

List of Publications

Published papers (Journal + conference proceedings): 133 (as of July, 2021)

 <https://scholar.google.com/citations?hl=en&user=UclSx6kAAAAJ>

 https://www.researchgate.net/profile/M_Alam23

 <https://orcid.org/0000-0002-1229-4443>

 www.linkedin.com/in/dr-md-shah-alam

Book Chapter

(1) **M. Shah Alam**, “Solar Home System Design,” chapter 5 in the book entitled “Solar Home System”, published by GIZ, Dhaka, Bangladesh, March 2013.

Peer Reviewed Journals

(48) M. Z. Alam, M. I. Tahmid, S. T. Mouna, M. A. Islam, and **M. Shah Alam**, “Design of a Novel Star Type Photonic Crystal Fiber for Mid-Infrared Supercontinuum Generation,” *Optics Communications*, 500 (2021) 127322, <https://doi.org/10.1016/j.optcom.2021.127322>

(47) M. F. Hassan, R. H. Sagor, M. R. Amin, M. R. Islam, and **M. Shah Alam**, “Point of Care Detection of Blood Electrolytes and Glucose Utilizing Nano-Dot Enhanced Refractive Index Based Plasmonic Biosensor,” *IEEE Sensors Journal*, <http://doi.org/10.1109/JSEN.2021.3082756>

(46) K. M. M. Rahman, **M. Shah Alam**, R. Ahmed, and M. Asiful Islam, “Irregular Hexagonal Core Based Surface Plasmon Resonance Sensor in Near-infrared Region,” *Results in Physics*, 23 (2021) 103983, <https://doi.org/10.1016/j.rinp.2021.103983>

(45) M. M. H. Polash, S. Biswas, and **M. Shah Alam**, “Comprehensive Optimization of Electronic and Optical Properties of Polar III-Nitride Laser,” *Applied Physics B: Lasers and Optics*, vol. 127, 30, Feb. 2021, <https://doi.org/10.1007/s00340-021-07578-w>

(44) K. B. M. Rakib Hasan, M. Asiful Islam, and **M. Shah Alam**, “Design of a Broadband Single Mode Hybrid Plasmonic Waveguide Incorporating Silicon Nanowire,” *Optical Materials Express*, vol. 10, no. 11, pp. 2783-2799, Nov. 2020, <https://doi.org/10.1364/OME.405037>

(43) K. B. M. Rakib Hasan, Md. Asiful Islam, and **M. Shah Alam**, “Small footprint symmetrical graphene hybrid plasmonic waveguides for high-speed broadband optical modulation,” *J. Opt. Soc. Am. B*, vol. 37, issue 9, pp. 2696-2706, Sept. 2020, <https://doi.org/10.1364/JOSAB.390775>

(42) Md. Sazzad Hossain, Md. Towsif Abir, J. L. Volakis, **M. Shah Alam**, Md. Asiful Islam, “A Phase Decomposition Algorithm for Multiphase Flows Using Electrical Capacitance Tomography,” *IEEE Sensors Journal*, vol. 20, issue: 24, pp. 14924-14931, Dec. 2020, <https://doi.org/10.1109/JSEN.2020.3009673>

