

CURRICULUM VITAE

Prof. Dr. Sofyan A. Taya

Professor of Physics

BSc, MSc, PhD

Sofyan Taya has been classified as Top 2% researcher globally in Optics (Stanford University and global publishing house (Elsevier) - October 2021)

<https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/3>



Abdul Hameed Shoman Award for Young Arab Researchers Laureate, Jordan, 2012.

Position Title: Professor of Physics.

Work Address:

Physics Department, Islamic University of Gaza, Gaza, P.O. Box 108, Gaza Strip, Palestinian Authority.

Telephone: +970 8 2644400 Ext 1201 (Work)

Telephone: +970 8 2871441 (Home)

Fax No: +970 8 2644800

Mobile: +970 59 9304980

e-mail: staya@iugaza.edu.ps , tayasofyan@gmail.com

Homepages: <http://site.iugaza.edu.ps/staya/>
<https://orcid.org/0000-0001-5060-2534>
https://www.researchgate.net/profile/Sofyan_Taya
<https://scholar.google.com/citations?user=U4MuxawAAAAJ&hl=en>

Date of Birth: August 20, 1971, **Place of Birth:** Gaza-Palestine.

Education & Qualifications

- 2004-2007: Ph.D. in Theoretical Physics -Optoelectronics (Optical sensing) – Ain Shams University (Cairo - Egypt).
- 1998- 2000: M.Sc. in Theoretical Physics, Electromagnetic Waves (Optical Science) – (94%), Islamic University of Gaza (Gaza, Palestine).
- 1990-1994: B.Sc. in Physics (3.47 out of 4.00), Garyounis University (Benghazi, Libya).

Awards and Prizes:

1. I was selected among the top 2% of researchers around the world based on a study conducted by the global publishing house (Elsevier) and Stanford University in the United States (August 2021)
<https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/3>
2. Excellence Award in International Publishing for the year 2020, Islamic University of Gaza, Palestine, January 2021.
3. The Palestine Islamic Bank Prize for Scientific Research, (Excellence Award for Scientific Publishing at the national level) 2019.
4. The best published paper, Islamic University of Gaza, (scientific research week, 22-26 April 2017).
5. Soltana Nahar award, Islamic University of Gaza, 2017.
6. Islamic University Award for the best Scientific Research production in the years 2013-2016. (<http://research.iugaza.edu.ps/>)
7. Islamic University Award for the best Scientific Research production in the years 2013-2016. (<http://research.iugaza.edu.ps/>)
8. Abdul Hameed Shoman Award for Young Arab Researchers, Jordan, 2012. (<http://shoman.org/>)
9. Islamic University Award for Scientific Research, 2011 – 2012. (<http://research.iugaza.edu.ps/>)
10. Young Collaborator program award, International Centre for Theoretical Physics, ICTP, Italy, 2001.

Projects and Grants:

- 1- Study and design of Transverse Electric Air Laser (TEA LASER), under Islamic University research grant , 2009.
- 2- Dye Sensitized Solar Cells using natural dyes, under Islamic University research grant , 2011.
- 3- Thermoelectric Power Generation, under Islamic University research grant , 2012.
- 4- Thermoelectric Power Generation, under Islamic University research grant , 2013.
- 5- Developing of dye-sensitized solar cells using natural and synthetic dyes, under scientific research council grant, ministry of higher education, Ramallah, Palestine, 2013.
- 6- Fabrication and characterization of efficient dye-sensitized solar cells using natural dyes, under scientific research council grant, ministry of higher education, Gaza, Palestine, 2014.
- 7- Dye Sensitized Solar Cells using natural dyes and nano scale TiO₂ , under the Gulf Cooperation Council program for reconstruction of Gaza grant, 2014.
- 8- Adaptation of Gasoline Operated Generators Using Electrochemically Generated Hydrogen, under the Gulf Cooperation Council program for reconstruction of Gaza grant, 2014.
- 9- Fabrication of Quantum Dots Sensitized Solar Cells, under the Gulf Cooperation Council program for reconstruction of Gaza grant, 2014.

Research Interests:

Optical waveguides, Optical waveguide sensing, Ellipsometry, Electronics and Communications, Dye-sensitized solar cells, OLEDs, Nonlinear optics, Numerical Techniques and computational Physics, Electromagnetic waves, and applications of left-handed materials.

Teaching Experience (for BSc degree):

Quantum mechanics, Electricity and Magnetism, Mechanics, Thermodynamics, Mathematical Physics I, and Mathematical Physics II.

Teaching Experience (for MSc degree):

Mathematical Physics, Special Topics.

Membership:

- 1- American Physical Society (APS) member.
- 2- University teachers society- Gaza

Editorial Board:

- 1- International Journal of Renewable Energy Research, Editorial board member. <https://www.ijrer.org/ijrer/index.php/ijrer/about/displayMembership/6>
- 2- International Journal of Smart Grid (ijSmartGrid), Editorial board member. <http://www.ijsmartgrid.org/index.php/ijsmartgridnew/about/editorialTeam>
- 3- AL-MUKHTAR Journal of Sciences, Omar Al-Mukhtar University, Libya, <https://mjsc.omu.edu.ly/editorial-staff/>
- 4- Advanced Physics Research Reports, (The American publishing house),
- 5- Non-Metallic Material Science (Blipublishing com), June 2019 – present. <https://ojs.bilpublishing.com/index.php/nmms/about/editorialTeam>
- 6- Advanced Physics Research Reports (The American publishing house), Jan 2019 - present. <https://theamph.com/editorial-board-aprr.html>
- 7- American Journal of Optics and Photonics (Science publishing group), Nov 2018 - present. <http://www.opticsphotonics.org/editorialboard>
- 8- Modern Materials Science and Technology (Whoice Publishing), Nov 2018 - present. <http://ojs.whoice.com/index.php/mmst/about/editorialTeam>
- 9- SCIREA Journal of Physics (Science research association), Oct 2018 – present. <http://www.scirea.org/journal/EditorialBoard?JournalID=14000>
- 10- American Journal of Optics and Photonics (Science publishing group), March 2017 - March 2018. <http://www.opticsphotonics.org/editorialboard>
- 11- Current Electronics and Telecommunications (Bisco Med Publishing), <http://ojs.piscomed.com/index.php/CET/about/editorialTeam>

Referee to the international journals:

- 1- Applied optics,
- 2- Applied Physics A
- 3- Ceramics International
- 4- Chinese Optics Letters OSA

- 5- Cryogenics
- 6- Energy Sources Part A Recovery Utilization and Environmental Effects
- 7- European Physical Journal D
- 8- IEEE Sensors Journal
- 9- IEEE Transactions on Magnetics
- 10- IETE Journal of Research
- 11- Indian Journal of Physics
- 12- Industrial & Engineering Chemistry Research
- 13- International Journal of Energy Research
- 14- International Journal of Modern Physics B
- 15- International Journal of Physical Sciences
- 16- International Journal of Renewable Energy Research
- 17- Journal of Computational electronics
- 18- Journal of Materials Research and Technology
- 19- Journal of Nanoelectronics and Optoelectronics
- 20- Journal of optics IOP
- 21- Journal of Optoelectrical Nanostructures
- 22- Optik
- 23- Journal of the Optical Society of America B
- 24- Microwave and optical technology letters
- 25- Optica Applicata
- 26- Optical and Quantum Electronics
- 27- Optical Materials
- 28- Optical Review
- 29- Optics and Lasers in Engineering
- 30- Optics Express
- 31- Photonics and Nanostructures - Fundamentals and Applications
- 32- Photonic sensors
- 33- Opto-Electronics Review
- 34- Physica B: Physics of Condensed Matter
- 35- PIER
- 36- Physica E Low dimensional Systems and Nanostructures
- 37- Transactions on Microwave Theory and Techniques

Professional Experience:

- | | |
|--------------------|--|
| Feb 2021 – Present | Visiting Professor, Department of Electrical and Computer Engineering, University of Waterloo. 200 University avenue west, Waterloo, Ontario, Canada. N2L 3G1. |
| 2018-Present | Professor of Physics, Physics Department, Islamic University of Gaza (IUG), Gaza, Gaza Strip, Palestine |

2013-2017	Associate Professor of Physics, Physics Department, Islamic University of Gaza (IUG), Gaza, Gaza Strip, Palestine
2008-2012	Assistant Professor of Physics, Physics Department, Islamic University of Gaza (IUG), Gaza, Gaza Strip, Palestine
2001-2005	Instructor, Physics Department, Islamic University of Gaza (IUG), Gaza, Gaza Strip, Palestine
1994-2000	Teaching assistant, Physics Department, Islamic University of Gaza (IUG), Gaza, Gaza Strip, Palestine

Leadership Experience:

Aug 2019-Aug 2020	Assistant of Vice President for Academic Affairs, The Islamic University of Gaza (IUG), Gaza, Gaza Strip, Palestine.
Aug 2015- Aug 2019	Dean of admission and registration, The Islamic University of Gaza (IUG), Gaza, Gaza Strip, Palestine.
Aug 2013-Aug 2015	Assistant of Vice President for Academic Affairs, The Islamic University of Gaza (IUG), Gaza, Gaza Strip, Palestine.
Sept 2011-Aug 2013	Vice dean of admission and registration, The Islamic University of Gaza (IUG), Gaza, Gaza Strip, Palestine.
Sept 2008-Sept 2011	Head of Physics Department, The Islamic University of Gaza (IUG), Gaza, Gaza Strip, Palestine.

Training Courses and Workshops:

1. UKM-Flinders Nanotechnology Summer School, Universiti Kebangsaan Malaysia (UKM), Malaysia, 24 – 27 June 2013.
2. Training course in Nanoscience and Nanotechnology, Beni-suef University, Egypt, 16-18 April 2013.
3. Summer School on the Dynamical systems, International Centre for Theoretical Physics, ICTP, Italy, 30 July – 17 August 2001.
4. Summer School on low dimensional quantum systems, International Centre for Theoretical Physics, ICTP, Italy, 16-27 July 2001.
5. WebCT Course (Using WebCT to publish courses on the internet), Islamic University of Gaza, Palestine, 2-9 September 2000.

Conference Committees:

- 1- International Scientific Committees, 2022 5th International Conference on Applied Mathematics, Modeling and Simulation (AMMS2022), Shanghai, China, April 25-26, 2022, <http://www.5th-amms.org/com.html>.
- 2- International Scientific Committees: 2021 4th International Conference on Applied Mathematics, Modeling and Simulation (AMMS2021), Guangzhou, China, September 17-18, 2021, <http://www.4th-amms.org/index.html>.
- 3- Organizing Committee Member: 2nd International Conference on Photonics and Opto Electronics, Singapore City, Singapore, November 25-26, 2020. <https://www.meetingsint.com/conference/photonics/ocm>
- 4- Organizing Committee Member: 4th International Conference On Atomic and Molecular Physics, Singapore City, Singapore, October 16-17, 2019. <https://www.meetingsint.com/conferences/molecularphysics/ocm>
- 5- Scientific committee member: 11th International Scientific conference on Applied Sciences and Engineering, Hotel Istana Kuala Lumpur City Centre, Kuala Lumpur, Malaysia, September 3-4, 2016. http://www.scihost.org/?ic=details&id=20&info=sr_comittee
- 6- Scientific committee member: 10th International Scientific Conference on Applied Sciences and Engineering, Lebua Hotels and Resorts, Thailand, August 27-28, 2016. http://www.scihost.org/?ic=details&id=20&info=sr_comittee
- 7- Scientific committee member: 9th International Scientific Conference on Applied Sciences and Engineering, Istanbul, Turkey, June 6-7, 2016. http://www.scihost.org/?ic=details&id=20&info=sr_comittee
- 8- Scientific committee member: 8th International Scientific conference on Applied Sciences and Engineering, Hotel Istana Kuala Lumpur City Centre, Kuala Lumpur, Malaysia, April 2-3, 2016. http://www.scihost.org/?ic=details&id=20&info=sr_comittee
- 9- Scientific committee member: 7th International Scientific conference on Applied Sciences and Engineering, Flora Grand Hotel, Dubai, United Arab Emirates, February 27-28, 2016. http://www.scihost.org/?ic=details&id=20&info=sr_comittee
- 10- Scientific committee member: The Fifth International Conference for Science and Development, Faculty of Science, Islamic University of Gaza, November 19-20, 2013. <http://fifthconf.iugaza.edu.ps/ar/%d9%84%d8%ac%d8%a7%d9%86%d8%a7%d9%84%d9%85%d8%a4%d8%aa%d9%85%d8%b1.aspx>
- 11- Scientific committee member: Third International Conference on Energy and Environmental Protection in Sustainable Development, ICEEP III, Palestine Polytechnic University, October 9-10, 2013. <http://iceep.ppu.edu/scientific-committee>
- 12- Organizing committee member: Nanotechnology in Palestine (scientific day), Islamic University of Gaza, November 13, 2012. <http://www.iugaza.edu.ps/for-download/nano/html/index.html>

- 13- Organizing committee member: The Fourth International Conference for Science and Development, Faculty of Science, Islamic University of Gaza, March 22-23, 2010.
<http://www.iugaza.edu.ps/en/Confereces/ConferencePages.aspx?PageID=325&ConfId=246>
- 14- Head of Organizing committee: The Second Physics Symposium, Physics Department, Islamic University of Gaza, November 4, 2009
- 15- Organizing committee member: The Third International Conference for Science and Development, Faculty of Science, Islamic University of Gaza, March 7-8, 2009.
<http://www.iugaza.edu.ps/en/Confereces/ConferencePages.aspx?PageID=0&ConfId=41>
- 16-

Skills and Computer Experience:

Fortran, Numerical Analysis, Maple, Mathcad, WebCT, Microsoft office programs (excel, word, power point, ...).

