.00
Project Leader: Assoc. Prof. Dr. Ng Sha Shiong
Co-Researchers: Prof. Zainuriah Hassan, Dr. Lee Hooi Ling

11. USM Research University (RUI) Grant:
Title: Epitaxial growth of indium-rich InGaN thin films using metalorganic chemical vapour deposition technique
Duration: 3 Years (01/08/2020 - 31/07/2023)
Amount of grant: RM 69,000.00
Project Leader: Dr. Ng Sha Shiong
Co-researchers: Dr. Lim Way Foong, Dr. Mohd Zamir Bin Pakhuruddin, Dr. Chang Wei Sea, En. Mohd Anas Ahmad.

11. PUBLICATIONS

2021:

1. Loo, C.C., **Ng, S.S.**, and Change, W.S. (2021) Photostrictive behavior as the piezo-phototronic effect in InGaN/GaN multiple quantum wells, **Nano Energy, 86, p.106085**.
2. Lee, Z.Y. and **Ng, S.S.** (2021). Fabrication and characterization of InN-based metal-semiconductor-metal infrared photodetectors prepared using sol–gel spin coated technique, **Functional Materials Letters**, **2021, 2151024 (9 pages)**.
3. Yusof, A.S., Hassan, Z., **Ng, S.S.**, Ahmad, M.A., Md Sahar, M.A.A.Z., Hamady, S., and Chevalier, C. (2021). The dependence of indium incorporation on specified temperatures in growing InGaN/GaN heterostructure using MOCVD technique, **Materials Research Bulletin, 137**, **p. 111176 (9 pages)**.
4. Vyas, S., **Ng, S.S.**, Kumar, A., Sharma, G., Jaiverdhan, Chandna, V.K., and Singh, G. (2021). Mid-infrared supercontinuum generation using low peak pump power in As38Se62 based chalcogenide photonic crystal fiber, **IOP Conf. Series: Materials Science and Engineering**, **1119, p. 012022**.

5. Elewah, I.A., Jasman, F., and **Ng, S.S.** (2020). Sum rate utilization of 4×4 multiple-input multiple-output (MIMO) visible light communication (VLC), **SPIE Proceedings Volume 11713, Next-Generation Optical Communication: Components, Sub-Systems, and Systems X**, **11713, 117130O-1 (8 pages).**

2020:

6. Elewah, I.A., Jasman, F., and **Ng, S.S.** (2020). Performance enhancement for a non-orthogonal multiple access system using 4×4 multiple-input multiple-output visible light communication. Optical Engineering. 59, p. 126104-1(11 pages).
7. Wang, T., and **Ng, S.S**. (2020) Multiple electromagnetically induced transparency-like effects of metal. **Applied optics. Applied optics, 59, pp. 7918-7924.**
8. **Ng, S.S.**, San Lee, H., and Lee, Z. Y. (2020). Sol–Gel Spin Coating Growth of Magnesium-Doped Indium Nitride Thin Films on Different Substrates. **Engineering Journal, 24(4), 285-294.**
9. Maizatul, H.A., and **Ng, S S**. (2020). Effects of Different Amounts of Surfactant on Characteristics of Sol-Gel Dip Coated Gallium Nitride Thin Films. **Journal of Physics: Conference Series 1535 (1) 012038.**
10. Nomaan, A.T., Ahmed, N. M., Al-Hardan, N. H., **Ng, S.S.**, and Aziz, A.A. (2020). UV Photodetector Based on p-NiO film/n-Si Heterojunction Prepared by Thermal Oxidation. **Journal of Physics: Conference Series, 1535 (1) 012001.**
11. Osman, S.A., **Ng, S.S.**, and Hassan, Z. (2020). Reactive Sputtering Growth of Indium Nitride Thin Films on Flexible Substrate Under Different Substrate Temperatures. **Journal of Physics: Conference Series, 1535 (1) 012029.**
12. Deng, J., Wang, T., **Ng, S S.**, and Liu, G. (2020). Reversible Circular Dichroism Induced by Energy Losses without Changing Chirality of Structure. **Annalen der Physik, 1900539.**

2019:

13. Hamady, S., Fressengeas, N., Chevallier, C., Kieffer, Q., Hassan, Z., Ahmad, M.A., Lim, W.F., and **Ng, S.S.** (2019). Development of novel thin film solar cells: Design and Numerical Optimisation. **Journal of Physical Science, 30, 199-205**.
14. Pauline Yew, P., Lee, S.C, Cheah, S.F., **Ng, S.S.,** and Abu Hassan, H. (2019). Infrared reflectance characterization of porous GaN thin films on sapphire substrate using factorized-Rayleigh model. **Optical Materials, 96, 109320**.
15. Sekaran, V., Mohd Amin, N., and **Ng, S.S.** (2019). Effects of microwave activation power on the structural properties of sol-gel spin coated magnesium doped gallium nitride thin films. **Materials Today: Proceedings, 16, 1673-1679**.
16. Tan, A.L., **Ng, S.S.**, and Abu Hassan, H. (2019). Influence of sulfurization temperature on the molybdenum disulfide thin films grown by thermal vapour sulfurization. **Materials Today: Proceedings, 17, 921-928.**
17. Tan, A.L., **Ng, S.S.,** and Abu Hassan, H. (2019). Influence of the substrate types on the molybdenum disulfide grown by thermal vapour sulfurization. **Superlattices and Microstructures, 129, 69-76**.
18. Tan, A.L., **Ng, S.S.**, and Abu Hassan, H. (2019). A systematic study on the growth of molybdenum disulfide with the carbon disulfide as the sulfurizing source. **Ceramics International, 45, 13701-13710.**
19. Tan, A.L., Abu Hassan, H., and **Ng, S.S.** (2019). Growth process of molybdenum disulfide thin films grown by thermal vapour sulfurization. **Journal of Materials Science: Materials in Electronics, 1-8.**
20. Lee, Z.Y., **Ng, S.S.,** Yam, F. K., and Hassan, Z. (2019). Growth Temperature Dependence of Sol-Gel Spin Coated Indium Nitride Thin Films. **Solid State Phenomena, 2019, Vol. 290,153-159.**
21. Fong, C.Y., Mohd Amin, N., **Ng, S.S.,** Yam, F.K., and Hassan, Z. (2019) Sol-gel derived gallium nitride thin films for ultraviolet photodetection, **Microelectronics International, 36, pp. 8-13**.
22. Mohd Amin, N. and **Ng, S.S.** (2019) Photodetector based on Mg-doped GaN thin films prepared by sol-gel spin coating, **Solid State Phenomena, 290, pp. 208-213**
23. Osman, S.A., and **Ng, S.S.** (2019) Comparative study of gas ratio on indium nitride thin films on flexible substrates prepared by reactive sputtering method, **Solid State Phenomena, 290, pp. 142-146**.
24. Mohd Isa, N.A., **Ng, S.S.** and Hassan, Z. (2019) Aluminium nitride thin films grown sol-gel spin coating technique **Solid State Phenomena, 290, pp. 137-141.**

2018:

25. Lee, Z.Y., **Ng, S.S.**, Yam, F.K. and Hassan, Z. (2018) Effects of coating cycles on spin-coated indium nitride thin films. **Surface Engineering, 34, pp. 554-561.**
26. Lee, H.S., **Ng, S.S.,** and Yam, F.K. (2018) Sol-gel spin coating growth of magnesium doped indium nitride thin films. **Vacuum, 155, pp. 16-22**.
27. Lee, H.S., **Ng, S.S.,** and Yam, F.K. (2018) Effect of nitrogen gas on the growth of magnesium doped indium nitride thin films via sol gel spin coating method. **IOP Conf. Series: Journal of Physics: Conf. Series 1083 (2018) 012061**.
28. Tan, A.K., **Ng, S.S.,** and Abu Hassan, H. (2018) Influence of oxalic acid concentrations on the growth of molybdenum disulphide, IOP Conf. Series: **Journal of Physics: Conf. Series 1083 (2018) 012060.**

29. Tan, A.L., **Ng, S.S.,** Abu Hassan, H. (2018). Influence of initial sulfur content in precursor solution for the growth of molybdenum disulfide. **IOP Conference Series: Journal of Physics, 995, 012060**.