- (41) Zahidur Rahman, Md. Ashfaqur Rahman, Md. Asiful Islam, and **M. Shah Alam**, “Design of an Elliptical Air-Hole Dual-Core Photonic Crystal Fiber for Over Two Octaves Spanning Supercontinuum Generation,” *J. of Nanophotonics*, SPIE, vol. 13, no. 4, 046013, Oct-Dec. 2019, <https://doi.org/10.1117/1.JNP.13.046013>
- (40) K. B. M. Rakib Hasan, M. A. Noman Sarker, M. A. Islam, and **M. Shah Alam**, “Coupling Characteristics of Surface Plasmons in Coupled Elliptical Nanowires”, *OSA Continuum*, vol. 1, no. 4, pp. 1414-1428, 15 Dec. 2018.
- (39) M. Ababil Hossain and **M. Shah Alam**, “Performance Evaluation of Rectangular Microstrip Patch Antennas Loaded with Plastic and Barium-Titanate Substrates at GSM 1800 MHz Band,” *Journal of Antennas and Propagation*, vol. 6, pp. 36-42, Sept. 2018, <https://doi.org/10.4236/ojapr.2018.63004>.
- (38) M. M. H. Polash, **M. Shah Alam** and S. Biswas, “Design and Analysis of InN-In_{0.25}Ga_{0.75}N Single Quantum Well Laser for Short Distance Communication Wavelength,” *Optical Engineering, SPIE*, vol. 57, no. 3, pp. 036110 (1-7), March 2018
- (37) M. M. H. Polash and **M. Shah Alam**, “Characterization of InN-In_{0.25}Ga_{0.75}N Quantum Well Laser Structure for 1330 nm Wavelength,” *ECS Transactions*, vol. 69, no. 12, pp. 71-80, 2015.
- (36) M. M. H. Polash and **M. Shah Alam**, “Optical Gain Optimization of Al_{0.8}Ga_{0.2}N-Delta-GaN Quantum Well Laser in Ultraviolet Spectra Using Genetic Algorithm,” *ECS Transactions*, vol. 69, no. 12, pp. 81-90, 2015.
- (35) M. A. Islam and **M. Shah Alam**, “Ultralarge Negative Dispersion Single Polarization Photonic Crystal Fiber,” *Optical Engineering, SPIE*, vol. 53, no. 9, pp. 090501(1-3), Sept. 2014.
- (34) D. Hasan and **M. Shah Alam**, “Ultra-Broadband Confinement in Deep Sub-Wavelength Air Hole of a Suspended Core Fiber,” *IEEE/OSA Journal of Lightwave Technology*, vol. 32, no. 8, pp. 1434–1441, April 15, 2014.
- (33) A. A. Siraji and **M. Shah Alam**, “Improved Calculation of Electronic and Optical Properties of Tetragonal Barium Titanate,” *Journal of Electronic Materials*, Springer, vol. 43, no. 5, pp. 1443—1449, Apr. 2014.
- (32) M. A. Islam and **M. Shah Alam**, “An Extremely Large Mode Area Microstructured Core Leakage Channel Fiber with Low Bending Loss,” *IEEE/OSA Journal of Lightwave Technology*, vol. 32, no. 2, pp. 250—256, Jan. 2014.
- (31) M. A. Islam and **M. Shah Alam**, “Equiangular spiral photonic crystal fibers with low bending loss,” *Optical Engineering, SPIE*, vol. 52, no. 10, pp. 100502(1-3), Oct. 2013.
- (30) A. A. Siraji and **M. Shah Alam**, “A Tunable Photonic Double Heterostructure Cavity on Ferroelectric Barium Titanate,” *IEEE Photonics Technology Letters*, vol. 25, no. 17, pp. 1676-1679, Sept. 2013.
- (29) M. A. Islam and **M. Shah Alam**, “Bend insensitive single mode photonic crystal fiber with ultralarge effective area for dual applications,” *Optical Engineering, SPIE*, vol. 52, no. 5, pp. 050501(1-3), May 2013.
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- (27) S. Das, A. J. Dutta, N. Patwary, and **M. Shah Alam**, “Characteristic Analysis of Hydraulic Stress Effects on Propagation Properties of PANDA Fiber,” *Journal of AUST (Ahsanullah University of Science and Technology)*, vol. 3, no. 2, pp. 88—98, July 2011 (published in January 2013).
- (26) M. A. Islam and **M. Shah Alam**, “Design Optimization of Equiangular Spiral Photonic Crystal Fiber for Large Negative Flat Dispersion and High Birefringence,” *IEEE/OSA Journal of Lightwave Technology*, vol. 30, no. 22, pp. 3545—3551, November 2012.

