

CURRICULUM VITAE



Dr. Md. Shah Alam

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CONTACTS

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CAREER OBJECTIVE

To work as a Professor of Electrical and Electronic Engineering, develop a strong teaching and research program, supervise high quality graduate theses, and work for the nation.

EDUCATION

- 1997 **Doctor's degree (Ph.D.)** in *Electronic Engineering*, Hokkaido University, Sapporo 060, Japan.
- 1994 **Master's degree (M. Eng.)** in *Electrical & Electronic Engineering*, Kitami Institute of Technology, Kitami 090, Japan
- 1989 **Bachelor's degree (B.Sc.)** in *Electrical & Electronic Engineering, First Class First*, Bangladesh Institute of Technology, Rajshahi (now Rajshahi University of Engineering and Technology (RUET)), Bangladesh.
- 1984 **Higher Secondary Certificate (HSC)**, Rajshahi Board of Education, 1st division with 4th position (marks: 88.5%) in the combined merit list, Rajshahi College, Rajshahi, Bangladesh.
- 1982 **Secondary School Certificate (SSC)**, Rajshahi Board of Education, 1st division with 4th position (marks: 83.2%) in the combined merit list, Govt. Laboratory High School, Rajshahi, Bangladesh.

RESEARCH INTEREST

Guided Wave Photonic Devices, Electrooptic Modulators, Optical Fibers and Photonic Crystal Fibers, Nanowires, Surface Plasmons, Metamaterials, Lasers, Microwave Integrated Circuits, Solar Power Systems.

TEACHING INTEREST

Undergraduate Level: Engineering Electromagnetics, Continuous Signals and Linear Systems, Communication Systems, Microwave Engineering, Telecommunication Engineering, Electrical Circuits, Electronic Circuits, Numerical Techniques, Energy Conversions, Power Systems
Graduate Level: Applied EM Theory, Antenna and Propagation, Optical Waveguide Theory

EXPERIENCE

Over 28 years of research and teaching (undergraduate and post-graduate) experience.

WORK EXPERIENCE

- 1998 – to date **Department of EEE, BUET, Dhaka, Bangladesh:**
Professor (July 02, 2011 – to date), Associate Professor (Dec. 28, 2004 – July 01, 2011),
Assistant Professor (Dec. 29, 1998 – Dec. 27, 2004), Lecturer (Feb. 25, 1998 – Dec. 28, 1998)
- 2013 – 2014 **Northern University Bangladesh (on leave From BUET):**

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|----------------|--|
| | Dean, Faculty of Science and Engineering (July 07, 2013 – June 30, 2014); Head, Depts. of EEE and ECE (August 20, 2013 – June 30, 2014) |
| 2004 | Graduate School of Information Science and Technology, Hokkaido University, Sapporo, Japan (on leave From BUET): Visiting Researcher |
| 2003 – 2004 | School of Engineering, City University, London (on leave From BUET): Post-Doctoral Research Fellow |
| 1998 – to date | North South University, Bangladesh (1998-2003, 2006-2010), Asian University of Bangladesh (1998-2000), Daffodil International University, Bangladesh (2001-2003), United International University of Bangladesh (2006-2011, 2013), Military Institute of Science and Technology (2011), Green University, Bangladesh (2013-2017), East West University, Bangladesh (2014- to date): Adjunct Faculty (part-time) |
| 1997 | Electrotechnical Laboratory, Tsukuba, Japan: Researcher |
| 1994 – 1996 | Division of Electronics and Information Engineering, Hokkaido University, Japan: Teaching Assistant |
| 1990 – 1991 | PDB, Veramara, Bangladesh: Assistant Engineer |
| 1991 | Bangladesh Gas Field Corporation: Maintenance Engineer |
| 1990 | Department of EEE, BUET, Dhaka, Bangladesh: Teaching Assistant |

MEMBERSHIP/AFFILIATION OF PROFESSIONAL INSTITUTIONS

- i. Senior Member, The Institute of Electrical and Electronics Engineers, Inc. (IEEE)
- ii. Member, IEEE-MTT (Microwave Theory and Technique) Society
- iii. Member, IEEE Photonics Society
- iv. Member, IEEE Communications Society (COMSOC)
- v. Member, Optical Society of America (OSA)
- vi. Fellow, The Institution of Engineers, Bangladesh (FIEB)
- vii. Member, Bangladesh Computer Society (BCS)

