Curriculum Vitae of Professor Dr. Md. Sarwar Alam

1. Personal Information

Name	**Professor Dr. Md. Sarwar Alam**
Father's Name	Md. Khorshed Alam
Mother's Name	Suraiya Begum
Date of Birth	December 31, 1975
Place of Birth	Barisal, Bangladesh
Religion	Islam
Nationality	Bangladeshi by birth
Civil Status	Married with one child
Permanent Address	Flat-B/4, Plot-20/1, Road-1, Mohammadia Housing Ltd, Mohammadpur, Dhaka-1207, Bangladesh.
Mailing Address	**Professor** Department of Mathematics Jagannath University Dhaka-1100, Bangladesh Mobile: (+88) 01819298780, (+88) 01819285338 Email: sarwardu75@gmail.com, sarwar@math.jnu.ac.bd

2. Academic Qualification

Post-Doctoral Researcher	*From 1 February, 2017 to 31January, 2019* Center for Advanced Air-conditioning Refrigerating & Energy, School of Mechanical Engineering, Pusan National University, Busan, **South Korea**.
Major Field of Study	Molecular Dynamics Simulation
Title of Project	MD Simulation on Condensation and thermodynamic properties of Refrigerants
Supervisor	Professor Ji Hwan Jeong, PhD

Professor Dr. Md. Sarwar Alam

Ph. D. in Applied Mathematics	*Awarded on 23 January 2016* Bangladesh University of Engineering & Technology (BUET), Dhaka, Bangladesh
Major Field of Study	Computational Fluid Dynamics
Title of Thesis	Numerical Study on Stability of Magnetohydrodynamics Nanofluid flow through Channel
Supervisor	Professor Md. Abdul Hakim Khan, PhD

M. Phil. in Applied Mathematics	*Awarded on 10 January 2009* Bangladesh University of Engineering & Technology (BUET), Dhaka, Bangladesh
Major Courses	Fluid Dynamics-I, Fluid Dynamics-II, Perturbation and Approximation Theory, Advanced Numerical Methods, Partial Differential Equations, Advanced Numerical Methods-II, Numerical Heat Transfer and Fluid Flows, Graph Theory-I
Major Field of Study	Computational Fluid Dynamics
Title of Thesis	Critical Behaviour of the Solution of Hydromagnetic Flows in Convergent-Divergent Channels
Supervisor	Professor Md. Abdul Hakim Khan, PhD

M. Sc. in Pure Mathematics	1999 University of Dhaka, Bangladesh
Result	First Class 2nd Position (71.28%)
Major Courses	Real Function Theory, Topology, Differential & Integral Equation, FORTRAN Programming & Numerical Analysis

B. Sc. Honors in Mathematics	1998 University of Dhaka, Bangladesh
Result	First Class (62.5%)
Major Courses	Basic Algebra, Analytic Geometry (with Vector Algebra), Calculus of one Variable, Linear Algebra, Real Analysis-I, Calculus of several Variable, Ordinary Differential Equation, Abstract Algebra, Real Analysis-

	II, Complex Analysis, Methods of Applied Mathematics, Mechanics, Hydrodynamics, Numerical Analysis with Computer Programming
Minor Courses	Principles of Economics, (Money, Banking, Public Finance and International Trade), The Economy of Bangladesh, Description Statistics and Correlation and Reggration Analysis, Elements of Probability and Probability Distribution, Test on Significance and sampling Technique, Applied Statistics and Experimental design
H. S. C. in Science Group	1992 Govt. B. M. College, Barisal, Jessore Board
Result	First Division (72.4%)
S. S. C. in Science Group	1990 Rupatali High School, Barisal, Jessore Board
Result	First Division (72.6%)

Ph. D. Thesis Highlights The thesis investigated numerically the stability of steady two-dimensional laminar magnetohydrodynamic flow of viscous incompressible nanofluid through channel. The basic governing equations in vector form for the flow and thermal field are expressed case by case. The extended governing equations with related boundary conditions are reduced to dimensionless form using appropriate transformations. The resultant nonlinear ordinary differential equations are then solved numerically employing power series with Hermite-Padé approximation scheme. The dominating singularity behaviour of the solution is analysed numerically and graphically for nanofluid. The irreversibility of the system and the regular behavior of the flow are presented in both parallel and convergent-divergent channels for various values of the physical flow parameters.