- (25) M. A. Islam and **M. Shah Alam**, "Design of a Polarization Maintaining Equiangular Spiral Photonic Crystal Fiber for Residual Dispersion Compensation Over $E+S+C+L+U$ Wavelength Bands," *IEEE Photonics Technology Letter*, vol. 24, no. 11, pp. 930—932, June 2012.
- (24) I. Zareen, **M. Shah Alam**, and M. Amin, "Analysis of Microwave and Optical Devices by Using Quasi-TEM Finite Element Technique," *Journal of Electrical Engineering, The Institution of Engineers, Bangladesh*, vol. EE 37, no. 2, pp. 15-21, Dec. 2011.
- (23) K. M. Mohsin, **M. Shah Alam**, D. M. N. Hasan, and M. N. Hossain, "Dispersion and nonlinearity properties of a chalcogenide As_2Se_3 suspended core fiber," *Applied Optics, Journal of OSA*, vol. 50, no. 25, pp. E102-E107, September 2011.
- (22) M. N. Hossain, **M. Shah Alam**, D. M. N. Hasan, and K. M. Mohsin, "Design of a Spiral Silica Photonic Crystal Fiber for Nonlinear Applications in Visible Region," *Optical Engineering, SPIE*, vol. 50, no. 7, pp. 070503(1-3), July 2011.
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- (20) M. N. Hossain, **M. Shah Alam**, D. M. N. Hasan, and K. M. Mohsin, "A Highly Nonlinear Spiral Photonic Crystal Fiber for Tailoring Two Zero Dispersion Wavelengths in the Visible Region," *Photonics Letters of Poland*, ISSN: 2080-2242, vol. 2, no. 3, pp. 143—145, Sept. 2010.
- (19) M. N. Hossain, **M. Shah Alam**, K. M. Mohsin, and D. M. N. Hasan, "Electronic Tunability of Zero Dispersion Wavelengths in a Spiral Photonic Crystal Fiber for Supercontinuum Generation in the Communication Window," *SPIE proceedings*, vol. 8173, 81731E, 2010.
- (18) **M. Shah Alam**, M. K. Hassan, and M. S. Ali, "Characteristic Analysis of Traveling Wave Electrooptic Modulators on Lithium Niobate Substrate," *International Journal of Microwave and Optical Technology (IJMOT)*, ISSN: 1553-0396, vol. 5, no. 3, pp. 166-175, May 2010.
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- (12) M. J. Uddin and **M. Shah Alam**, "Dispersion and Confinement Loss of Photonic Crystal Fiber," *Asian Journal of Information Technology*, vol. 7, no. 8, pp. 344-349, Oct. 2008.
- (11) M. S. Ali and **M. Shah Alam**, "Static Analysis of CPW for Mach-Zehnder Modulators," *Journal of Electrical Engineering, The Institution of Engineers, Bangladesh*, pp. 121—124, vol. EE 32, no. I & II, Dec. 2005.
- (10) B. M. A. Rahman, T. Wongcharoen, C. Themistos, R. Abdallah, A. K. M. S. Kabir, E. O. Ladele, N. Somasiri, **M. Shah Alam**, M. Rajarajan, and K. T. V. Grattan, "Finite element characterization of photonic devices for optical communications," *IEE Proceedings Circuits, Devices, & Systems*, vol. 152, no. 5, pp. 532-538, Oct. 2005.

- (9) **M. Shah Alam**, K. Saitoh, and M. Koshiba, "High group birefringence in air-core photonic bandgap fibers," *Optics Letters, Optical Society of America (OSA)*, vol. 30, no. 8, pp. 824–826, Apr. 2005.
- (8) **M. Shah Alam** and L. Akter, "On Complex Modal Solutions in Lossless Planar Transmission Lines," *Journal of Electrical Engineering, The Institute of Engineers, Bangladesh*, pp. 17-21, vol. EE 29, no. 2, Dec, 2001 and EE 30, no.1, June 2002.
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- (2) **M. Shah Alam**, K. Hirayama, Y. Hayashi, and M. Koshiba, "Finite element analysis of propagating, evanescent, and complex modes in finlines," *IEE Proceedings on Microwaves, Antennas and Propagation, Part H*, vol. 141, no. 2, pp. 65--69, Apr. 1994.
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c) Conferences (national and international conferences)