AWARDS/HONORS RECEIVED

- i. “Best Paper Award on Photonics” was awarded in the 3rd IEEE International Conference on Telecommunication and Photonics (ICTP) 2019 held in BUET, Dhaka, Bangladesh during 28-30 Dec, 2019.
- ii. “Dr. Fatema Rashid Best Paper Award- 2nd Prize” was awarded in the 10th International Conference on Electrical and Computer Engineering (ICECE 2018) held in BUET, Dhaka, Bangladesh during 20-22 Dec, 2018.
- iii. Fellow, Institution of Engineers, Bangladesh (IEB), 2018
- iv. “Best Paper Award on Photonics” was awarded in the 2nd IEEE International Conference on Telecommunication and Photonics (ICTP) 2017 held in BUET, Dhaka, Bangladesh during 26-28 Dec, 2017.
- v. “Best Paper Award on Photonics” was awarded in the 1st IEEE International Conference on Telecommunication and Photonics (ICTP) 2015 held in Dhaka, Bangladesh during 26-28 Dec, 2015.
- vi. “UGC Award (University Grants Commission Award) for year 2012” for best research paper in the field of “Engineering and Technology”. The award received in March 2015.
- vii. Thesis/project entitled “Analysis of Micro and Nanostructured Photonic Crystal Fibers” offered to final year students won the 1st prize in communication group in the second EEE undergraduate project workshop (EUPROW 2011), organized by the EEE Dept. of BUET (May 2011).
- viii. “IEEE Travel Award” from Photonics 2010, International Conference on Fiber Optics and Photonics held in Indian Institute of Technology, Guwahati, India, during December 11-15, 2010 on the basis of selected best research papers in the conference.
- ix. Erasmus Mundus Academic Staff Exchange Scholarship, Sabanci University, Istanbul, Turkey (May 01, 2010 – June 01, 2010).
- x. Invitation with fund received to participate in the Fourth UNESCO workshop on “Active Learning in Optics and Photonics”, ALOP ASIA 2006, at Miranda House, University of Delhi, Delhi, India held during 6 to 11 November 2006.
- xi. Invitation with fund received to participate in the “Winter College on Optics and Photonics in Nanoscience and Nanotechnology”, at Abdus Salam International Center for Theoretical Physics (ICTP), Trieste, Italy held during Feb 7-18, 2005.
- xii. Senior Membership, The Institute of Electrical and Electronics Engineers, Inc. (IEEE) (August, 2004).
- xiii. Japan Student Service Organization (JASSO) Fellowship (Aug. 02, 2004 – Oct. 31, 2004).
- xiv. Postdoctoral Fellowship of EPSRC, School of Engineering, City University, London, UK. Aug. 26, 2003 – June 30, 2004.
- xv. Monbusho (Japanese Govt.) Scholarship (Apr. 1991- March 1997).

- xvi. “Young Scientist Award” from Hokkaido Branches of the Institutes related to Electrical Engineering of Japan, 1995.
- xvii. “Institute Gold Medal” in recognition of outstanding academic performance in B.Sc. Engineering Examination 1988 from Bangladesh Institute of Technology, Rajshahi, Bangladesh.
- xviii. “Talent Pool Scholarship” (Education Board, Rajshahi, 1982-1989, for securing 4th position in the combined merit list in both SSC and HSC held in 1982 and 1984, respectively).
- xix. Junior Scholarship (1980-1981).

SUPERVISION OF THESIS/DESIGN PROJECT AT UNDERGRADUATE LEVEL

1998 - to date: Supervised more than 65 Thesis/Projects at BUET and 20 at MIST and Private Universities in Bangladesh.