M. Phil. Thesis Highlights The M. Phil. thesis studied the two-dimensional steady nonlinear flow of an incompressible conducting viscous fluid in Convergent-Divergent Channels under the influence of an externally applied homogeneous magnetic field by means of Hermite – Pade′ approximation especially differential approximate method. The series related to similarity parameters is obtained by using algebraic programming language MAPLE. Then the series is analysed by approximate methods to show the dominating singularity behavior of the flow and the critical relationship among the parameters of the solution.

3. **Work Information**

September 7, 2020 to date	**Professor** Department of Mathematics, Jagannath University, Dhaka, Bangladesh.
April 28, 2016 to September 6, 2020	Associate Professor Department of Mathematics, Jagannath University, Dhaka, Bangladesh.
May 30, 2012 to April 27, 2016	Assistant Professor Department of Mathematics, Jagannath University, Dhaka, Bangladesh.
September 19, 2010 to May 29, 2012	Lecturer Department of Mathematics, Jagannath University, Dhaka, Bangladesh.
May 01, 2009 to September 18, 2010	Assistant Professor Institute of Natural Sciences, United International University, Dhaka, Bangladesh
May 01, 2008 to April 30, 2009	Senior Lecturer Institute of Natural Sciences, United International University, Dhaka, Bangladesh
November 01, 2006 to April 30, 2008	Lecturer Institute of Natural Sciences, United International University, Dhaka, Bangladesh
September 07, 2002 to October 31, 2006	Lecturer Asian University of Bangladesh, Dhaka
October 18, 2000 to September 06, 2002	Senior Teacher A-Level, Mastermind English Medium School, Dhaka, Bangladesh

4. Prestigious Fellowships and Awards

- **Postdoctoral Fellowship** funded by University Grants Commission (UGC), **People's Republic of Bangladesh** (2020).
- **Postdoctoral Fellowship** by Korea Institute of Energy Technology Evaluation and Planning (KETEP) funded by the government of **Republic of Korea** (February, 2017 to January, 2019).
- **Bangabandhu Ph. D. Fellowship** on Science and ICT funded by Ministry of Science and Technology, **The People's Republic of Bangladesh** (April, 2012 to January, 2016).

5. Teaching and Knowledge

I have achieved 20 years of teaching experiences in **seven (including 3 public universities and 4 private universities)** different Universities and one in A-level at English Medium School in Bangladesh. The experiences consisted of teaching in Postgraduate and Undergraduate Mathematics courses, organizing seminars, Math Olympiad and conducting research work.

Undergraduate [B.Sc. (Hons)]: Hydrodynamics, Ordinary Differential Equations, Partial Differential Equations, Linear Algebra, Coordinate Geometry, Calculus, Complex Variable, Method of Applied Mathematics, Numerical Analysis, Mathematical modeling in Biology, Business Mathematics, Business Statistics.

M. Sc. Level: Magneto-hydrodynamics-I, Magneto-hydrodynamics-II, Fluid Dynamics-I, Fluid Dynamics-II.

M. Phil. Level: Advanced Numerical Methods.

6. Research Interests

- Molecular Dynamics Simulations
- Condensation and thermodynamic properties of Refrigerants
- Stability analysis of the flow
- Nanofluid
- Heat and Mass Transfer
- Magnetohydrodynamics
- Irreversibility of Thermodynamic system
- Approximant Method, Finite element method

7. Supervision

(a) Supervision of Ph.D. Student at Bangladesh University of Engineering and Technology (BUET), Dhaka

Co-Supervisor of Ph.D. student in the Department of Mathematics, BUET

Name of the Students	*Title, Year*
1. Golam Mostafa	Molecular dynamics simulations on structural, dynamic and thermophysical properties of fluids flow in refrigeration and air-conditioning systems (ongoing)

(b) Supervision of M. Phil. Students at Jagannath University, Dhaka

Supervisor of M.Phil. student in the Department of Mathematics, Jagannath University, Dhaka, Bangladesh.