M.Sc. Students Supervised:

- 1- Hani Kullab, New slab waveguide structures as optical sensors, 2010.
- 2- Anass A. Alkanao, Characterization of different sample using rotating polarizer and analyzer ellipsometry with fixed compensator, 2011.
- 3- Hatem .S. Elghamri, Dye-sensitized solar cell using ZnO as a semiconducting layer, 2012.
- 4- Ahed M. EL-Afgani, Electrical and Optical Properties of Organic Diodes, 2012.
- 5- Mohammed K. Elhabbash, Reflection and transmission from a multilayer structure with conducting Interfaces, 2012.
- 6- Mahmoud B. M. Abuiriban, Dye-sensitized solar cell using natural dyes, 2012.
- 7- kamal .S. ElRefi, Dye-sensitized solar cell using TiO₂ as a semiconducting layer, 2012.
- 8- Sameh S. Mahdi, Novel Slab Waveguide Optical Sensors, 2013.
- 9- Mohammed A. Al-Amassi, Assessment of Health Risk from X-ray Radiation in Radiology Departments in Gaza Strip Health Services, 2015.
- 10- Anwar A. Jarada, Slab Waveguide Optical Sensors Using Negative Index Materials, 2015.
- 11- Islam M. Radwan, Dye sensitized solar cells based on natural dyes extracted from plant roots, 2015.
- 12- Mohammed S. Al-Qrinawi, The influence of copper-phthalocyanine layer, heat treatment, and Electric field on the performance of Poly (9-Vinylcarbazole) /Rhodamine B /Pb Organic Light Emitting Diodes, 2015.
- 13- Somaia A. Shaheen, Optical Sensors Based on Photonic Crystal, 2015.
- 14- Hussein Amen Al Muggier, Dye-sensitized solar cell using natural dyes extracted from dried flowers, 2015.
- 15- Almohanad M. Dawoud, Natural pigments extracted from plant leaves as photosensitizer for dye-sensitized solar cells, 2015.

- 16- Alaa Z. Kullab, Characterization of Dye-sensitized solar cells sensitized with the extract of *Trigonella foenum-graecum* seeds, 2015.
- 17- Alaa Naji Abdelhadi Abu Hilal, Characteristics of propagation of electromagnetic waves in slab waveguide structures comprising chiral and left-handed materials, 2016.
- 18- Abdallah AL-Juaidi, Properties of graded index thin film waveguides comprising left-handed materials, 2016.
- 19- Dalal A. Hashem, Effect of adding nano layers on the performance of solar cells sensitized with eosin Y and its derivatives, 2017.
- 20- Amro A. El-Moghraby, Dye-sensitized solar cell using Food Coloring dyes (Erythrosine E127 and Tartrazine E 102), 2017.
- 21- Somya K. Abu Oun, Investigation of solar cells sensitized with hematoxyline, 2017.
- 22- Noor E. Al-Ashi, Optical Sensors Based on Cylindrical Optical Fibers and Planer Waveguides, 2018.
- 23- Mariam K. S. Mezyed, Characteristics of a graded index core layer slab waveguide, 2019.
- 24- Mariam A. Abu Tailkh, Optical sensors based on photonic crystal having a superconducting layer, 2020.
- 25- Safaa M. A. Alqrinawi, Properties of a ternary photonic crystal having a superconducting layer, 2021.
- 26- Mohammed S. Baraka, Investigation of the time evolution of reconnection region from Magnetospheric Multiscale (MMS) data, 2021
- 27- Malek G. Daher, Biosensors based on photonic crystals for detection of cancerous cell, 2021
- 28- Mohammed M. Mamlouk, Properties of a binary and a ternary photonic crystal: A comparative study, 2021
- 29- Ahmed M. Radwan, Biophotonic sensors based on ternary and quaternary photonic crystals for the detection of creatinine concentration in blood serum, 2021.
- 30- Heba S. S. Abu Asad, Optical sensors based on photonic crystals for the detection of two buffers of microorganisms
- 31- Noor Tabaza,
- 32- Sheren Masry,
- 33- Dana Alhams,
- 34- Nael Doghmosh

Consulting Experience

MSc Students Examined

- 1- Emad M. Mehjez, M.Sc. (2008), "Metamaterial optical waveguide sensors", Physics Department, Islamic University of Gaza.
- 2- Hussam S. Musleh, M.Sc. (2009), "Investigation of the effect of various dyes on OLEDs Electroluminescence", Physics Department, Islamic University of Gaza.
- 3- Ibtisam M. Abo Ireban, M.Sc. (2011), "Study of transmission lines and Schottcky diode", Physics Department, Islamic University of Gaza.
- 4- Dena M. El-Amassi, M.Sc. (2013) "Study of an optical sensor having left-handed materials. Physics Department, Islamic University of Gaza.

- 5- Abd Allah Saada, M.Sc. (2013) "Properties of optical fibers containing superconducting and left-handed materials". Physics Department, Islamic University of Gaza.
- 6- Lobad Azhar, M.Sc (2014), "Introducing a new unit on Nanotechnology in the curriculum of science for the fourth class".
- 7- Zana Mosa, M.Sc. (2017) "Effect of zinc ions on electrical properties of lithium spinal ferrite". Physics Department, Islamic University of Gaza.
- 8- Ilham Al-Hello, M.Sc. (2017) "Effect of zinc ions on magnetic properties of lithium spinal ferrite". Physics Department, Islamic University of Gaza.
- 9- Heba Abukhousa, M.Sc. (2019) "The stability of Frohlich bipolaron in spherical quantum dots in a confining parabolic potential well", Physics Department, Islamic University of Gaza.
- 10- Yosra Matar, M.Sc. (2019), Physics Department, Islamic University of Gaza.
- 9- Wajdy F. Rajab, M.Sc. (2019) "Preparation of Nanostructured Metal Oxide Electrode for Supercapacitor applications", Physics Department, Al-Azhar University- Gaza.
- 10- Mohammed R. Karmoot, M.Sc. (2020) Design and Simulation of solar cell structure containing conductive nanoparticles, Physics Department, Al-Azhar University- Gaza.

PhD Students Examined

- 1- Wan Almaz Dhafina Binti Che Wan Hhmad, PhD. (2020) "", "The sensitization effect of natural anthocyanin and chlorophyll dyes on zinc oxide based dye-sensitized solar cells performances", Physics Department, Faculty of Ocean Engineering Technology and Informatics, Universiti Malaysia Terengganu.

Book Chapters:

- 1- Divya Sharma, Shivam Singh, Anurag Upadhyay, **Sofyan A. Taya**, "Flexi-Grid Technology: A Necessity for Spectral Resource Utilization" Book chapter (In Press) Publisher: CRC press Taylor and Francis.
- 2- Shivam Singh, Anurag Upadhyay, Divya Sharma, N.Ayyanar, B. K. Tripathi, Sofyan A. Taya, Book title: Nanoscale Memristor Device and Circuits Design. Chapter title: Photonic Crystal Fiber (PCF) Based SPR Biosensor: An Overview to its Multi-domain Applications. (In Press) Publisher: Elsevier

Publications:

ORCID iD: **0000-0001-5060-2534**

Scopus ID : **6701381761**

Researcher ID (Web of Science Researcher ID) : **G-4779-2013**

Google Scholar Citations: **2235**

h-index: **30**

i10-index: **69**

Google scholar Webpage:

<https://scholar.google.com/citations?user=U4MuxawAAAAJ&hl=en>

ResearchGate webpage:

RG Score: **35.44**

<https://www.researchgate.net/profile/Sofyan-Taya-2/research>

1. **Sofyan A. Taya**, and M.M. Shabat, "A novel technique for one-dimensional scattering from Dirac Comb", IC/IR/2001/15, ICTP, Trieste, Italy, 2001.
2. M.M.Shabat, and **Sofyan A. Taya**, "A new matrix formulation for one-dimensional scattering in Dirac Comb, Electromagnetic Approach", Physica Scripta, Vol. 67, No. 2, 147-152, 2003.
<https://doi.org/10.1238/Physica.Regular.067a00147>
3. **Sofyan A. Taya** and M.M.Shabat, "A new technique for one-dimensional scattering in Dirac Comb", IUG Journal of Natural Studies,, vol.11, no.1, 1-14, 2003.
4. **Sofyan A. Taya**, M.M.Shabat, and D.Jäger "Design of symmetric nonlinear homogenous waveguide sensors", Photonic Europe, SPIE Event, Europe, Strasbourg, France, April 3-7, 2006.
5. M.M. Shabat, **Sofyan A. Taya** and M.M. Abadla, "Modelling of Nonlinear integrated optical waveguide sensors", The First *optETH* Winter School on Optical Sciences, ETH Zurich, Switzerland, February 26 – March 3, 2007.
6. M.M.Shabat, **Sofyan A. Taya** and M.M. Abadla, "Modelling and Simulation of Nonlinear Integrated Optical Waveguide Sensors", The First Sharjah International Conference on Nanotechnology and its Applications, Sharajeh, U.A.E, April 10 - 12, 2007.
7. **Sofyan A. Taya**, M.M.Shabat, M.M.Abadla, "Analysis of the sensitivity of integrated nonlinear optical evanescent wave sensors", the SPIE European Symposium on Optics and Optoelectronics, the Prague Congress Ctr , Czech Republic, April 16-19, 2007.
8. Mohammed M. Shabat, Hala Khalil, **Sofyan A. Taya**, and Mazen M. Abadla, "Analysis of the sensitivity of self-focused nonlinear optical evanescent waveguide sensors", International Journal of Optomechatronics, Vol. 1, No. 1, 284-296, 2007. DOI: 10.1080/15599610701548886
9. Hala M. Khalil , Mohammed M. Shabat, **Sofyan A. Taya**, and Mazen M. Abadla, "Nonlinear optical waveguide structure for sensor application: TM case",