2017:

30. Mohd Amin, N. and **Ng, S.S.** (2017) Low-cost growth of magnesium doped gallium nitride thin films by sol-gel spin coating method, **IOP Conference Series: Materials Science and Engineering 284, 012031.**
31. Lee, Z.Y., **Ng, S.S.**, and Yam, F.K. (2017) Growth mechanism of indium nitride via sol-gel spin coating method and nitridation process. **Surface and Coatings Technology**, **310, pp. 38-42.**
32. Lee, Z.Y., **Ng, S.S.**, and Yam, F.K. (2017) Influences of elevated thermal decomposition of ammonia gas on indium nitride grown by sol-gel spin coating method. **Materials Research Bulletin, 96, pp. 258-261.**
33. Mohd Amin, N. and **Ng, S.S.** (2017) An Investigation of GaN Thin Films on AlN Sapphire Substrate by Sol-Gel Spin Coating Method. **AIP Conference Proceedings**, **1901, p. 50006**.
34. Ab Hamid, M. A. Amin and **Ng, S.S.** (2017) Growth Gallium Nitride Thin Films by Sol-Gel Dip Coating Method. **AIP Conference Proceedings**, **1901, p. 20020**.
35. Lee, H.S., **Ng, S.S.,** and Yam, F.K. (2017) Doped Indium Nitride Thin Films by Sol-Gel Spin Coating Method. **AIP Conference Proceedings**, **1901, p. 20015**.
36. Mohd Isa, N.A., Ng, S.S., Hassan, Z. (2017). Growth and characterization of AlGaN thin films via sol-gel spin coating method. **Solid State Science and Technology, 25 (2), 1-7.**

2016:

37. Lee, Z.Y., Osman, S. A., **Ng, S.S.** (2016) Radio-frequency Sputtering Growth of Indium Nitride Thin Film on Flexible Substrate, **Materials Science Forum**, **846, pp. 650-656.**
38. Pauline Yew, Lee, S.C., **Ng, S.S.,** Yoon, T.L., Abu Hassan, H., and Chen W.L. (2016) Polarized infrared reststrahlen features of wurtzite inGaN thin film, **Materials Science Forum**, **846, pp. 614-619.**
39. Pauline Yew, Lee, S.C., **Ng, S.S.,** Yoon, T.L., Abu Hassan, H. (2016) Infrared optical responses of wurtzite $In_xGa_{1-x}N$ thin films with porous surface morphology, **Thin Solid Films**, 603**, pp. 334-341.**
40. Saw, K.G., Aznan, N.M., Yam, F. K., **Ng, S.S.,** and Pung, S. Y. (2016) Insights on semiconductor-metal transition in indium-doped zinc oxide from X-ray photoelectron spectroscopy, time-of-flight secondary ion mass spectrometry and X-ray diffraction. **AIP Conference Proceedings, 1733, p. 020033 (4 pages).**

2015:

41. Amirhoseiny, M., Hassan, Z., **Ng, S.S.** (2015) Effect of deposition conditions on properties of nitrogen rich-InN nanostructures grown on anisotropic Si (110). **Materials Science in Semiconductor Processing,** 35, pp. 216-221.
42. Cheah, S.F., Lee, S.C., **Ng, S.S.,** Yam, F.K., Abu Hassan, H., Hassan, Z. (2015) Attenuated total reflection studies of honeycomb nanoporous GaN thin films, **Advanced Materials Research, 1108, pp. 9-14.**
43. Cheah, S.F., Lee, S.C., **Ng, S.S.,** Yam, F.K., Abu Hassan, H., Hassan, Z. (2015) Luminescence evolution of porous GaN thin films prepared via UV-assisted electrochemical etching. **Journal of Luminescence**, **159, pp. 303-311.**
44. Cheong, Y.L., Yam, F.K., Ng, S.W., Hassan, Z., **Ng, S.S.**, Low, I. M. (2015) Fabrication of titanium dioxide nanotubes in fluoride-free electrolyte via rapid breakdown anodization, **Journal of Porous Materials, 22, pp. 1437-1444**.
45. Fong, C.Y., **Ng, S.S.,** Yam, F.K., Abu Hassan H., and Hassan, Z. (2015). Effects of nitridation temperature on characteristics of gallium nitride thin films prepared via two-step method. **Acta Metallurgica Sinica (English Letters), 28(3), pp. 362-366.**
46. Fong, C.Y., **Ng, S.S.,** Yam, F.K., Abu Hassan H., and Hassan, Z. (2015). Growth of GaN on sputtered GaN buffer layer via low cost and simplified sol-gel spin coating method**. Vacuum**, **119, pp. 119-122.**
47. Fong, C.Y., **Ng, S.S.,** Yam, F.K., Abu Hassan H. and Hassan, Z. (2015). An investigation of sol–gel spin coating growth of wurtzite GaN thin film on 6H–SiC substrate, **Journal of Crystal Growth**, **413, pp. 1-4.**
48. Fong, C.Y., **Ng, S.S.,** Yam, F.K., Abu Hassan H. and Hassan, Z. (2015). Spin coating deposition of *c*-oriented wurtzite gallium nitride thin film. **Applied Mechanics and Materials, 699, pp. 70-75.**
49. Kusrini, E., **Ng, S. S**., Harahap, Y., Yulizar, Y., Dianursanti, Arbianti, R., Pudjiastuti, A. R. (2015) Effects of monocarboxylic acids and potassium persulfate on preparation of chitosan nanoparticles. International **Journal of Technology, 1, pp. 11-21.**
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51. Mahdi, M.A., Hassan, Z., Hassan, J.J., **Ng, S.S.,** Kasim, S.J. (2015) Preparation and characterization of ZnxCd1−xS ternary alloys micro/nanostructures grown by thermal evaporation. **Materials Research Express,** 2, p. 016501 (8 pages).
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54. Pauline Yew, Lee, S.C., **Ng, S.S.,** Yoon, T.L., Abu Hassan, H., (2015) Theoretical studies on optical phonon and surface phonon polariton of wurtzite AlInN alloys, **Advanced Materials Research**, **1107, pp. 565-570.**
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2014:

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58. Amirhoseiny, M., Hassan, Z., **Ng, S.S.** (2014) Photoluminescence spectra of nitrogen-rich InN thin films grown on Si(110) and photoelectrochemical etched Si(110). **Vacuum**, **101, pp. 217-220.**
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5. **Ng, S. S.**, Lee, Z. Y., Fong, C. Y., Hassan, Z., Yam, F. K. (2021) A method for producing crystalline indium nitride thin film on a single crystal substrate, Malaysia Patent Granted PI 2016700714

13. RESPONSIBILITY IN THE DEPT OR UNIVERSITY

1. University Committee

- Officer during the elections for Student Representative Council, USM, 28 Jan 2010.
- Representative of USM Alumni for the Department, 2016 – 2018.
- Member of the USM Sustainability Policy Reevaluation Committtee: Sustainability Policy, 01 October 2020 – 31 December 2021.

2. Department Committee

- Member of School Board and Examination Board for School of Physics, 2008 – 2015.
- Member of Mentor System/Teaching and Learning Advisory Committee, 2008 – 2015.
- Member of Publication Committee, 2008 – 2013.
- Member of Communication and Technology Information Committee, 1 May 2010 – 31 Dec 2010.
- Member of Terminology Committee, 1 May 2010 – 2015.
- Member of Alumni, Industrial and Community linkages Committee, 02 Mar 2012 – 2015.
- Coordinator of Core Entrepreneurship course (WUS 101/2), 2008 - 2013.
- Member of Multimedia/Technical subcommittee for Public Lecture of Professor Appointment committee, 2008 – 2009.
- Member of Publicity subcommette for Public Lecture of Professor Appointment committee, 2010 – 2011.
- Exco Committee Member of INOR, 12 May 2015 – 31 December 2015.
- Chairman of the Information Technology committee, 29 Jun 2015 – 31 December 2015.
- Laboratory, ICT and Sustainable Committee (Jawatankuasa Makmal, ICT dan Kelestarian):
    - Member, 04 Jan 2016 – 14 April 2016.
    - Chairman, 15 April 2016 – 28 Feb 2017.
    - Member, 01 Mar 2017 – 31 Dec 2017.
- Member of the Postgraduate Study, Research and Publication Committee, 2015 – 31 Dec 2017.
- Member of the Consultancy, Linkages and Community Committee , 04 Jan 2016 – 31 Dec 2017.
- Chairman of the KPI, Innovation and Internationalization Committee, 04 Jan 2016 – 31 Dec 2017.
- Member of the Quotation Evaluation Committee of INOR, 01 Mar 2016 – 31 December 2018.
- Member of the Consultancy, Industry-Community Linkages, and Alumni Committee, 2018 – 31 December 2018.
- Member of the Technical Assessment Committee for the Tender of X-ray Diffraction System, INOR, 2018.
- Chairman of the Ad Hoc Committee on Data Collection for Auditing of Research University Performance (MyRA) INOR 2018, 2018.