Name of the Students	*Title, Year*
1. Md. Shamim	Numerical simulation of condensation and thermophysical properties of working fluids (ongoing)

(c) Supervision of M. Sc. Students at Jagannath University, Dhaka

Supervised 6(Six) M. Sc thesis students in the Department of Mathematics, Jagannath University, Dhaka, Bangladesh.

Name of the Students	*Title, Year*
1. Khalilur Rahman	Critical behavior of the influence of magnetic Reynolds number on MHD flow in Convergent-Divergent channels (2012)
2. Md. Atikur Rahman	Singularity analysis of MHD Radiative flow through channel with porous medium applying Hermite-Padé Approximation, (2014).
3. Khandokar Sajib Mahmud	MHD Radiative flow through channel with a sliding wall (2014).
4. Sakhawat Hossain	Finite Element Simulation of Magnetohydrodynamic Effect on Mixed Convection in A Square Cavity with a Porous Medium Linearly Heated Side Wall (2017).
5. Suraiya Yasmin	Study on magnetohydrodynamics water-based Cu and Al2O3 nanofluids flow in a divergent channel considering different shapes of nanoparticles (2020).
6. Ashik Chandra Das	Study of MHD nanofluid flow through a circular pipe (ongoing).

(d) Supervision of Undergraduate Project Students at Jagannath University, Dhaka

Supervised six groups of 17 (Seventeen) students of 4th year Honours in the Department of Mathematics, Jagannath University, Dhaka, Bangladesh.

Name of the Students	*Title, Year*
1. Group1 (Elachi Akter, Masud Pervez, Abu Sufian)	Characteristics of Cylindrical flow
2. Group 2 (Rezwana Kader, Salma Siddika, Mridul Saha)	Fundamentals of Nanofluid and its Applications
3. Group 3 (Ashik Chandra Das, Al-Asad, Shariful Islam)	Numerical Study on Some Population Models in Mathematical Biology

4. Group 4 (Sheikh Rehan Uddin, Jannatul Ferdaus Era)	Influence of Circular Obstacle on Channel flow
5. Group 5 (Kamal Hossain, Anamul Haque, Md. Sabid Hossain)	Numerical Study on Mathematical Modeling in Biological System
6. Group 6 (Shahida Ashrafee Shanta, Md. Shorif Uddin, Kismot Ara)	The Flow around a Spherical Obstacle Placed at Centre in a Three Dimensional Pipe

8. Course Curriculum/Syllabus Development at Jagannath University, Dhaka

Being a member of the Committee of courses, I have been regularly revising the M. Sc. Courses MTH 5117: Magneto-hydrodynamics-I, MTH 5217: Magneto-hydrodynamics-II, MTH5111: Fluid Dynamics-I and MTH5211: Fluid Dynamics-II for the last ten years. On the other hand, I have been actively participating in the revision of the undergraduate courses in the Department for the ten years.

9. Administration and Service

- Acted as Coordinator and member of different examination committees at both Graduate and Undergraduate levels in the Department of Mathematics, Jagannath University, Dhaka, Bangladesh (2010-date).
- Acted as a member of Deans Executive committee in the Faculty of Science, Jagannath University, Dhaka, Bangladesh (2016-date).
- Actively participated as Convener and Member-secretary to conduct Departmental Co-curriculum activities such as Picnic, Orientation program and Farwell of the students.
- Contributed as a Convener to prepare Souvenir of A.F. Mujibur Rahman Foundation Gold Medal Awards Ceremony of the Department of Mathematics, Jagannath University, Dhaka.
- Participated in conducting two Seminars in (2013 & 2015) and Math Olympiad in 2015 at the Department of Mathematics, Jagannath University, Dhaka.