SUPERVISION OF GRADUATE RESEARCH WORK

1998 - to date: Supervised 18 M.Sc. Engineering Thesis at Dept. of EEE, BUET

OTHER SERVICES TO THE DEPARTMENT/UNIVERSITY

1998 – to date: Member of Board of Undergraduate Studies (BUGS), Member of BRTC (Bureau of Research Testing and Consultation) of the department, Advisor of undergraduate students, Member of the Faculty, Member of Board of Postgraduate Studies (BPGS), Member of Examination Committee, Lab-in-charge, Member of undergraduate admission test sub-committee, Coordinator of training programs, Member of the Academic Council of BUET; **2001--2003:** Assistant Provost, Ahsan Ullah Hall, BUET; **2001--2003:** Member-Secretary, Board of Postgraduate Studies (BPGS), EEE Department; **2007–2008:** Coordinator, Bureau of Research Testing and Consultancy (BRTC), EEE Dept.; **December 2015 – June 2018:** Adviser to Vice Chancellor for PABX of BUET.

REVIEWER OF TECHNICAL RESEARCH PAPERS

1998 - to date: Reviewer of papers of IEEE/OSA Journal of Lightwave Technology, IEEE Photonics Technology Letters, Optical Engineering, Journal of Nanophotonics, Applied Optics, JOSA-B, Journal of Optical and Quantum Electronics, Chinese Optics Letters, Journal of Electrical Engineering (Institution of Engineers, Bangladesh), Journal of Daffodil University Bangladesh, Journal of Ahsan Ullah University of Science and Technology Bangladesh, and many international conference papers.

INTERNATIONAL CONFERENCE ORGANIZATION

1998 – to date: Worked as member of Technical Committee, Organizing Committee, International Advisory Committee, as Technical Co-Chair, Organizing Co-Chair, Technical Chair, Session Chair of international conferences.

PARTICIPATION IN NATIONAL COMMISSIONS, COMMITTEES, ETC. COMMISSIONED BY THE GOVT. OF BANGLADESH, GOVT. AND NON-GOVT. INSTITUTION/ORGANIZATIONS

1998 – to date: Participated as expert member of technical evaluation committee, tender evaluation committee, selection committee, Investigation Committee, Search Board for the appointment of higher officials, Board of Accreditation for Engineering and Technical Education, Examination committee of Public and Private Universities, Faculty selection committee of Public and Private Universities, Course curriculum development committee of Public and Private Universities, Committee for preparing the guideline for RF radiation hazards upto 300 GHz of BTRC, etc.

CONSULTANCY SERVICES

1999 – to date: As a member of the of BRTC (Bureau of Research Testing and Consultation) of the Dept. of EEE, BUET, have been involved in testing electrical and electronic devices/equipment and in consultancy work related to electrical power systems, solar power systems, and telecommunications.

OTHER ACTIVITIES

2009: Member-Secretary, IEEE Bangladesh Section; **2013-2014:** Chair, IEEE Communication Society, Bangladesh Chapter; **2015-2019:** Adviser, IEEE Communication Society, Bangladesh Chapter; **2020-2021:** Vice-Chair, IEEE Communication Society, Bangladesh Chapter.

Publications

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

 <https://scholar.google.com/citations?hl=en&user=UcISx6kAAAAJ>

 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*, vol. 21, no. 16, pp. 17749-17757, Aug. 2021, <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.
- (28) A. A. Siraji, **M. Shah Alam**, and S. Haque, "Impact of Space Modulation on Confinement of Light in a Novel Photonic Crystal Cavity on Ferroelectric Barium Titanate," *IEEE/OSA Journal of Lightwave Technology*, vol. 31, no. 5, pp. 802—808, March 2013.
- (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 As₂Se₃ 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.
- (21) S. A. Siddiqui, A. Zubair, and **M. Shah Alam**, "Effect of Stress on the Characteristics of Elliptical Hollow Core Optical Fiber," *Optical Engineering, SPIE*, vol. 50, no.4, pp. 045002(1-7), April 2011.