- International Journal of Modern Physics B, Vol. 21, No. 30, 5075-5089, 2007.
<https://doi.org/10.1142/S0217979207038216>
10. **Sofyan A. Taya**, M. M. Shabat, M. M. Abadla, and H. Khalil, "Analysis of the sensitivity of integrated nonlinear optical evanescent wave sensors". Proceedings Of SPIE vol. 6585, Optical Sensing Technology and Applications, Francesco Baldini, Jiri Homola, Robert A. Lieberman, Miroslav Miler, Editors, 65851A-1-65851A1-9, May 16, 2007. http://spie.org/x648.html?product_id=721569
 11. **Sofyan A. Taya**, and M. M. Shabat, "Nonlinear planar waveguide sensors using metamaterials", International conference on Functional Materials, Crimea, Ukraine, October 1-6, 2007. <http://www.icfm.crimea.edu/progr.htm>
 12. **Sofyan A. Taya**, and M.M.Shabat, "Simulation analysis of TM nonlinear asymmetrical optical waveguide sensors", 11th International Symposium on Microwave and Optical Technology, Monte Prozio Catone, Rome, Italy, December 17-21, 2007.
 13. Mohammed M. Shabat and **Sofyan Taya** "Characteristics of nonlinear waveguide sensors using left-handed", SPIE Europe Photonics Europe, Strasbourg, France, April 7-10, 2008. <http://www.azouk.com/213302/Advance-Programme/>
 14. **Sofyan A. Taya**, Mohammed M. Shabat, Hala Khalil, and Dieter S. Jäger, "Theoretical Analysis of TM Nonlinear Asymmetrical Waveguide Optical sensors", Sensors and Actuators A: Phys., Vol. 147, No. 1, 137-141 (2008).
<https://doi.org/10.1016/j.sna.2008.05.002>
 15. **Sofyan A. Taya**, Mazen M. Abadla, and Mohammed M. Shabat, " Characteristics of Nonlinear Integrated Optical Waveguide Sensors" The 6th International Conference on Photonics, Devices and Systems, Photonics Prague 2008, Czech Republic, August 27-29, 2008. http://prague2008.photonics-czsk.org/PHOTONICS_Prague_2008_Program.pdf
 16. M. M. Shabat and **Sofyan A. Taya**, "Sensing characteristics of optical integrated waveguide sensors with metamaterials", Scientific Research Outlook & Technology Development in the Arab World (SRO5), Scientific Innovation and Sustained Development, Fez, Morocco, October 25-30, 2008.
 17. **Sofyan A. Taya**, M.M. Shabat, H. Khalil, "Enhancement of Sensitivity in optical sensors using left-handed materials" Optik-International J. for Light and Electron Optics, Vol. 120, No. 10, 504-508 (2009).
<https://doi.org/10.1016/j.ijleo.2007.12.001>
 18. **Sofyan A. Taya**, and Mohammed M. Shabat, " Nonlinear Slab waveguide optical sensor using double-negativity materials", Micro- to Nano-Photonics II- ROMOPTO 2009 conference, 31 August - 3 September 2009.
 19. Mohammed M. Shabat and **Sofyan Taya** "Double metamaterials as a guiding layer for optical sensing applications", SPIE Europe Microtechnologies for the new millennium, Dresden, Germany, May 4-6, 2009.
<http://spie.org/Documents/ConferencesExhibitions/Europe-Microtechnologies-New-Millennium-2009%20Advance.pdf>
 20. **Sofyan A. Taya**, Mazen M. Abadla, and Mohammed M. Shabat, "Characteristics of multilayer slab waveguide structure with a left-handed material", International Commission for Optics- Topical Meeting on Emerging Trends and Novel Materials in Photonics", Delphi, Greece, October 7-9, 2009.
<http://biblio.ugent.be/input/download?func=downloadFile&fileOID=858703>

21. **Sofyan A. Taya**, Mohammed M. Shabat, and Hala Khalil, "Nonlinear Planar Asymmetrical Optical Waveguides for Sensing Applications", International J. for Light and Electron Optics, Optik, Vol. 121, No. 9 860-865 (2010). <https://doi.org/10.1016/j.ijleo.2008.09.036>
22. M.M.Shabat, **Sofyan A. Taya**, and M.M.Abadla, "Characteristics of multilayer slab waveguide structure with a double negatively materials ", Meta'10 Conference on Metamaterials, Photonics crystals, Plasmonics, Cairo, February 22 -25, 2010. <http://meta10.lgep.supelec.fr/index.php/meta/META10/paper/viewPaper/131>
23. **Sofyan A. Taya** and M.M.Shabat, "Sensitivity enhancement in optical waveguide sensors using metamaterials", Meta'10 Conference on Metamaterials", Photonics crystals, Plasmonics, Cairo, Egypt , February 22 -25, 2010. <http://meta10.lgep.supelec.fr/index.php/meta/META10/paper/view/101>
24. Sofyan A. Taya, Mohammed M. Shabat, Review of nonlinear slab waveguide sensors, The 4th Conference Integrated Optics - Sensors, Sensing structures and methods, Poland, March 1-3, 2010. <http://ios.polsl.pl/files/2010/abstracts/Taya.pdf>
25. Taher M. El-Agez, Ahmed A. El Tayyan, and **Sofyan A. Taya**, "Rotating polarizer-analyzer scanning ellipsometer", Thin solid films, vol. 518, No. 19, 5610-5614, 2010. doi:10.1016/j.tsf.2010.04.067
26. Taher El-Agez, **Sofyan Taya**, and Ahmed El Tayayn, "A polynomial approach for reflection, transmission, and ellipsometric parameters by isotropic stratified media ", Optica Applicata, Vol.40, No.2, 501-510, 2010.
27. **Sofyan A. Taya**, Hala Khozondar, Mohammed M. Shabat , and Emad M. Mehjez, "Characterization of nonlinear optical integrated waveguide sensors with metamaterials", International conference on mathematical methods in electromagnetic theory, Ukraine, September 6-8, 2010.
28. Mazen M. Abadla, **Sofyan A. Taya**, and Mohammed M. Shabat, "Characteristics of Metamaterial Multilayer Waveguide Slab Structure", Fourth International Congress on Advanced Electromagnetic Materials in Microwaves and Optics, Karlsruhe, Germany, September 13-16, 2010. http://congress2010.metamorphose-vi.org/index.php?option=com_svisor&task=showScheduleSvisor
29. **Sofyan A. Taya** and Taher M. El-Agez, "Asymmetrical slab waveguide sensor based on amplified phase change due to multiple total internal reflections", The First International Conference on Basic and Applied Sciences (ICBAS 2010), Al Azhar University, Gaza, Palestine, October 10-12, 2010.
30. Taher M. El-Agez, Ahmed A. Tayyan, and **Sofyan A. Taya**, "A novel rotating polarizer-analyzer spectroscopic ellipsometer ", The First International Conference on Basic and Applied Sciences (ICBAS 2010), Al Azhar University, Gaza, Palestine, October 10-12, 2010.
31. Hussam S. Musleh, Taher M. El-Agez, Ahmed A. Tayyan, and **Sofyan A. Taya**, "Investigation of the effect of two dyes on organic light emitting diodes electroluminescence", The First International Conference on Basic and Applied Sciences (ICBAS 2010), Al Azhar University, Gaza, Palestine, October 10-12, 2010.
32. Mazen Abadla, **Sofyan A. Taya**, and M. Shabat "Characteristics of left-handed multilayer slab waveguide structure", The First International Conference on Basic

- and Applied Sciences (ICBAS 2010), Al Azhar University, Gaza, Palestine, October 10-12, 2010.
33. Hussam S. Musleh, Taher M. El-Agez, Ahmed A. Tayyan, and **Sofyan A. Taya**, "Investigation of the effect of two dyes on organic light emitting diodes electroluminescence", J. of Al Azhar University-Gaza, vol. 12, 75-80, 2010.
 34. Taher M. El-Agez and **Sofyan A. Taya** "A Fourier ellipsometer using rotating polarizer and analyzer at a speed ratio 1:1", Journal of Sensors, vol. 2010, Article ID 706829, 7 pages (2010), doi:10.1155/2010/706829
 35. Taher M. El-Agez and **Sofyan A. Taya** "An extensive theoretical analysis of the 1 : 2 ratio rotating polarizer–analyzer Fourier ellipsometer", Physica Scripta, Vol. 83, No. 2, 7 pages, 025701, (2011). doi:10.1088/0031-8949/83/02/025701
 36. Taher El-Agez, and **Sofyan A. Taya** "Development and construction of rotating polarizer analyzer ellipsometer", Optics and lasers in engineering, Vol. 49, 507–513 (2011). doi:10.1016/j.optlaseng.2011.01.005
 37. **Sofyan Taya**, and Taher El-Agez, "Ellipsometry of anisotropic materials: a new efficient polynomial approach", International J. for Light and Electron Optics, Optik, Vol. 122, No. 8, 666–670 (2011). <https://doi.org/10.1016/j.ijleo.2010.05.002>
 38. Mazen A. Abadla, and **Sofyan A. Taya**, "Characteristics of left-handed multilayer slab waveguide structure", IUG Journal of Natural Studies, Vol. 19, No. 1, 57-70, 2011.
 39. Taher El-Agez, **Sofyan A. Taya**, and Ahmed El Tayayn, "An improvement of scanning ellipsometer by rotating a polarizer and an analyzer at a speed ratio of 1:3", International Journal of Optomechatronics, Vol. 5, 51-67, 2011. DOI: 10.1080/15599612.2011.559685
 40. **Sofyan Taya**, and Taher El-Agez, "Comparing optical sensing using slab waveguides and total internal reflection ellipsometry", Turkish J. of Physics, Vol. 35, No. 1, 31-36, 2011. doi:10.3906/fiz-1001-2
 41. Taher El-Agez and **Sofyan Taya**, "Theoretical spectroscopic scan of the sensitivity of asymmetric slab waveguide sensors ", Optica Applicata, Vol. 41, No. 1, 89-95, 2011.
 42. **Sofyan A. Taya** and Mohammed M. Shabat "Sensitivity enhancement in optical waveguide sensors using metamaterials" Applied Physics A, Vol. 103, No. 3, 611-614 (2011). DOI: 10.1007/s00339-011-6406-0
 43. **Sofyan A. Taya** and Taher M. El-Agez, "A reverse symmetry optical waveguide sensor using a plasma substrate ", J. of Optics, Vol. 13, No. 7, 075701 (6pp), 2011. doi:10.1088/2040-8978/13/7/075701
 44. Taher M. El-Agez and **Sofyan A. Taya** "A Fourier ellipsometer by rotating polarizer and analyzer at a speed ratio 1:1", Inventi Rapid: Sensing & Actuation, Vol. 2011, No. 2, 2011.
 45. Taher El-Agez, Ahmed A. Tayyan, **Sofyan Taya**, and Hussam S. Musleh, "Characteristics of poly(9-vinylcarbazole) and 8-hydroxyquinoline aluminum using a homemade rotating analyzer ellipsometer", IUG Journal of Natural Studies, Vol. 19, No. 2, 163-174, 2011.
 46. Taher M. El-Agez, David M. Wieliczka, Chris Moffitt, and **Sofyan A. Taya**, "Spectroscopic ellipsometry time study of low temperature plasma-polymerized