10. Editorial Board Member in International Journals

- I am one of the editorial board members of the *International Journal of Engineering and Modern Technology (IJEMT).*

11. Reviewer for the Refereed International Journals (08)

I have been reputed with reviewing paper from international journals listed below

- Journal of Computational Design and Engineering (*Elsevier*)
- Propulsion and Power Research (*Elsevier*)
- Journal of Molecular Liquids (*Elsevier*)
- Journal of Mechanical Science and Technology (*SCI indexed*)
- International Journal of Applied and Computational Mathematics (IACM) (*Springer*)
- Songklanakarin Journal of Science and Technology (*SCI indexed*) *(Springer)*
- Defect and Diffusion Forum (*Scopus indexed*)
- Jagannath University Journal of Science

12. Thesis/Project Report Examination

- ✓ Examined five M. Sc. Theses in Mathematics in the Department of Mathematics, Jagannath University, Dhaka.
- ✓ Examined twenty-nine undergraduate project reports in Mathematics in the Department of Mathematics, Jagannath University, Dhaka.
- ✓ Worked as an examiner of National University, Gazipur, Bangladesh.

13. External member/member of Ph. D. and M. Phil. Board of Examiners in other Universities

I have acted as a member in one Ph. D. Board of Examiners and as an external member in three M.Phil./ M.Sc. Board of Examiners in the Department of Mathematics, BUET.

14. Intellectual Attainment

I am credited with **25 Journal papers, 3 Conference proceedings** and **15 Conference presentations**. In most of the papers, I am the first & corresponding author with the contributions of the following essential components

(i) concept invention and searching of new skill
(ii) structure of mathematical model
(iii) writing the program code
(iv) data production, study and understanding
(v) writing up the paper and submitting it to Journal.
(vi) correspondence with the editors

15. List of Publications

(a) International Journal Publications

(i) SCI, SCIE & SCOPUS Indexed JCR Impact Factor Journals (09)

1. **Md. Sarwar Alam**, Ji Hwan Jeong, "Molecular dynamics simulations of homogeneous condensation and the thermophysical properties of HFO1123 and its binary blends with HFC134a at 273.15 K to 298.15 K", *Journal of Mechanical Science and Technology*, (**Published by Springer Nature**), Vol. 35(5), pp. 2247-2258, (2021). [**SCIE** & **SCOPUS** Indexed **JCR IF (1.463),** *Q2 ranked SJR (0.576)*].
2. **Md. Sarwar Alam**, Ji Hwan Jeong, "Analysis of phase transition, structural and dynamical properties of R-290 using molecular dynamics simulation", *Journal of Mechanical Science and Technology*, (**Published by Springer Nature**), Vol. 34(10), pp. 4345-4353, (2020). [**SCIE** & **SCOPUS** Indexed **JCR IF (1.463),** *Q2 ranked SJR (0.576)*].
3. **Md. Sarwar Alam**, Ji Hwan Jeong, "Calculation of the thermodynamic properties of R448A and R449A in the saturation range from 233.15 K to 343.15 K using molecular dynamics simulation", *International Communications in Heat and Mass Transfer*, (**Published by Elsevier B. V.**), Vol. 116, pp. 1-9, 104717 (2020). [**SCIE** & **SCOPUS** Indexed **JCR IF (4.224),** *Q1 ranked SJR (1.553)*].
4. **Md. Sarwar Alam**, Ji Hwan Jeong, "Thermodynamic properties and critical parameters of HFO-1123 and its binary blends with HFC-32 and HFC-134a using molecular simulations", *International Journal of Refrigeration*, (**Published by Elsevier B. V.**), Vol. 104, pp. 311-320, (2019). [**SCIE** & **SCOPUS** Indexed **JCR IF (3.382),** *Q1 ranked SJR (1.688)*].
5. **Md. Sarwar Alam**, Ji Hwan Jeong, Comparative Molecular Dynamics Simulations of Homogeneous Condensation of Refrigerants", *International Journal of Thermal Sciences*, (**Published by Elsevier B. V.**), Vol. 141, pp. 187-198, (2019). [**SCIE** & **SCOPUS** Indexed **JCR IF (3.623),** *Q1 ranked SJR (1.429)*].
6. **Md. Sarwar Alam**, Ji Hwan Jeong, "Molecular Dynamics Simulations on Homogeneous Condensation of R600a Refrigerant", *Journal of Molecular Liquids*, (**Published by Elsevier B. V.**), Vol. 261, pp. 492-502, (2018). [**SCI** & **SCOPUS** Indexed **JCR IF (4.561),** *Q1 ranked SJR (0.862)*].
7. **Md. S. Alam**, M.A.H. Khan, M.A. Alim, "Irreversibility analysis of variable thermal conductivity MHD radiative flow in porous channel with different nanoparticles", *Journal of Porous Media*, (**published by begellhouse Inc., USA**), Vol. 19, No. 5, pp. 423-439, (2016). [**SCI** Indexed **JCR IF (1.49),** *Q2 ranked SJR (0.492)*].
8. **Md. S. Alam**, M.A. Alim, M.A.H. Khan, "Entropy Generation Analysis for Variable Thermal Conductivity MHD Radiative Nanofluid Flow through Channel", *Journal of Applied Fluid Mechanics*, Vol. 9, No. 3, pp.1123-1134, (2016). [**SCIE** & **SCOPUS** Indexed **JCR IF(0.918),** *Q2 ranked SJR (0.361)*].
9. **Md. S. Alam**, M.A.H. Khan, M.A. Alim, "Magnetohydrodynamic Stability of Jeffery-Hamel Flow using Different Nanoparticles", *Journal of Applied Fluid Mechanics*, Vol. 9, No. 2, pp. 899-908, (2016). [**SCIE** & **SCOPUS** Indexed **JCR IF(0.918),** *Q2 ranked SJR (0.361)*].