- (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.
- (16) M. M. Islam, M. A. Zahid, N. B. Jamal, M. R. Parvez, and **M. Shah Alam**, "Wavelength Dependence of Guiding Properties in Highly Birefringent Elliptical Ring Core Optical Fiber," *Journal of Electrical Engineering, The Institution of Engineers, Bangladesh*, vol. EE 36, no. 2, pp. 10-15, Dec. 2009.
- (15) **M. Shah Alam** and M. R. Islam, "Finite Element Solutions of Integrated Laser Rib and Dielectric Loaded Rectangular Waveguides," *Journal of Electrical Engineering, The Institution of Engineers, Bangladesh*, vol. EE 36, no. 1, pp. 16-19, June 2009.
- (14) S. N. Islam, K. Fatima, S. Najnin, and **M. Shah Alam**, "Polarization Properties of Side-Hole Optical Fiber Under External Stress," *Journal of Electrical Engineering, The Institution of Engineers, Bangladesh*, vol. EE 36, no. 1, pp. 25-29, June 2009.
- (13) M. K. Hassan and **M. Shah Alam**, "Optimization of Ultra-High Speed X-Cut LiNbO₃ Optical Modulators With Backside Slots Using Finite Element Method," *Journal of Electrical Engineering, The Institution of Engineers, Bangladesh*, pp. 3-8, vol. EE 35, no. 1, June 2008.
- (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.
- (7) **M. Shah Alam**, "A modal analysis of shielded microstrip lines," *Journal of Electrical Engineering, The Institute of Engineers, Bangladesh*, vol. EE 26, no. I & II, pp. 1-4, December, 1998.
- (6) **M. Shah Alam**, M. Koshiba, K. Hirayama, and Y. Hayashi, "Hybrid-mode analysis of multilayered and multiconductor transmission lines," *IEEE Transactions on Microwave Theory and Techniques*, vol. 45, no. 2, pp. 205--211, Feb. 1997.
- (5) **M. Shah Alam**, M. Koshiba, K. Hirayama, and Y. Hayashi, "Analysis of lossy planar transmission lines by using a vector finite element method," *IEEE Transactions on Microwave Theory and Techniques*, vol. 43, no. 10, pp. 2466--2471, Oct. 1995.
- (4) K. Hirayama, **M. Shah Alam**, Y. Hayashi, and M. Koshiba, "Vector finite element method with mixed-interpolation-type triangular-prism element for waveguide discontinuities," *IEEE Transactions on Microwave Theory and Techniques*, vol. 42, no. 12, pp. 2311--2316, Dec. 1994.

(3) **M. Shah Alam**, K. Hirayama, Y. Hayashi, and M. Koshiba, "Analysis of shielded microstrip lines with arbitrary metallization cross section using a vector finite element method," *IEEE Transactions on Microwave Theory and Techniques*, vol. 42, no. 11, pp. 2112--2117, Nov. 1994.

(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.

(1) **M. Shah Alam**, K. Hirayama, Y. Hayashi, and M. Koshiba, "A vector finite element analysis of complex modes in shielded microstrip lines," *Microwave and Optical Technology Letters*, vol. 6, no. 16, pp. 873--875, Dec. 1993.

c) Conferences (national and international conferences and seminars):

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, M. A. 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 TENSYPMP 2020 held in June 2020, Dhaka, Bangladesh, to be published in IEEE Xplore.

(81) Zahidur Rahman, Md. Ashfaque Rahman, Md. Asiful Islam, and **M. Shah Alam**, "Analysis of a Multifunctional Dual-Core Photonic Crystal Fiber for Optical Communications," *Proceedings of 3rd International Conference on Telecommunication and Photonics (ICTP) 2019*, held in Dec. 2019, BUET, Dhaka, published in IEEE Xplore.

(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 Ahsan 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. Ashfaque 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.

(75) K. B. M. Rakib Hasan and **M. Shah Alam**, "Hybrid Plasmon Waveguide for Capacitor Like Energy Localization in Dielectric Gap," *Proceedings of Tenth International Conference on Electrical and Computer Engineering, ICECE 2018*, pp. 301-304, 20-22 December 2018, Dhaka, Bangladesh. Published in IEEE Xplore.

(74) Md Mahadi Masnad, **M. Shah Alam**, and S. M. Mominuzzaman, "Reduction of Excitation Volume in Fluorescence Spectroscopy with Localized Surface Plasmon," *Proceedings of Tenth International Conference on Electrical and Computer Engineering, ICECE 2018*, pp. 293-296, 20-22 December 2018, Dhaka, Bangladesh. Published in IEEE Xplore.

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