- plain trimethylsilane thin films deposited on silicon", *Physica Scripta*, Vol. 84, No. 8, (2011) 045302 (5pp).
doi:10.1088/0031-8949/84/04/045302.
47. Taher M. El-Agez, David M. Wieliczka, Chris Moffitt, and **Sofyan A. Taya**, "Aging of oxygen treated trimethylsilane plasma polymerized films using spectroscopic ellipsometry", *Journal of Atomic, Molecular, and Optical Physics*, Vol. 2011, Article ID 295304, 6 pages, 2011.
doi:10.1155/2011/295304.
 48. **Sofyan A. Taya**, Taher M. El-Agez, and Anas A. AlKano, "Thin film characterization using rotating polarizer analyzer ellipsometer with a speed ratio 1:3", *Journal of Electromagnetic Analysis and Applications*, Vol. 3, No. 9, 351-358, 2011. DOI: [10.4236/jemaa.2011.39056](https://doi.org/10.4236/jemaa.2011.39056)
dOI: 10.4236/jemaa.2011.39056.
 49. Taher El-Agez, and **Sofyan A. Taya** "Characterization of SiO₂ thin film using rotating polarizer analyzer ellipsometer ", *International Journal of Microwave and Optical Technology (IJMOT)*, Vol. 6, No. 6, 363-371, 2011.
 50. Khitam Y. El-wasife and **Sofyan A. Taya**, Guided waves in a left-handed material guiding film with a ferrite cladding, *Instanci Journal of Physics*, Vol.1, No. 1, 21-31 (2011).
 51. Mazen Abadla, **Sofyan A. Taya**, and M. Shabat "Four-layer slab waveguide sensors supported with left-handed materials", *Sensor letters*, Vol. 9, No. 5, 1823-1829, 2011. DOI: <https://doi.org/10.1166/sl.2011.1729>
 52. **Sofyan A. Taya**, Hala Khozondar, Mohammed M. Shabat, and Emad M. Mehjez, "Transverse magnetic mode nonlinear waveguide slab optical sensor utilizing left-handed material", *Functional materials*, Vol. 18, No. 4, 512 – 516 (2011).
 53. Hala J. El-Khozondar, **Sofyan A. Taya**, Mohammed M. Shabat, Emad M. Mehjez, "Lossy double negative guiding layer optical sensors", *Opto-Electronics Review*, Vol. 19, No. 3, 277-281, 2011. DOI: 10.2478/s11772-011-0031-5
 54. **Sofyan A. Taya** and Taher M. El-Agez, "A new scanning fourier ellipsometer", *First Euro-Mediterranean Meeting on Functionalized Materials EMM-FM 2011*, Sousse, Tunisia, March 17-21, 2011.
 55. Taher El-Agez, **Sofyan Taya**, and Ahmed El Tayayn, "Scanning Ellipsometer by Rotating Polarizer and Analyzer", *Progress In Electromagnetics Research Symposium, PIERS 2011 in Marrakech, Morocco March 20-23, 2011*.
 56. Hala Khozondar, **Sofyan A. Taya**, M. M. Shabat, and E. M. Mehjez, "TM Nonlinear Waveguide Slab Optical Sensor Utilizing Left-handed Materials", *Progress In Electromagnetics Research Symposium, PIERS 2011 in Marrakech, Morocco March 20-23, 2011*.
 57. **Sofyan A. Taya**, Mazen M. Abadla, Eman J El-Farram, and Mohamed M. Shabat, "Planar slab waveguide sensor with a left-handed material substrate", *The Second International Conference of Applied & natural Sciences (ICNAS-2)*, Al-Aqsa University, Gaza, Palestine, May 30-31 2011.
 58. **Sofyan A. Taya**, and Taher M. El-Agez, "Fabry-Perot resonator as an optical sensor", *The Second International Conference of Applied & natural Sciences (ICNAS-2)*, Al-Aqsa University, Gaza, Palestine, May 30-31 2011.

59. Mazen M. Abadla, **Sofyan A. Taya**, and Mohamed M. Shabat, "Reflectance from a multilayer slab waveguide structure", The Second International Conference of Applied & natural Sciences (ICNAS-2), Al-Aqsa University, Gaza, Palestine, May 30-31 2011.
60. Sofyan A. Taya, Mazen M. Abadla, Mohamed M. Shabat, and Eman J El-Farram, "Planar slab waveguide sensor with a left-handed material substrate", International Conference on Applications of Optics and Photonics, Proc. of SPIE Vol. 8001, 800110-1 - 800110-7, Braga, Portugal, May 3 to 7, 2011, http://spie.org/x648.html?product_id=881049
61. Hani Kullab, **Sofyan A. Taya**, Taher M. El-Agez, Mazen M. Abadla, and Mohamed M. Shabat "Materials of negative index of refraction as an optical sensor" The Fourth International Conference for Science and Development, Islamic University of Gaza, Gaza, Palestine, November 22-23, 2011.
62. Anass A. Alkanoo, Taher M. El-Agez, and **Sofyan A. Taya**, "Fourier ellipsometer with a fixed compensator", The Fourth International Conference for Science and Development, Islamic University of Gaza, Gaza, Palestine, November 22-23, 2011.
63. Hussam S. Musleh, Taher M. El-Agez, Ahmed A. Tayyan, and **Sofyan A. Taya**, "Organic light emitting diode with different dyes", The Fourth International Conference for Science and Development, Islamic University of Gaza, Gaza, Palestine, November 22-23, 2011
64. Hatem S. El-Ghamri, Taher M. El-Agez, and **Sofyan A. Taya**, "Dye sensitized solar cells", The Fourth International Conference for Science and Development, Islamic University of Gaza, Gaza, Palestine, November 22-23, 2011.
65. **Sofyan A. Taya**, Eman J. El-Farram, and Taher M. El-Agez, "Goos Hänchen shift as a probe in evanescent slab waveguide sensors", International Journal of Electronics and Communications, Int. J. Electron. Commun. (AEÜ), Vol. 66, No. 3, 204–210 (2012). doi:10.1016/j.aeue.2011.07.004.
66. **Sofyan A. Taya** and Taher M. El-Agez, "Slab waveguide sensor based on amplified phase change due to multiple total internal reflections", Turkish Journal of Physics, Turk. J. Phys., Vol. 36, No. 1, 67 – 76 (2012). doi:10.3906/fiz-1103-23
67. **Sofyan A. Taya** and Taher M. El-Agez, "Optical sensors based on Fabry-Perot resonator and fringes of equal thickness structure", Optik - Int. J. Light Electron Opt., Vol. 123, No. 5, 417-421, 2012. doi:10.1016/j.ijleo.2011.04.020.
68. Nizam M. El-Ashgar, Ahmed El-Basioni, Issa M. El-Nahhal, Shehata M. Zourob, Taher M. El-Agez and **Sofyan A. Taya**, "Sol-Gel Thin Films Immobilized with Bromocresol Purple pH Sensitive Indicator in Presence of Surfactants", ISRN Analytical Chemistry, vol. 2012, Article ID 604389, 11 pages, 2012. doi:10.5402/2012/604389.
69. **Sofyan A. Taya** and Taher M. El-Agez, "Effect of noise on the optical parameters extracted from different ellipsometric configurations", Physica Scripta, Phys. Scr. **85** (2012) 045706 (6pp), doi:10.1088/0031-8949/85/04/045706.
70. Hani M. Kullab, **Sofyan A. Taya**, and Taher M. El-Agez, "Metal-clad waveguide sensor using a left-handed material as a core layer", Journal of the optical society of America B, J. Opt. Soc. Am. B Vol. 29, No. 5, 959-964 (2012). <https://doi.org/10.1364/JOSAB.29.000959>

71. **Sofyan A. Taya**, Taher M. El-Agez, and Hani Kullab "Utilizing negative index materials in metal-clad waveguide sensors", Fifth Saudia Science Conference, Umm Al-Qura University, Makkah, Saudia Arabia, April 16-18, 2012. http://uqu-ssc5.net/en_Program.aspx
72. **Sofyan A. Taya** and Taher M. El-Agez, "Scanning ellipsometer using a fixed phase retarder and rotating polarizer and analyzer", 2nd International Advances in Applied Physics and Materials Science Congress, Antalya, Turkey, April 26-29, 2012 (APMAS 2012).
<http://intranet.websenin.com/internet/apmas2012org/SP3.pdf>
73. **Sofyan A. Taya**, Taher M. El-Agez, Hani Kullab, Mazen M. Abadla, and Mohamed M. Shabat, "Theoretical study of slab waveguide optical sensor with left-handed material as a core layer", *Optica applicata*, Vol. 42, No. 1, 193-205, 2012. DOI: 10.5277/oa120118.
74. **Sofyan A. Taya** and Taher M. El-Agez, "Matrix Formulation of transmission of electromagnetic waves in one-dimensional multilayer plasma structure", *International Journal of Microwave and Optical Technology (IJMOT)*, Vol. 7, No. 2, 135-141, 2012.
75. **Sofyan A. Taya**, Mazen M. Abadla, Mohamed M. Shabat, and Eman J. El-Farram, "Evanescent wave sensors with a left-handed material as a substrate", *Chinese J. of Physics*, Vol. 50, No. 3, 478-499, 2012.
76. Hussam S. Musleh, Taher M. El-Agez, Ahmed A. Tayyan, and **Sofyan A. Taya**, "Investigation of the effect of different dyes on organic light emitting diode properties", *IUG Journal of Natural and Engineering Studies*, Vol. 20, No. 2, 1-14, 2012.
77. Taher M. El-Agez and **Sofyan A. Taya**, "Noise effect on thin film characterization using rotating polarizer analyzer ellipsometer", *Acta Physica Polonica A*, Vol. 122, No. 1, 15-19, 2012. DOI: [10.12693/APhysPolA.122.15](https://doi.org/10.12693/APhysPolA.122.15)
78. Taher M. El-Agez, Ahmed A. El Tayyan, Amal Al-Kahlout, **Sofyan A. Taya**, Monzir S. Abdel-Latif, "Dye-sensitized solar cells based on ZnO films and natural dyes", *International Journal of Materials and Chemistry*, Vol. 2, No. 3, 105-110, 2012. DOI: 10.5923/j.ijmc.20120203.04
79. **Sofyan A. Taya** and Mohammed M. Shabat, "Slab waveguide optical sensor using negative index materials: TE case", 4th International Conference on Nanostructures (ICNS4) Kish Island, I.R. Iran, March 12-14, 2012.
80. **Sofyan A. Taya**, Hani M. Kullab and Taher M. El-Agez "Slab waveguide optical sensors in reflectance mode", The Second International Conference on Basic and Applied Sciences (ICBAS2), Al Azhar University, Gaza, Palestine, October 9-11, 2012.
81. Anas A. Alkanoo, Taher M. El-Agez, and **Sofyan A. Taya** "A new ellipsometric structure using a fixed compensator", The Second International Conference on Basic and Applied Sciences (ICBAS2), Al Azhar University, Gaza, Palestine, October 9-11, 2012.
82. Hani M. Kullab, **Sofyan A. Taya**, and Taher M. El-Agez "Optical sensors employing peak type metal-clad waveguides", The Second International Conference on Basic and Applied Sciences (ICBAS2), Al Azhar University, Gaza, Palestine, October 9-11, 2012.

83. Mazen M. Abadla and **Sofyan A. Taya** "Excitation of TE Surface Polaritons in Different Structures with a Metal and a Left - Handed Material Interfaces", The Second International Conference on Basic and Applied Sciences (ICBAS2), Al Azhar University, Gaza, Palestine, October 9-11, 2012.
84. Ibrahim M. Qadoura, **Sofyan A. Taya**, and Khitam Y. El-wasife "Scaling rules for a slab waveguide structure comprising nonlinear and negative index materials", International Journal of Microwave and Optical Technology (IJMOT), Vol. 7, No. 5, 349-357, 2012.
85. **Sofyan A. Taya** and Khitam Y. Elwasife, "Guided modes in a metal-clad waveguide comprising a left-handed material as a guiding layer", International Journal of Research and Reviews in Applied Sciences (IJRRAS), Vol. 13, No. 1, 294-305, 2012.
86. **Sofyan A. Taya**, Eman J. El-Farram, and Mazen M. Abadla, "Symmetric multilayer slab waveguide structure with a negative index material: TM case", Optik - International J. for Light and Electron Optics, Int. J. Light Electron Opt., Vol. 123, No. 24, 2264– 2268, 2012. doi:10.1016/j.ijleo.2011.11.016.
87. **Sofyan A. Taya**, Taher M. El-Agez, and Anas A. Alkanoo, "Ellipsometric configurations using a phase retarder and a rotating polarizer and analyzer at any speed ratio", Chinese Physics B, Vol. 21, No. 11, (2012) 110701 (13pp) doi:10.1088/1674-1056/21/11/110701.
88. **Sofyan A. Taya**, Taher M. El-Agez, Hatem S. El-Ghamri, Monzir S. Abdel-Latif, "Dye-sensitized solar cells using fresh and dried natural dyes" International Journal of Materials Science and Applications, Vol. 2, No. 2, 37-42 (2013). DOI: [10.11648/j.ijmsa.20130202.11](https://doi.org/10.11648/j.ijmsa.20130202.11)
89. **Sofyan A. Taya**, Taher M. El-Agez, and Anas A. Alkanoo, "Rotating polarizer and analyzer ellipsometer with a speed ratio 1:N", Second Euro-Mediterranean Meeting on Functionalized Materials EMM-FM 2013, Hammamet, Tunisia, March 24-28, 2013. <http://emm-fm2013.com/wp-content/uploads/Poster-presentations.pdf>.
90. **Sofyan A. Taya** and Taher M. El-Agez, "Scanning ellipsometer using a fixed phase retarder and rotating polarizer and analyzer", ACTA PHYSICA POLONICA A, (Proceedings of the 2nd International Congress APMAS2012, April 26_29, 2012, Antalya, Turkey), Vol. 123, No., 2, 183-184, (2013). DOI: [10.12693/APhysPolA.123.183](https://doi.org/10.12693/APhysPolA.123.183)
91. **Sofyan A. Taya** and Ibrahim M. Qadoura, "Guided modes in slab waveguides with negative index cladding and substrate", Optik-International Journal for Light and Electron Optics, Int. J. Light Electron Opt., Vol. 124, No. 13, 1431–1436 (2013). <http://dx.doi.org/10.1016/j.ijleo.2012.03.057>
92. Taher M. El-Agez, **Sofyan A. Taya**, Ahmed A. El Tayyan, Monzir S. Abdel-Latif, and Ahed Afghjani, " Electroluminescence from Single PVK Layer Organic Light Emitting Diode Using Different Dyes at Different Concentrations", Physical Review & Research International, Vol. 3. No. 4, 306–320 (2013).
93. **Sofyan A. Taya**, Hani M. Kullab, and Ibrahim M. Qadoura, "Dispersion properties of slab waveguides with double negative material guiding layer and nonlinear substrate", Journal of the optical society of America B, J. Opt. Soc. Am. B, Vol. 30, No. 7, 2008–2013 (2013). <https://doi.org/10.1364/JOSAB.30.002008>
94. Taher M. El-Agez, **Sofyan A. Taya**, Mohamed M. Shabat, and Hani Kullab, "Planar waveguide with left-handed material guiding film for refractometry