(ii) SCOPUS & ESCI indexed Journals (07)

10. Ashik Chandra Das, **Md. Sarwar Alam***, "Effect of various shaped Al2O3 and TiO2 nanoparticles on water-based MHD nanofluid flow through convergent-divergent channels" *Science & Technology Asia*, Vol. 26, No.2 pp. 1-15, (2021) [**SCOPUS** Indexed].
11. **Md. S. Alam**, O.D. Makinde, M.A.H. Khan, "Instability of variable thermal conductivity magnetohydrodynamic nanofluid flow in a vertical porous channel of varying width", *Defect and Diffusion Forum*, Vol. 378, pp. 85-101, (2017). [**SCOPUS** Indexed, **CiteScore (0.20), RG Journal Impact (0.24)** *Q4 ranked SJR (0.144)***].**
12. **Md. S. Alam**, M.A.H. Khan, O. D. Makinde, "Magneto-Nanofluid Dynamics in Convergent-Divergent Channel and Its Inherent Irreversibility", *Defect and Diffusion Forum*, Vol. 377, pp. 95-110, (2017). [**SCOPUS** Indexed, **CiteScore (0.20), RG Journal Impact (0.24)** *Q4 ranked SJR (0.144)***].**

13. **M. K. Rahman**, **Md. S. Alam,** M.A. H. Khan, "Stability of MHD Unsteady Nanofluid Flow through Expanding or Contracting Channel with Porous Walls", *Science & Technology Asia*, Vol. 22, No. 3, pp. 134-142, (2017) [**SCOPUS** Indexed].
14. **Md. S. Alam**, M.A.H. Khan, "Analysis of Magnetohydrodynamic Jeffery-Hamel flow with nanoparticle by Hermite- Padé approximation technique", *International Journal of Engineering, Transaction A: Basics*, Vol. 28, No. 4, pp. 599-607, (2015). [**ESCI (Thomson Reuters)** & **SCOPUS** Indexed, CiteScore (0.6), *Q2 ranked SJR (0.243)*]**.**
15. R. A. Rouf, **M. S. Alam**, M.A. H. Khan, "Approximation approach to multiple singularities of flow through a porous pipe with decelerating wall", *Journal of Naval Architecture and Marine Engineering*, Vol. 9, No. 1, pp.35-42, (2012). [**ESCI (Thomson Reuters)** & **SCOPUS** Indexed**,** *Q3 ranked SJR (0.291*)].
16. **M. S. Alam**, M.A. H. Khan, "Critical Behaviour of the MHD flow in Convergent-Divergent Channels", *Journal of Naval Architecture and Marine Engineering*, Vol. 7, No. 2, pp. 83-93, (2010). [**ESCI (Thomson Reuters)** & **SCOPUS** Indexed**,** *Q3 ranked SJR (0.291*)]**.**