i) Proceedings of International Conferences

- (85) Md. Al-Imran Abir, Sumnoon Ahmed, **M. Shah Alam**, and Md. Asiful Islam, "Application of a Complementary Split Ring Resonator Based Biosensor for Detection of Micromolar Glucose Concentrations in Aqueous Solution," published in the proceedings of Eleventh International Conference on Electrical and Computer Engineering, ICECE 2020 (virtual), pp. 153-156, 17-19 December 2020, Dhaka, Bangladesh, to be published in IEEE Xplore.
- (84) Mahdi Zulfikar, Md. Asiful Islam, and **M. Shah Alam**, "Surface Enhanced Raman Scattering of Silver Nanoparticles with Slot Waveguide," published in the proceedings of Eleventh International Conference on Electrical and Computer Engineering, ICECE 2020 (virtual), pp. 369-372, 17-19 December 2020, Dhaka, Bangladesh, to be published in IEEE Xplore.
- (83) K. B. M. Rakib Hasan, Md. Asiful Islam, and **M. Shah Alam**, "Design of a Broadband Hybrid Plasmonic Waveguide for High Bulk Index Sensitivity," published in the proceedings of Eleventh International Conference on Electrical and Computer Engineering, ICECE 2020 (virtual), pp. 365-368, 17-19 December 2020, Dhaka, Bangladesh, to be published in IEEE Xplore.

(82) M. Rahman, Z. Rahman, R. Shaikh, I. Alam, M. A. Islam, and **M. Shah Alam**, "Design and Analysis of Elliptical Microstrip Patch Antenna at 3.5 GHz for 5G Applications," published in the proceedings of TENSYP 2020 held in June 2020, Dhaka, Bangladesh, to be published in IEEE Xplore.

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(80) Israt Rahman, Pragati Gupta, Zakia Tamanna Tisha, Shahba Tasmiya Mouna, and **M. Shah Alam**, "Performance Analysis and Comparison of Silicon and Silica Nanowire Based Biochemical Sensors," *Proceedings of 3rd International Conference on Telecommunication and Photonics (ICTP) 2019*, held in Dec. 2019, BUET, Dhaka, published in IEEE Xplore.

(79) Shahba Tasmiya Mouna, A K M Ahasan Habib, and **M. Shah Alam**, "Design and Analysis of Supercontinuum Generating Hybrid Polymer Photonic Crystal Fiber for Medical Imaging," *Proceedings of 3rd International Conference on Telecommunication and Photonics (ICTP) 2019*, held in Dec. 2019, BUET, Dhaka, published in IEEE Xplore.

(78) **M. Shah Alam**, K. B. M. Rakib Hasan, and M. A. Islam, "Highspeed Broadband Optical Modulation using Symmetrical Metal-Insulator-Metal Graphene Hybrid Plasmonic Waveguide," *19th International Conference on Numerical Simulation of Optoelectronic Devices, NUSOD 2019*, 8-12 July 2019, Ottawa, Canada, Published in IEEE Xplore.

(77) K. B. M. Rakib Hasan, Md. Asiful Islam, and **M. Shah Alam**, "Highspeed Broadband Optical Modulation with Small Footprint Symmetrical IMI Graphene Hybrid Plasmonic Waveguide," *2019 IEEE MTT-S International Conference on Numerical Electromagnetic and Multiphysics Modeling and Optimization (NEMO)*, May 29-31, 2019 in Boston, MA, USA, Published in IEEE Xplore.

(76) Zahidur Rahman, Md. Ashfaqur Rahman, Md. Asiful Islam, and **M. Shah Alam**, "Over Two Octave Spanning Visible and Near-IR Supercontinuum Generation in Dual-Core PCF," *Proceedings of Tenth International Conference on Electrical and Computer Engineering, ICECE 2018*, pp. 421-424, 20-22 December 2018, Dhaka, Bangladesh. Published in IEEE Xplore.