- applications", Turkish Journal of Physics, Turk. J. Phys., Vol. 37, No. 2, 250–258 (2013). doi:10.3906/fiz-1206-9
95. Hani M. Kullab and **Sofyan A. Taya** "Peak type metal-clad waveguide sensor using negative index materials", International Journal of Electronics and Communications, Int. J. Electron. Commun. (AEÜ), Vol. 67, No. 11, 984– 986 (2013). <http://dx.doi.org/10.1016/j.aeue.2013.05.012>
 96. **Sofyan A. Taya** and Taher M. El-Agez, "Rotating polarizer analyzer ellipsometer with a fixed compensator", Optik-International Journal for Light and Electron Optics, Int. J. Light Electron Opt., Vol. 124, No. 18, 3379–3383 (2013). <http://dx.doi.org/10.1016/j.ijleo.2012.10.045>
 97. Monzir S. Abdel-Latif, Taher M. El-Agez, **Sofyan A. Taya**, Amal Y. Batniji, Hatem S. El-Ghamri, "Plant Seeds-Based Dye-Sensitized Solar Cells", Materials Sciences and Applications, Vol. 4, No. 9, 516-520 (2013). DOI: [10.4236/msa.2013.49063](https://doi.org/10.4236/msa.2013.49063)
 98. **Sofyan A. Taya**, Taher M. El-Agez, and Anas A. Alkanoo, "Rotating polarizer, compensator, and analyzer ellipsometry", Chinese Physics B, Chin. Phys. B, Vol. 22, No. 12. 120703-1 - 120703-12 (2013). DOI: 10.1088/1674-1056/22/12/120703
 99. **Sofyan A. Taya**, Mustafa H. Abu Nasr, and Taher M. El-Agez, "Reflection, transmission, and ellipsometric parameters of multilayer structure using bi-characteristic-impedance transmission line approach", Optica Applicata, Vol. 43, No. 4, 817–829 (2013). DOI: 10.5277/oa130417
 100. **Sofyan A. Taya**, Khitam Y. Elwasife, and Hani M. Kullab, "Dispersion properties of anisotropic-metamaterial slab waveguide structure", Optica Applicata, Vol. 43, No. 4, 857–869 (2013). DOI: 10.5277/oa130420
 101. Hani M. Kullab and **Sofyan A. Taya** "Transverse magnetic peak type metal-clad optical waveguide sensor", Optik - Int. J. Light Electron Opt., Vol. 125, No. 1, 97-100 (2014). DOI: 10.1016/j.ijleo.2013.06.092.
 102. Amal Y. Batniji, Monzir S. Abdel-Latif, Taher M. El-Agez, **Sofyan A. Taya**, and Hatem S. El-Ghamri, "Plant seeds-Based Dye-Sensitized Solar Cells", The Fifth International Conference for Science and Development, Islamic University of Gaza, Gaza, Palestine, February 25-26, 2014.
 103. Mahmoud B. Abuiriban, Taher M. El-Agez, and **Sofyan A. Taya**, "Dye-sensitized solar cells using natural dyes extracted from leaves, flowers, and roots", The Fifth International Conference for Science and Development, Islamic University of Gaza, Gaza, Palestine, February 25-26, 2014.
 104. Mohammed K. Elhabbash, **Sofyan A. Taya**, and Taher M. El-Agez, "Multilayer structure with conducting interfaces", The Fifth International Conference for Science and Development, Islamic University of Gaza, Gaza, Palestine, February 25-26, 2014.
 105. Sameh S. Mahdi and **Sofyan A. Taya**, "Slab waveguides with conductive interfaces for sensing applications", The Fifth International Conference for Science and Development, Islamic University of Gaza, Gaza, Palestine, February 25-26, 2014.
 106. **Sofyan A. Taya**, Taher M. El-Agez, and Anas A. Alkanoo, "A spectroscopic ellipsometer using rotating polarizer and analyzer at a speed ratio 1:1 and a compensator", Optical and Quantum Electronics, Opt Quant Electron, Vol. 46, No. 7, 883-895 (2014). DOI: 10.1007/s11082-013-9799-5.

107. Mazen Abadla and **Sofyan A. Taya** "Excitation of TE surface polaritons in different structures comprising a left-handed material and a metal", *Optik-International Journal for Light and Electron Optics, Optik - Int. J. Light Electron Opt.*, Vol. 125, No. 3, 1401-1405 (2014). DOI: 10.1016/j.ijleo.2013.08.040.
108. Amal Y. Batniji, Rami Morjan, Monzir S. Abdel-Latif, Taher M. El-Agez, **Sofyan A. Taya**, and Hatem S. El-Ghamri, "Aldimine derivatives as photosensitizers for dye-sensitized solar cells", *Turkish Journal of Physics, Turk. J. Phys.*, Vol. 38, No. 1, 86–90 (2014). DOI:10.3906/fiz-1309-4.
109. **Sofyan A. Taya**, Taher M. El-Agez, Monzir S. Abdel-Latif, Hatem S. El-Ghamri, Amal Y. Batniji, and Islam R. El-Sheikh, "Fabrication of dye-sensitized solar cells using dried plant leaves", *International Journal of Renewable Energy Research*, Vol. 4, No. 2, 384–388 (2014).
110. **Sofyan A. Taya** and Khitam Y. Elwasife, "Field profile of asymmetric slab waveguide structure with LHM layers", *Journal of Nano- and Electronic Physics, J. Nano- Electron. Phys.*, Vol. 6, No. 2, 02007(5pp) (2014).
111. **Sofyan A. Taya** and Hani M. Kullab, "Optimization of transverse electric peak type metal-clad waveguide sensor using double negative materials", *Applied Physics A*, Vol. 116, No. 4, 1841–1846 (2014)., DOI: 10.1007/s00339-014-8338-y
112. Taher M. El-Agez, **Sofyan A. Taya**, Kamal S. ElRefi, and Monzir S. Abdel-Latif, "Dye sensitized solar cells using some organic dyes as photosensitizers", *Optica Applicata*, Vol. 44, No. 2, 345–351 (2014). DOI: 10.5277/oa140215.
113. Taher M. El-Agez and **Sofyan A. Taya**, "Design of a spectroscopic ellipsometer by synchronous rotation of the polarizer and analyzer in opposite directions", *Microwave and Optical Technology Letters*, Vol. 56, No. 12, 2822–2826 (2014). <https://doi.org/10.1002/mop.28704>
114. **Sofyan A. Taya**, "Slab waveguide with air core layer and anisotropic left-handed material claddings as a sensor", *Opto-Electronics Review*, Vol. 22, No. 4, 252–257 (2014). DOI: 10.2478/s11772-014-0201-3.
115. Taher M. El-Agez, Hatem S. El-Ghamri, Monzir S. Abdel-Latif, **Sofyan A. Taya**, and Anas A. Alkanoo "Thermoelectricity based on CuO as a semiconducting material", *International Journal of Chemistry and Materials Research*, Vol. 2, No. 12, 166-173 (2014).
116. **Sofyan A. Taya**, "P-polarized surface waves in a slab waveguide with left-handed material for sensing applications", *Journal of Magnetism and Magnetic Materials*, Vol. 377, 281–285 (2015). DOI: 10.1016/j.jmmm.2014.10.126.
117. **Sofyan A. Taya**, Hatem S. El-Ghamri, Taher M. El-Agez, Monzir S. Abdel-Latif, and Amal Y. Batniji, "Three Fresh Plant Seeds as Natural Dye Sensitizers for Titanium Dioxide Based Dye Sensitized Solar Cells", *British Journal of Applied Science & Technology*, Vol. 5, No. 4, 380-386 (2015).
118. Hatem S. El-Ghamri, Taher M. El-Agez, **Sofyan A. Taya**, Monzir S. Abdel-Latif, and Amal Y. Batniji, "Dye-sensitized solar cells with natural dyes extracted from plant seeds", *Materials Science-Poland*, Vol. 32, No. 4, 547–554 (2015). DOI: 10.2478/s13536-014-0231-z

119. **Sofyan A. Taya**, Taher M. El-Agez, Kamal S. ElRefi, and Monzir S. Abdel-Latif, "Dye-sensitized solar cells based on dyes extracted from dried plant leaves ", Turkish Journal of Physics, Turk. J. Phys. Vol. 39, No. 1, 24–30 (2015). DOI: 10.3906/fiz-1312-12.
120. Monzir S. Abdel-Latif, Mahmoud B. Abuiriban, Taher M. El-Agez, and **Sofyan A. Taya**, "Dye-sensitized solar cells using dyes extracted from flowers, leaves, parks, and roots of three trees", International Journal of Renewable Energy Research, Vol. 5, No. 1, 294–298 (2015).
121. Taher M. El-Agez, Mohammed S. Al-Qrinawi, Monzir S. Abdel-Latif, and **Sofyan A. Taya**, "Electrical properties of organic light emitting diodes with post fabrication heat and electric field treatments" European International Journal of Science and Technology, Vol. 4, No. 3, 69–78 (2015).
122. **Sofyan A. Taya**, "Dispersion properties of lossy, dispersive, and anisotropic left-handed material slab waveguide", Optik - International Journal for Light and Electron Optics, Int. J. Light Electron Opt., Vol. 126, No. 14, 1319–1323 (2015). DOI: 10.1016/j.ijleo.2015.04.013
123. **Sofyan A. Taya**, Taher M. El-Agez, and Ahed Afghjani, "Electroluminescence from double layer organic light emitting diodes at different thicknesses of PVK layer", Journal of Applied Physical Science International, Vol. 3, No. 2, 59–68 (2015).
124. Hani M. Kullab, Ibrahim M. Qadoura, and **Sofyan A. Taya**, "Slab waveguide sensor with left-handed material core layer for detection an adlayer thickness and index", Journal of Nano- and Electronic Physics, J. Nano- Electron. Phys., Vol. 7, No. 2, 02039(6pp) (2015).
125. **Sofyan A. Taya** and Dina M. Alamassi, "Reflection and transmission from left-handed material structures using Lorentz and Drude medium models", Opto-Electronics Review, Vol. 23, No. 3, 214–221 (2015). DOI: 10.1515/oere-2015-0031
126. Anas A. Alkanoo, **Sofyan A. Taya**, and Taher M. El-Agez, " Effect of the orientation of the fixed analyzer on the ellipsometric parameters in rotating polarizer and compensator ellipsometer with speed ratio 1:1", Optical and Quantum Electronics, Opt Quant Electron, Vol. 47, No. 7, 2039–2053 (2015). DOI: 10.1007/s11082-014-0077-y.
127. Monzir S. Abdel-Latif, Mahmoud B. Abuiriban, Naji Al Dahoudi, Amal M. Al-Kahlout, **Sofyan A. Taya**, Taher M. El-Agez, Hatem S. El-Ghamri, "Dye-sensitized solar cells using fifteen natural dyes as sensitizers of nanocrystalline TiO₂", Science, Technology and Development, Vol. 34, No. 3, 135-139 (2015). DOI: 10.3923/std.2015.135.139
128. Hatem S. El-Ghamri, **Sofyan A. Taya**, Taher M. El-Agez, Amal M. Al-Kahlout, Naji Al Dahoudi, and Monzir S. Abdel-Latif, "Natural Dyes as Photosensitizers for Dye–Sensitized Solar Cell", Journal of Nano- and Electronic Physics, J. Nano- Electron. Phys., Vol. 7, No. 3, 03001(6pp) (2015).
129. Amal M. Al-Kahlout, Hatem S. El-Ghamri, Taher M. El-Agez, **Sofyan A. Taya**, Naji Al Dahoudi, and Monzir S. Abdel-Latif, "A comparative study: Synthetic Dyes as Photosensitizers for Dye–Sensitized Solar cells", Turkish Journal of Physics, Turk. J. Phys., Vol. 39, No. 3, 272–279 (2015). doi:10.3906/fiz-1504-6