(iii) Peer-reviewed Journals (05)

17. **Md. S. Alam**, M.A.H. Khan, M.A. Alim, "Entropy generation for MHD Radiative Variable Thermal Conductivity Nanofluid Flow through Porous Channel", *Thammasat International Journal of Science and Technology*, Vol. 21, No. 1, pp. 71-86, (2016).
18. **Md. S. Alam**, M.A. H. Khan, "Hermite- Padé projection to thermal radiative and variable conductivity MHD flows through channel with a sliding wall", *International Journal of Engineering, Science and Technology*, Vol. 6, No. 1, pp. 88-97, (2014).
19. **Md. S. Alam**, M. A. Alim, M.A. H. Khan, R. N. Mondal "Critical analysis of the influence of Thermal Radiation on variable viscosity flow through a Channel", *International Journal of Energy & Technology*, Vol. 5, No.11, pp. 1-7, (2013).
20. **Md. S. Alam**, M.A. H. Khan, M. M. Rahman "Critical analysis of the influence of magnetic Reynolds number on MHD Jeffery-Hamel flows", *International Journal of Applied Mathematics and Mechanics*, Vol. 9, No. 5, pp. 31-46, (2013).
21. **M. S. Alam**, R. A. Rouf, "Approximate method to singularity behaviour of nonlinear problems in fluid dynamics", *ARPN Journal of Engineering and Applied Sciences*, Vol. 6, No. 3, pp.116-120, (2011). [*Q3 ranked SJR (0.204*)]

(b) Peer-reviewed National Journals (04)

22. **Md. Sarwar Alam***, Suraiya Yasmin, Ashik Chandra Das, Study on Magnetohydrodynamics Cu-water Nanofluid Flow with Different Shapes of Nanoparticles in a Divergent Channel, *GANIT: Journal of Bangladesh Mathematical Society*, Vol. 41, No. 2 (**Accepted**).
23. **Md. S. Alam**, Md. Atikur Rahman, "Singularity analysis of MHD radiative flow through channel with porous medium applying Hermite-Padè Approximation", *Jagannath University Journal of Science*, Vol. 4, No. 1, pp. 113-126, (2015).
24. **Md. S. Alam**, M.A.H. Khan, M.A. Alim, "Critical Analysis of Magnetohydrodynamic Jeffery-Hamel flow using Cu-water nanofluid", *GANIT: Journal of Bangladesh Mathematical Society*, Vol. 34, pp. 111-126, (2014).
25. **M. S. Alam**, M. M. Billah, M. M. Rahman, "Effect of inlet and outlet positions on MHD mixed convection in a ventilated cavity", *Jagannath University Journal of Science*, Vol. 1, No. 1, pp. 83-95, (2012).

(c) Conference Proceedings (03)

1. **Md. Sarwar Alam**, Ji Hwan Jeong, "A molecular dynamics simulation study on condensation of R600a refrigerant", ***AIP*** *Conference Proceedings*, 1980, 050010 (2018); doi: 10.1063/1.5044346.
2. **Md. S. Alam**, M.A. H. Khan, "MHD Combined Convection Heat Transfer in a Diverging Channel with Heated Circular Obstacle", *American Institute of Physics (**AIP**)*, 1754, 050020 (2016); doi: 10.1063/1.4958411.
3. **Md. S. Alam**, M.A. H. Khan, "MHD effects on Mixed Convection flow through a diverging channel with circular obstacle", *Procedia Engineering* (**published by Elsevier**), Vol. 90, pp. 403-410, (2014).