- Board Member of INOR, 2015 – present.
- Member of the INOR Management Committee, 2016 – present.
- Member of the Graduate Studies Committee, 2018 – present.
- Chairman of the Research, Publication and KPI Committee, 2018 – present.
- Member of the Occupational Safety and Health Committee, 2018 – present.
- Member of the Innovation, Consultancy, and Sustainable Committee, 2019 – present.
- Member of the Alumni, Student and Lecturer Committee, 2019 – present.
- Member of the Internationalization, Industry and Community Linkages Committee, 2019 – present.
- Member of the Laboratory and ICT Committee, 2019 – present.
- Chairman of the Ad Hoc Committee on Preparation of the INOR's Annual Report (5 Years), 2019.
- Chairman of the Ad Hoc Committee on Data Collection for Auditing of Research University Performance (MyRA) INOR 2019, 2019.
- Member of the Micro-Credential Working Group, 2020 – present.
- Advisor for the INOR's Lab Accreditation Working Group, 2020 – present.
- Member of the INOR Administrative Committee, 2021-present.
- Member of the Human Resource Management, 2021-present.
- Member of Outcome Based Education (OBE), 2021-present.

14. COMMUNITY/INDUSTRY ENGAGEMENT

1. Contribution to the OSA Foundation Annual Campaign:
   - OSA Student Travel Grant Fund, 2009 & 2010.
   - Youth Science Education Fund, 2011.
   - General Fund, 2012, 2013, 2014, 2015, 2016.
   - Annual Fund, 2017, 2018, 2019.
2. Donation to the Materials Research Society Foundation:
   - MRS Education and Outreach program, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020.
3. Contribution for Society for Applied Spectroscopy:
   - SAS Friend, 2012, 2013, 2014, 2015.
   - Strategic Fund, 2018, 2019, 2020

4. Advisor for Universiti Sains Malaysia OSA Student Chapter, 01 April 2014 – present.
5. Session Chair,
   - Session Chair in Oral Session 5 : Growth. 5th Meeting of Malaysia Nitrides Research Group (MNRG), 01-02 December 2020, Virtual Conference
   - Session Chair in Symposium on Energy Storage, The 4th International Tropical Renewable Energy Conference 2019 (I-TREC), 14-16, August 2019, The Anvaya Beach Resorts, Bali, Indonesia.
   - Session Chair , The International Conference of Solid State Science and Technology (ICSSST 2017), November 14-15, 2017, Olive Tree Hotel, Penang, Malaysia.
   - Session Chair , Conference on Biomedical and Advanced Materials 2017 (Bio-CAM2017), 28-29 November 2017, Bayview Hotel, Langkawi, Kedah, Malaysia.
   - Session Chair , The 2nd Meeting of Malaysia Nitrides Research Group (MNRG), 8-9th June 2015, Auditorium Room, INFORMM, Universiti Sains Malaysia.
   - Session Chair , The 1st Meeting of Malaysia Nitrides Research Group (MNRG), 7th April 2014, Auditorium Room, INFORMM, Universiti Sains Malaysia.
   - Session Chair , The 2nd International, Innovation, Design And Articulation (*i*-Idea 2014), 19 Se– 21 Sep 2014, Akademi Koreksional Malaysia, Langkawi, Kedah, Malaysia.The 27th Regional Conference on Solid State Science & Technology (RCSSST27), 20 – 22 December 2013, The Magellan Sutera Resort, Kota Kinabalu, Sabah, Malaysia.

6. Rural Community Lighting Survey in Kampung Bujang, Bedong, Kedah, 14, 28 November, and 12 December 2015.
7. Penang Hui Yin Seh Metta Blood Donation Group, Member (Member No.: 12506), Since 2014.
8. Committe member of KESUREF (Physics Welfare, Sports and Recreational Club), School of Physics, USM, Academic Representative, 2012 - 2014.

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