130. **Sofyan A. Taya**, "Theoretical investigation of slab waveguide sensor using anisotropic metamaterials", *Optica Applicata*, Vol. 45, No. 3, 405–417 (2015). DOI: [10.5277/oa150312](https://doi.org/10.5277/oa150312).
131. Monzir S. Abdel-Latif, Taher M. El-Agez, **Sofyan A. Taya**, Hatem Ghamri, and Amal Batniji, "Dyes Extracted from Biota Orientalis, Piper Nigrum, and Glycyrrhiza glabra as Photosensitizers for Dye-Sensitized Solar Cells", *International Journal of Renewable Energy Research*, Vol. 5, No. 4, 1034–1040 (2015).
132. Taher M. El-Agez, Mohammed S. Al-Qrinawi, Monzir S. Abdel-Latif, and **Sofyan A. Taya**, "The Influence of Thin Layer Copper Phthalocyanine on the Performance of PVK/ Rhodamine B Device", *IUG Journal of Natural and Engineering Studies*, Vol. 24, No. 1, 54–59 (2016).
133. **Sofyan A. Taya**, Taher M. El-Agez, Monzir S. Abdel-Latif, Hatem Ghamri, Amal Batniji, and Wael A. Tabaza, "Dyes extracted from Safflower, Medicago sativa, and Ros marinus officinalis as photosensitizers for dye-sensitized solar cells", *Journal of Nano- and Electronic Physics*, J. Nano- Electron. Phys., Vol. 8, No 1, 01026(5pp) (2016). DOI: [10.21272/jnep.8\(1\).01026](https://doi.org/10.21272/jnep.8(1).01026)
134. Taher M. El-Agez, Hatem Ghamri, Amal Batniji, Wael A. Tabaza, Monzir S. Abdel-Latif^{2,3} and **Sofyan A. Taya**, "Dyes extracted from the seeds of Eruca Sativa, Nigella sativa and Ammi visnaga as photosensitizers for dye-sensitized solar cells", *International Journal of Thin Films Science and Technology*, Vol. 5, No. 2, pp. 91-96 (2016). [doi:10.18576/ijtfst/050202](https://doi.org/10.18576/ijtfst/050202)
135. Anas A. Alkanoo, Taher M. El-Agez, Sofyan A. Taya, and Ahed Afghjani, "Characterization of PVK polymeric material using rotating polarizer and analyzer ellipsometer with a speed ratio 1:1", *Science, Technology and Development*, Vol. 35, No. 1, pp. 16-21 (2016). DOI: [10.3923/std.2016.16.21](https://doi.org/10.3923/std.2016.16.21)
136. **Sofyan A. Taya**, Anwar A. Jarada and Hani M. Kullab, "Slab waveguide sensor utilizing left-handed material core and substrate layers", *Optik - International Journal for Light and Electron Optics*, Int. J. Light Electron Opt., Vol. 127, No. 19, pp. 7732–7739 (2016). [doi:10.1016/j.ijleo.2016.05.095](https://doi.org/10.1016/j.ijleo.2016.05.095).
137. **Sofyan A. Taya**, Taher M. El-Agez, Hussein A. Al-Mogiar, Hatem S. Ghamri and Monzir S. Abdel-Latif, "Solar cells sensitized with the extracts of Hibiscus Sabdariffa and Rosa Damascena flowers", *International Journal of Renewable Energy Research*, Vol. 6, No. 2, pp. 687-694 (2016).
138. Islam M. Radwan, **Sofyan A. Taya**, Taher M. El-Agez, Monzir S. Abdel-Latif, Hatem S. Ghamri, "Improvement of the performance of purple carrot sensitized solar cells by acidic treatment of FTO glass substrate and TiO₂ film", *Acta Physica Polonica A*, Vol. 130, No. 3, pp 795-799 (2016). DOI: [10.12693/APhysPolA.130.795](https://doi.org/10.12693/APhysPolA.130.795)
139. Khitam Y. Elwasife and **Sofyan A. Taya**, "Characteristics of Symmetric Left-Handed Material Slab Waveguide" *IOSR Journal of Applied Physics*, Vol. 8, No. 5 pp. 91-98 Oct. (2016). DOI: [10.9790/4861-0805029198](https://doi.org/10.9790/4861-0805029198)
140. Amal Batniji, Monzir S. Abdel-Latif, Taher M. El-Agez, **Sofyan A. Taya**, and Hatem Ghamri, "Dyes extracted from Trigonella seeds as photosensitizers for dye-sensitized solar cells" *Journal of Theoretical and Applied Physics*, J Theor Appl Phys Vol. 10, No. 4, pp 265–270 (2016). DOI: [10.1007/s40094-016-0225-9](https://doi.org/10.1007/s40094-016-0225-9).

141. Monzir S. Abdel-Latif, Amal Batniji, Taher M. El-Agez, Malak J. Younis, Hatem Ghamri, Bassam A. Abu Thaher, Basem S. Qeshta, Fakhr M. Abu-Awwad, and **Sofyan A. Taya**, "Dye sensitized solar cells based on hydrazonoyl synthetic dyes", *Journal of Nano- and Electronic Physics*, J. Nano- Electron. Phys. Vol. 8, No 4, 04038(9pp) (2016). DOI: 10.21272/jnep.8(4(1)).04038
142. **Sofyan A. Taya**, Sameh S. Mahdi, Anas A. Alkanoo, and Ibrahim M. Qadoura, "Slab waveguide with conducting interfaces as an efficient optical sensor: TE case" *Journal of modern optics*, Vol. 64, No . 8, pp 836–843 (2017). DOI: 10.1080/09500340.2016.1262072.
143. **Sofyan A. Taya**, Somaia A. Shaheen and Anas A. Alkanoo, "Photonic crystal as a refractometric sensor operated in reflection mode", *Superlattices and Microstructures*, Vol. 101, pp 299-305 (2017).
<http://dx.doi.org/10.1016/j.spmi.2016.11.057>.
144. Dena M. El-Amassi and **Sofyan A. Taya**, "Reflection through a parallel-plate waveguide formed by two graphene sheets", *Photonics and Nanostructures - Fundamentals and Applications*, Vol. 24, pp 53–57 (2017). DOI: 10.1016/j.photonics.2017.03.008.
145. Mazen M. Abadla and **Sofyan A. Taya**, "Theoretical investigation of guided modes in planar waveguides having chiral negative index metamaterial core layer", *Optik - International Journal for Light and Electron Optics*, Int. J. Light Electron Opt., Vol. 131, pp 562–573, (2017). DOI: 10.1016/j.ijleo.2016.11.184.
146. Somaia A. Shaheen and **Sofyan A. Taya**, "Propagation of p-polarized light in photonic crystal for sensor application", *Chinese Journal of Physics*, Vol. 55, No. 2, pp. 571-582 (2017). DOI: 10.1016/j.cjph.2016.12.005.
147. Mohammed S. Al-Qrinawi, Taher M. El-Agez, Monzir S. Abdel-Latif, and **Sofyan A. Taya**, "Influence of copper phthalocyanine (CuPc) thin layer on capacitance-voltage characterization of a device consisting ITO/CuPc/PVK/Rhodamine B dye layers", *International Journal of Thin Films Science and Technology*, Vol. 6, No . 2, pp 61–66 (2017). [doi:10.18576/ijfst/060202](https://doi.org/10.18576/ijfst/060202)
148. Abdallah AL-Juaidi, Anas A. Alkanoo and **Sofyan A. Taya**, "Propagation of p-polarized waves in a linearly graded index film surrounded by negative index materials", *Optical and Quantum Electronics*, Opt Quant Electron, Vol. 49, No. 5, Article 195 (11pp) (2017). DOI: 10.1007/s11082-017-1032-5.
149. **Sofyan A. Taya**, Khitam Y. Elwasife, and Ibrahim M. Qadoura, "Phase and group velocities of surface waves in left-handed material waveguide structures", *Optica Applicata*, Vol. 47, No. 2, 307–318 (2017). DOI: 10.5277/oa170213.
150. Alaa N. Abu Helal, Khitam Y. Elwasife and **Sofyan A. Taya**, "Characteristics of electromagnetic waves in slab waveguide structures comprising chiral nihility film and left-handed material claddings", *Optik - International Journal for Light and Electron Optics*, Int. J. Light Electron Opt., Vol. 149, pp 332–343, (2017). Doi: <https://doi.org/10.1016/j.ijleo.2017.09.076>.
151. Islam M. Radwan, Taher M. El-Agez, **Sofyan A. Taya**, Monzir S. Abdel-Latif, Hatem S. Ghamri, Amal M. Al-Kahlout, and Naji Al Dahoudi, "Performance of purple carrot as a sensitizer for dye-sensitized solar cells", *Science, Technology and Development*, Vol. 36, No. 4, 196-205, (2017). DOI: 10.3923/std.2017.196.205.