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- (69) Mohammad Shafiul Alam and **M. Shah Alam**, “Propagation of Surface Plasmon Polaritons in Hybrid Waveguide with Metal Cap and Graphene Layer,” Proceedings of ICEEicT 2018, held in MIST, Dhaka, Bangladesh in September 2018, to be published in IEEE Xplore.
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- (66) Md. Abdullah-Al-Noman Sarker, K. B. M. Rakib Hasan, and **M. Shah Alam**, “Highly Confined Plasmon Modes in a Finite Nonplanar Hybrid Structure,” *Proceedings of 2nd International Conference on Telecommunication and Photonics (ICTP) 2017*, held in Dec. 2017, BUET, Dhaka, published in IEEE Xplore.
- (65) Nazifa Rumman, Maisha Mesbah, Tasmina Mahmud, and **M. Shah Alam**, “Analysis of a Silica Cladded Silicon Nanowire Having a Deep Sub-Wavelength Central Air Hole,” *Proceedings of Ninth International Conference on Electrical and Computer Engineering, ICECE 2016*, pp. --, 20-22 December 2016, Dhaka, Bangladesh. Published in IEEE Xplore.
- (64) M. S. Islam, M. S. Alam, and **M. Shah Alam**, “Effect of Lower Index Dielectric Coating on Plasmon Polaritons Guided by Finite Metal Stripes,” *Proceedings of 1st International Conference on Telecommunication and Photonics (ICTP) 2015*, 26-28 Dec. 2015, IAC, BUET, Dhaka, published in IEEE Xplore.
- (63) M. M. H. Polash and **M. Shah Alam**, “Investigation of Performance Characteristics of an Al_{0.8}Ga_{0.2}N-delta-GaN QW Laser Considering Structural Parameters,” *Proceedings of 1st International Conference on Telecommunication and Photonics (ICTP) 2015*, 26-28 Dec. 2015, IAC, BUET, Dhaka, published in IEEE Xplore.
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- (59) A. Mamun, M. A. Islam, and **M. S. Alam**, “A square lattice photonic crystal fiber based surface plasmon resonance sensor with high sensitivity,” Published in the Proceedings of ICEEicT 2014, held in MIST, Dhaka, Bangladesh in April 2014, published in IEEE Xplore.
- (58) M. M. H. Polash and **M. S. Alam**, “Design Analysis of InN/InGa_N Quantum Well Laser with GaN Layers at 1320-1350 nm Wavelength” Published in the Proceedings of ICEEicT 2014, held in MIST, Dhaka, Bangladesh in April 2014, published in IEEE Xplore.
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- (51) K. M. Mohsin, D. M. N. Hasan, M. N. Hossain, and **M. S. Alam**, "Tailoring Dispersion of Chalcogenide As_2Se_3 Suspended Core Fiber," *Proceedings of Photonics 2010: 10th International Conference on Fiber Optics and Photonics (will be available in OSA's Optics Infobase)*, Paper: 354-OFT_PC, 11-15 December 2010, Guwahati, India.
- (50) M. N. Hossain, K. M. Mohsin, D. M. N. Hasan, and **M. S. Alam**, "Electronic Tunability of Zero Dispersion Wavelengths in a Spiral Photonic Crystal Fiber for Supercontinuum Generation in the Communication Window," *Proceedings of Photonics 2010: 10th International Conference on Fiber Optics and Photonics (will be available in OSA's Optics Infobase)*, Paper: 358-OFT_PC, 11-15 December 2010, Guwahati, India, SPIE proceedings, vol. 8173, 81731E (2010)
- (49) D. M. N. Hasan, **M. S. Alam**, K. M. Mohsin, and M. N. Hossain, "Analysis of Dispersion and Nonlinear Loss Characteristics of Silica Clad Silicon Nanowire," *Proceedings of Conference on Optoelectronic and Microelectronic Materials and Devices (COMMAD2010)*, pp. 39-40, 12-15 December, 2010, Canberra, Australia.
- (48) D. M. N. Hasan, **M. S. Alam**, M. N. Hossain, "Dispersion and Birefringence Properties of a Novel As_2Se_3 - Photonic Crystal Fiber Nanowire," *Proceedings of Photonics Global Conference (PGC2010)*, 14-16 December, 2010, Singapore.
- (47) D. M. N. Hasan, **M. S. Alam**, K.M. Mohsin, and M. N. Hossain, "Comparative Analysis of Propagation Characteristics of Two Triangular Lattice Photonic Crystal Fibers in the Middle Infrared Spectrum," *Proceedings of Sixth International Conference on Electrical and Computer Engineering, ICECE 2010*, pp. 123-126, 18-20 December 2010, Dhaka, Bangladesh.
- (46) D. M. N. Hasan, **M. S. Alam**, M. N. Hossain, and K. M. Mohsin, "Design and Characterization of a Novel Spiral Photonic Crystal Fiber Nanowire for Visible Range Applications," *Proceedings of Sixth International Conference on Electrical and Computer Engineering, ICECE 2010*, pp. 116-119, 18-20 December 2010, Dhaka, Bangladesh.
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