152. Anas A. Alkanoo and **Sofyan A. Taya**, "Theoretical investigation of five-layer waveguide structure including two left-handed material layers for refractometric applications", *Journal of Magnetism and Magnetic Materials*, Vol. 449, pp 395–400 (2018). <https://doi.org/10.1016/j.jmmm.2017.10.086>.
153. **Sofyan A. Taya** and Somaia A. Shaheen, "Binary photonic crystal for refractometric applications (TE case)", *Indian Journal of Physics*, Vol. 92, No. 4, 519-527, (2018). Doi: <https://doi.org/10.1007/s12648-017-1130-z>.
154. Alaa N. Abu Helal, **Sofyan A. Taya** and Khitam Y. Elwasife, "Propagation of electromagnetic waves in slab waveguide structure consisting of chiral nihility claddings and negative-index material core layer", *Photonic Sensors*, Vol. 8, No. 2, 176–187, (2018). DOI : <https://doi.org/10.1007/s13320-018-0414-z>.
155. **Sofyan A. Taya**, "Plasmon modes supported by left-handed material slab waveguide with conducting interfaces", *Photonics and Nanostructures - Fundamentals and Applications*, Vol. 30, 39-44, (2018). <https://doi.org/10.1016/j.photonics.2018.04.003>.
156. **Sofyan A. Taya**, Anas A. Alkanoo, Nambi R. Ramanujam, Perumal Mahalakshmi, and Dhasarathan Vigneswaran, "Photonic crystal with epsilon negative and double negative materials as an optical sensor", *Optical and Quantum Electronics*, Vol. 50, No. 5, 222-1 – 222-11 (2018). Doi: 10.1007/s11082-018-1487-z
157. Dena M. El-Amassi and **Sofyan A. Taya**, "Reflected and transmitted powers of p-polarized electromagnetic waves through a dielectric slab surrounded by double-negative materials", *Journal of Electromagnetic Waves and Applications*, Vol. 32, No. 12, 1541-1559 (2018). <https://doi.org/10.1080/09205071.2018.1453387>
158. Dena M. El-Amassi, **Sofyan A. Taya**, Nambi R. Ramanujam, Dhasarathan Vigneswaran and R. Udaiyakumar "Extension of energy band gap in ternary photonic crystal using left-handed materials", *Superlattices and Microstructures*, Vol. 120, 353–362 (2018). DOI: 10.1016/j.spmi.2018.05.037.
159. **Sofyan A. Taya**, "Ternary photonic crystal with left-handed material layer for refractometric application", *Opto-Electronics Review*, Vol. 26, No. 3, 236-241 (2018). Doi: 10.1016/j.opelre.2018.05.002.
160. Dena M. El-Amassi, **Sofyan A. Taya** and Dhasarathan Vigneswaran, "Temperature sensor utilizing a ternary photonic crystal with a polymer layer sandwiched between Si and SiO₂ layers", *Journal of Theoretical and Applied Physics*, Vol. 12, No. 4, 293-298 (2018). DOI: 10.1007/s40094-018-0308-x
161. V.S. Revathy, C.S. Boopathi, K. Selvakumar, Kulandaisamy S. Joseph Wilson, **Sofyan A Taya**, Arafa H Aly, M. S. Mani Rajan, "Nonlinear polarization in metal nanocomposite system based photonic crystals", *Optik - International Journal for Light and Electron Optics*, Vol. 176, 78 – 84 (2019). <https://doi.org/10.1016/j.ijleo.2018.09.038>
162. N. Shanmuga Vadivu, Sameh S. Mahdi , **Sofyan A. Taya**, Anas A. Alkanoo , Ibrahim M. Qadoura , P. Mahalakshmi , M.S. Mani Rajan, "Transverse magnetic mode slab waveguide optical sensor in the presence of conducting interfaces", *Optik - International Journal for Light and Electron Optics*, Vol. 178, 1090 – 1096 (2019). <https://doi.org/10.1016/j.ijleo.2018.10.097>.

163. N R Ramanujam, K S Joseph Wilson, P. Mahalakshmi, **Sofyan A Taya**, "Analysis of Photonic Band Gap in Photonic crystal with Epsilon Negative and Double Negative Materials", *Optik - International Journal for Light and Electron Optics*, Vol. 183, 203-210 (2019). <https://doi.org/10.1016/j.ijleo.2019.02.066>.
164. Mazen M Abadla, Noor A. Tabaza, Wael Tabaza, N R Ramanujam, K S Joseph Wilson, Dhasarathan Vigneswaran, **Sofyan A Taya**, "Properties of ternary photonic crystal consisting of dielectric/plasma/dielectric as a lattice period", *Optik - International Journal for Light and Electron Optics*, Vol. 185, 784-793, May (2019). <https://doi.org/10.1016/j.ijleo.2019.04.027>.
165. N. R. Ramanujam, I. S. Amiri, **Sofyan A. Taya**, Saeed Olyae, R. Udaiyakumar, A. Pasumpon Pandian, K. S. Joseph Wilson, P. Mahalakshmi, P. P. Yupapin, "Enhanced sensitivity of cancer cell using one dimensional nano composite material coated photonic crystal", *Microsystem Technologies (Microsyst Techno)*, Vol. 25, No. 1, 189-196 (2019). <https://doi.org/10.1007/s00542-018-3947-6>.
166. **Sofyan A. Taya**, Abdallah A. AL-Juaidi, D. Vigneswaran, I. S. Amiri, and P. Yupapin "Design of a slab waveguide using a graded index profile and a left hand material", *Physica B: Condensed Matter*, Vol. 564, 59-63 (2019). <https://doi.org/10.1016/j.physb.2019.04.011>.
167. N.R. Ramanujam, Hala J. El-Khozondar, Vigneswaran Dhasarathan, **Sofyan A. Taya**, Arafa H. Aly, "Design of one dimensional defect based photonic crystal by composited superconducting material for bio sensing applications", *Physica B: Physics of Condensed Matter*, Vol. 572, 42-55 (2019). <https://doi.org/10.1016/j.physb.2019.07.051>.
168. **Sofyan A. Taya**, Zaher M. Nassar and Nael Doghmosh, "Properties of a ternary photonic crystal with a nanocomposite defect layer", *Internations Conference on Materials for advanced applications (M2A)*, Hammamet, April 9-12, 2020, Tunisia.
169. Noor E. Al-Ashi, **Sofyan A. Taya**, Sahar A. El-Naggar, D. Vigneswaran, IS Amiri, "Optical fiber surrounded by graphene layer as an optical sensor", *Optical and Quantum Electronics, Opt Quant Electron*, Vol. 52, No. 3, 187-1 – 187-11 (2020). <https://doi.org/10.1007/s11082-020-02288-7>
170. Soniya Akter, Kawsar Ahmed, Sahar A. El-Naggar, **Sofyan A. Taya**, Truong Khang Nguyen, Vigneswaran Dhasarathan, "Highly sensitive refractive index sensor for temperature and salinity measurement of seawater", *Optik - International Journal for Light and Electron Optics*, Vol. 216, August 2020, Article 164901 <https://doi.org/10.1016/j.ijleo.2020.164901>
171. R. Krishnamurthy, V. Revathy, K. S. Joseph Wilson, **Sofyan A. Taya**, I. S. Amiri, "Phonon Polariton Dispersion in Metal-Doped Nanocomposite Superlattice System", *Journal of Optical Communications*, DOI: <https://doi.org/10.1515/joc-2019-0109>
172. N.R. Ramanujam , Shobhit K. Patel , N. Manohar Reddy , **Sofyan A. Taya**, D. Vigneswaran , M.S. Mani Rajan, "One-dimensional ring mirror-defect photonic crystal for detection of Mycobacterium tuberculosis bacteria" *Optik - International Journal for Light and Electron Optics*, Vol. 219, October 2020, Article 165097 <https://doi.org/10.1016/j.ijleo.2020.165097>

173. **Sofyan A. Taya**, Nael Doghmosh, Zaher M. Nassar, Anas A. Alkanoo, Anurag Upadhyay, "Properties of a binary photonic crystal with an inverted symmetry and a defect layer", *The European Physical Journal Plus*, *Eur. Phys. J. Plus*, Vol. 135, No. 11, Article number 935, 13 pages, (2020). DOI: [10.1140/epjp/s13360-020-00949-w](https://doi.org/10.1140/epjp/s13360-020-00949-w)
174. **Sofyan A. Taya**, Nael Doghmosh, Zaher M. Nassar, Murugan Senthil Mani Rajan, Vigneswaran D, "Refractometric sensor based on slab waveguides of simultaneously negative permittivity and permeability materials", *Optical and Quantum Electronics*, *Opt. Quant. Electron.*, Vol. 52, No. 12, Article number 512, 19 pages (2020). DOI: [10.1007/s11082-020-02631-y](https://doi.org/10.1007/s11082-020-02631-y)
175. **Sofyan A Taya**, Nael Doghmosh, Anas A. Alkanoo, Vigneswaran Dhasarathan, N R Ramanujam, IS Amiri, "Waveguides including negative permeability and simultaneously negative permittivity and permeability materials for sensing applications", *Optik - International Journal for Light and Electron Optics*, Vol. 228, Article 166147, Febryary 2021, <https://doi.org/10.1016/j.ijleo.2020.166147>.
176. **Sofyan A. Taya**, Nael Doghmosh and Anurag Upadhyay, "Properties of defect modes and band gaps of mirror symmetric metal-dielectric 1D photonic crystals", *Optical and Quantum Electronics*, *Opt. Quant. Electron.*, Vol. 53, No. 1, Article number 35, 11 pages (2021). DOI: [10.1007/s11082-020-02669-y](https://doi.org/10.1007/s11082-020-02669-y).
177. Aya J. Hussein, **Sofyan A. Taya**, D. Vigneswaran, R. Udiyakumar, Anurag Upadhyay, Toni Anwar, Iraj S. Amiri, "Universal dispersion curves of a planar waveguide with an exponential graded-index guiding layer and a nonlinear cladding", *Results in Physics*, Vol. 20, Article 103734, 6 pages, January (2021) <https://doi.org/10.1016/j.rinp.2020.103734>
178. Anurag Upadhyay, Shivam Singh, Divya Sharma, **Sofyan A. Taya**, "A highly birefringent bend insensitive porous core PCF for endlessly single-mode operation in THz regime: An analysis with core porosity", *Applied nanoscience*, Vol. 11, No. 3, 1021–1030, 2021. DOI: [10.1007/s13204-020-01664-9](https://doi.org/10.1007/s13204-020-01664-9)
179. Anurag Upadhyay, Shivam Singh, Divya Sharma, **Sofyan A. Taya**, "Analysis of Proposed PCF with Square Air Hole for Revolutionary High Birefringence and Nonlinearity", *Photonics and Nanostructures - Fundamentals and Applications*, Vol. 43, February 2021, article 100896. <https://doi.org/10.1016/j.photonics.2021.100896>
180. Anurag Upadhyay, Shivam Singh, Divya Sharma, **Sofyan A. Taya**, "An Ultra-High Birefringent and Nonlinear Decahedron Photonic Crystal Fiber Employing Molybdenum Disulphide (MoS₂): A Numerical Analysis", *Materials Science and Engineering B*, Vol. 270, August 2021, article 115236. <https://doi.org/10.1016/j.mseb.2021.115236>
181. Aya J. Hussein, Zaher M. Nassar and **Sofyan A. Taya**, "Dispersion properties of slab waveguides with a linear graded-index film and a nonlinear substrate", *Microsystem Technologies*, Vol. 27, No. 7, 2589 – 2594 (2021). DOI: [10.1007/s00542-020-05016-z](https://doi.org/10.1007/s00542-020-05016-z)
182. **Sofyan A. Taya**, Nael Doghmosh, Mariam A. Abutailkh, Anurag Upadhyay, Zaher M. Nassar, Ilhami Colak, "Properties of band gap for p-polarized wave propagating in a binary superconductor-dielectric photonic crystal",

- International Journal for Light and Electron Optics (Optik), Volume 243, October 2021, 167505. <https://doi.org/10.1016/j.ijleo.2021.167505>
183. Nael Doghmosh, **Sofyan A. Taya**, Anurag Upadhyay, Melad M. Olaimat, Ilhami Colak, “Enhancement of optical visible wavelength region selective reflector for photovoltaic cell applications using a ternary photonic crystal”, International Journal for Light and Electron Optics (Optik), Volume 243, October 2021, 167491. <https://doi.org/10.1016/j.ijleo.2021.167491>
184. **Sofyan A. Taya**, Noor E. Al-Ashi, Omar M. Ramahi, Ilhami Colak, I.S. Amiri, Surface plasmon resonance-based optical sensor using a thin layer of plasma, Journal of the Optical Society of America B, J. Opt. Soc. Am. B, Vol. 38, No. 8, 2362-2367 (2021). <https://doi.org/10.1364/JOSAB.420129>
185. Mohammed S. Al-Qrinawi, Taher M. El-Agez, Monzir S. Abdel-Latif, **Sofyan A. Taya**, Capacitance-voltage measurements of hetero-layer OLEDs treated by an electric field and thermal annealing, International Journal of Thin Film Science and Technology, Vol. 10, No. 3, 217 – 226, Sep. 2021. [doi:10.18576/ijtfst/100311](https://doi.org/10.18576/ijtfst/100311)
186. **Sofyan A. Taya**, Ilhami Colak, Bhuvneshwer Suthar, Omar M. Ramahi, “Cancer cell detector based on a slab waveguide of anisotropic, lossy and dispersive left-handed material”, Applied Optics, Appl. Opt., Vol. 60, No. 27, 8360 – 8367 (2021). DOI: 10.1364/AO.437738.
187. **Sofyan A. Taya**, Aya J. Hussein, Omar M. Ramahi, Ilhami Colak, Youcef Braham Chaouche, “Dispersion curves of a slab waveguide with a nonlinear covering medium and an exponential graded-index thin film (TM case)” Journal of the Optical Society of America B, J. Opt. Soc. Am. B, Vol. 38, No. 11, 3237-3243 (2021). <https://doi.org/10.1364/JOSAB.439034>
188. **Sofyan A. Taya**, Mariam A. Abutailkh, Ilhami Colak, Omar M. Ramahi, “Modelling of three tunable multichannel filters using Ag metal as a defect layer in a photonic crystal”, Optical and Quantum Electronics, Opt. Quant. Electron., Vol. 53, No. 11, Article number 644, 15 pages (2021). DOI: 10.1007/s11082-021-03307-x
189. **Sofyan A. Taya**, Malek G. Daher, Ilhami Colak, Omar M. Ramahi, “Highly sensitive nano-sensor based on a binary photonic crystal for the detection of mycobacterium tuberculosis bacteria”, Journal of Materials Science Materials in Electronics, Vol. 32, No. 24, 28406-28416, (2021). 10.1007/s10854-021-07220-7
190. Malek G. Daher, **Sofyan A. Taya**, Ilhami Colak, Omar M. Ramahi, “Design of a novel optical sensor for the detection of waterborne bacteria based on a photonic crystal with an ultra-high sensitivity”, Optical and Quantum Electronics, Opt. Quant. Electron., Vol. 54, No. 2, Article number 108, 18 pages (2022). DOI: 10.1007/s11082-021-03486-7.
191. **Sofyan A. Taya**, Dana N. Alhamss, Ilhami Colak, Shobhit K. Patel, “Sensitivity enhancement of an optical sensor based on a binary photonic crystal for the detection of Escherichia coli by controlling the central wavelength and the angle of incidence”, Optical and Quantum Electronics, Opt. Quant. Electron., Vol. 54, No. 2, Article number 127, 17 pages (2022). DOI: 10.1007/s11082-022-03511-3

192. **Sofyan A. Taya**, Arvind Sharma, Nael Doghmosh, Ilhami Colak, "Detection of water concentration in ethanol solution using a ternary photonic crystal-based sensor", *Materials Chemistry and Physics*, Volume 279, March 2022, 125772. <https://doi.org/10.1016/j.matchemphys.2022.125772>.
193. Dana N. Alhamss, **Sofyan A. Taya**, Ilhami Colak, Shobhit K. Patel, "Properties of the defect mode of a ternary photonic crystal having an n-doped semiconductor as a defect layer: TE case", *Materials Science in Semiconductor Processing*, Volume 144 (2022) 106626. <https://doi.org/10.1016/j.mssp.2022.106626>
194. Feng Wu, Xiaoqing Li, Xiufeng Fan, Ling Lin, **Sofyan A. Taya**, Abinash Panda, "Wide-angle absorption based on angle-insensitive band edge in photonic crystal containing hyperbolic metamaterials", *Photonics*, Vol. 9, No. 3, Article Number 181, 13 page (2022) <https://doi.org/10.3390/photonics9030181>
195. Vishal Sorathiya, Shobhit K. Patel, Kawsar Ahmed, **Sofyan A. Taya**, Sudipta Das, Ch Murali Krishna, "Multi-layered graphene silica-metasurface based infrared polarizer structure", *Optical and Quantum Electronics, Opt. Quant. Electron.*, Vol. 54, No. 4, Article number 254 (2022).
196. Shobhit K. Patel, Juveriya Parmar, Jaymit Surve, Sudipta Das, Boddapati Taraka Phani Madhav, and **Sofyan Taya**, "Metamaterial-based refractive index sensor using $\text{Ge}_2\text{Sb}_2\text{Te}_5$ substrate for glucose detection", *Microwave and Optical Technology Letters*, Volume 64, Issue 5, 867-872 (2022). DOI: 10.1002/mop.33204
197. Malek G. Daher, **Sofyan A. Taya**, Ilhami Colak, Dhasarathan Vigneswaran, Melad M. Olaimat, Shobhit K. Patel, Omar M. Ramahi, Abdulkarem H. M. Almawgani, "Design of a nano-sensor for cancer cell detection based on a ternary photonic crystal with high sensitivity and low detection limit", *Chinese Journal of Physics*, Vol. 77, Pages 1168-1181, (2022). <https://doi.org/10.1016/j.cjph.2022.03.032>
198. Malek G. Daher, **Sofyan A. Taya**, Ilhami Colak, Shobhit K. Patel, Melad M. Olaimat, Omar Ramahi, "Surface plasmon resonance biosensor based on graphene layer for the detection of waterborne bacteria", *Journal of Biophotonics*, Vol. 15, No. 5, e202200001, May 2022. DOI: 10.1002/jbio.202200001.
199. Abdulkarem H. M. Almawgani, **Sofyan A. Taya**, Malek G. Daher, Ilhami Colak, Feng Wu, Shobhit K. Patel, "Detection of glucose concentration using a surface plasmon resonance biosensor based on barium titanate layers and molybdenum disulphide sheets", *Physica Scripta, Phys. Scr.* Vol. 97, 065501, (2022). <https://doi.org/10.1088/1402-4896/ac68ad>
200. Shobhit K. Patel, Sunil P. Lavadiya, Juveriya Parmar, Kawsar Ahmed, **Sofyan A. Taya**, Sudipta Das, " Low-cost, multiband, high gain and reconfigurable microstrip radiating structure using PIN diode for 5G/Wi-MAX/WLAN applications", *Physica B: Physics of Condensed Matter*, Vol. 639, 413972, (2022). <https://doi.org/10.1016/j.physb.2022.413972>
201. Anurag Upadhyay, Shivam Singh, Divya Sharma, **Sofyan A. Taya**, "A comprehensive study of large negative dispersion and highly nonlinear perforated core PCF: theoretical insight", *Physica Scripta, Phys. Scr.* Vol. 97, 065504, (2022). <https://doi.org/10.1088/1402-4896/ac6d1a>

202. Abdulkarem H. M. Almawgani, **Sofyan A. Taya**, Aya J. Hussein, Ilhami Colak, "Dispersion properties of a slab waveguide with a graded-index core layer and a nonlinear cladding using the WKB approximation method", *Journal of the Optical Society of America B*, *J. Opt. Soc. Am. B*, Vol. 39, No. 6, 1606-1613 (2022).
203. **Sofyan A. Taya**, Omar M. Ramahi, Mariam A. Abutailkh, Nael Doghmosh, Zaher M. Nassar, Anurag Upadhyay, Ilhami Colak "Investigation of bandgap properties in one-dimensional binary superconductor-dielectric photonic crystal: TE case", *Indian Journal of Physics*, *Indian J. Phys.*, Vol. 96, No. 7, 2151-2160, (2022). DOI: 10.1007/s12648-021-02151-9.
204. **Sofyan A. Taya**, Aya J. Hussein, Ilhami Colak, "An exact solution of a slab waveguide dispersion relation with a linear graded-index guiding layer (TM case)", *Microsystem Technologies*, Vol. 28, No. 5, 1213-1219 (2022). <https://doi.org/10.1007/s00542-022-05281-0>
205. Shobhit K Patel, Jaymit Surve, Juveriya Parmar, Vijay Katkar, Rajendrasinh Jadeja, **Sofyan A. Taya**, Kawsar Ahmed, "Graphene-based metasurface solar absorber design for the visible and near-infrared region with behavior prediction using Polynomial Regression", *Optik - International Journal for Light and Electron Optics*, Vol. 262, 169298 (2022). <https://doi.org/10.1016/j.ijleo.2022.169298>.
206. Preecha Yupapin, Youssef Trabelsi, Dhasarathan Vigneswaran, **Sofyan A. Taya**, Malek G. Daher, Ilhami Colak, "Ultra-high-sensitive sensor based on surface plasmon resonance structure having Si and graphene layers for the detection of chikungunya virus", *Plasmonics*, Vol. 17, No. 3, 1315-1321 (2022), DOI: 10.1007/s11468-022-01631-w.
207. Abdulkarem H. M. Almawgani, **Sofyan A. Taya**, Mariam A. Abutailkh, Nael Doghmosh, Ilhami Colak, "Refractometric and temperature sensors based on one-dimensional binary photonic crystal including a superconducting layer", *Cryogenics*, Vol. 125, 103498 (2022). <https://doi.org/10.1016/j.cryogenics.2022.103498>
208. Shobhit K.Patel, Jaymit Surve, Priya Prajapati, **Sofyan A. Taya**, "Design of an ultra-wideband solar energy absorber with wide-angle and polarization independent characteristics", *Optical materials*, Vol. 131, 112683 (2022).
209. Abdulkarem H. M. Almawgani, **Sofyan A. Taya**, Sahar M. AbuIbaid, Dana N. Alhamss and Ilhami Colak, "Optimization of the temperature dependence of a defect mode in a binary defective photonic crystal", *International Journal of Modern Physics B*, Vol. 36, No. 19, Article number 2250110 (14 pages) (2022). <https://dx.doi.org/10.1142/S0217979222501107>
210. Abdulkarem H. M. Almawgani, Malek G. Daher, **Sofyan A. Taya**, Mohammad Mashagbeh and Ilhami Colak, "Optical Detection of Fat Concentration in Milk Using MXene-Based Surface Plasmon Resonance Structure", *Biosensors*, Vol. 12, No. 7, article number 535 (2022). <https://doi.org/10.3390/bios12070535>
211. **Sofyan A. Taya** and Malek G. Daher, "Properties of Defect Modes of One-dimensional Quaternary Defective Photonic Crystal Nanostructure", *International Journal of Smart Grid*, Vol.12, No.2, 29-39 (2022).
212. Abdulkarem H. M. Almawgani, Malek G. Daher, **Sofyan A. Taya**, Ilhami Colak, Shobhit K. Patel, Omar M. Ramahi, "Highly sensitive nano-

- biosensor based on a binary photonic crystal for cancer cell detection”, *Optical and Quantum Electronics, Opt. Quant. Electron.*, Vol. 54, No. 9, Article number 554 (2022). <https://doi.org/10.1007/s11082-022-03978-0>
213. Abdulkarem H. M. Almawgani, Bhuvneshwer Suthar, Anami Bhargava, **Sofyan A. Taya**, Malek G. Daher, Feng Wu, Ilhami Colak, “Sucrose concentration detector based on a binary photonic crystal with a defect layer and two nanocomposite layers”, *Zeitschrift für Naturforschung A - A Journal of Physical Sciences*. <https://doi.org/10.1515/zna-2022-0126> (In Press).
214. Abdulkarem H. M. Almawgani, Malek G. Daher, **Sofyan A. Taya**, Melad M. Olaimat, Adam R. H. Alhawari, Ilhami Colak, “Detection of blood plasma concentration theoretically using SPR-based biosensor employing black phosphor layers and different metals”, *Plasmonics*, DOI:10.1007/s11468-022-01662-3 (In Press)
215. Nael Doghmosh, **Sofyan A. Taya**, Zaher M. Nassar, Ilhami Colak, “Defect mode and bandgap properties of a ternary photonic crystal with a nanocomposite defect layer”, *Indian Journal of Physics*, *Indian J. Phys.* DOI: 10.1007/s12648-021-02249-0 (In Press).
216. **Sofyan A. Taya**, Sahar M. Abulbaid, Dana N. Alhamss, Shobhit K. Patel, Ilhami Colak, Abdulkarem H. M. Almawgani, “Back reflector coating using a photonic crystal for highly efficient solar cells using a new metamaterial with the most extreme positive index of refraction”, *Indian Journal of Physics*, *Indian J. Phys.* DOI: 10.1007/s12648-022-02403-2 (In Press).