(d) Conference Presentations (15)

1. **Md. Sarwar Alam**, "Numerical simulation on thermodynamic properties of new working fluids using molecular dynamics" *International Conference on Numerical Analysis & Differential Equation with Applications, NADEA 2019*, 20-22 July, 2019, Odisha, India.
2. **Md. Sarwar Alam**, Ji Hwan Jeong, "Homogeneous Condensation of 2-HC refrigerants: A Comparative study by MD simulations" *9th Asian Conference on Refrigeration and Air Conditioning, ACRA 2018*, 10-13 June, 2018, Sapporo, Japan.
3. **Md. Sarwar Alam**, Ji Hwan Jeong, "A Comparative Investigation on Homogeneous Condensation of R600a and R134a using MD Simulations" *KSME Thermal Engineering Division Conference 2018*, 25-27 April, 2018, Jeju City, South Korea.
4. **Md. Sarwar Alam**, Ji Hwan Jeong, "A Molecular Dynamics Simulation Study on Condensation of R600a Refrigerant" *12th International Conference on Mechanical Engineering, ICME 2017*, 20-22 December, 2017, BUET, Dhaka, Bangladesh.
5. **Md. S. Alam**, J. Saha, M.A. H. Khan, "MHD Mixed Convection flow through a diverging channel with heated circular obstacle" *11th International Conference on Mechanical Engineering, ICME 2015*, 18-20 December, 2015, BUET, Dhaka, Bangladesh.
6. **Md. S. Alam**, M.A. H. Khan, "Entropy generation for MHD Radiative variable thermal conductivity nanofluid flow through porous channel", *19th International Mathematics Conference of Mathematical Society*, 18-20 December, 2015, Brac University, Dhaka, Bangladesh.
7. **Md. S. Alam**, M.A. H. Khan, "Analysis of MHD Jeffery-Hamel flow with nanoparticle by Hermite-Padé approximation technique", *6th BSME International Conference on Thermal Engineering*, 19-21 December, 2014, IUT, Dhaka, Bangladesh.
8. **Md. S. Alam**, M.A. H. Khan, "MHD effects on Mixed Convection flow through a diverging channel with circular obstacle" *10th International Conference on Mechanical Engineering*, ICME 2013, 20-21 June, 2014, BUET, Dhaka, Bangladesh.
9. **Md. S. Alam**, M.A. H. Khan, "MHD Combined Convection Heat Transfer in a Diverging Channel with Heat Generating Circular Obstacle", *18th Mathematics Conference of Mathematical Society*, 20-22 March, 2014, Independent University, Dhaka, Bangladesh.
10. **M. S. Alam**, M. A. Alim, M.A. H. Khan "Critical analysis of the influence of Thermal Radiation on variable viscosity flow through a Channel", *International BOSE Conference-2013*, February 04, 2013, University of Dhaka, Bangladesh.
11. **M. S. Alam**, M.A. H. Khan, M. M. Rahman "Critical Behaviour of the influence magnetic Reynolds number on MHD flow in Convergent-Divergent Channels", *17th Mathematics Conference of Mathematical Society*, 111104, December 22-24, 2011, Jahangirnagar University, Dhaka, Bangladesh.
12. **M. S. Alam**, M.A. H. Khan, An analysis of Critical Behaviour of the flow in Convergent-Divergent Channels in presence of MHD, *16th Mathematics Conference of Mathematical Society*, 16MC09-011, December 17-19, 2009, BUET, Dhaka, Bangladesh.
13. **M. S. Alam**, M.A. H. Khan, Critical Behaviour of the Hydromagnetic flows in Convergent-Divergent Channel, *4th BSME-ASME International Conference on Thermal Engineering*, Paper ID-22, 27-29 December, 2008, LGED, Dhaka, Bangladesh.

14. **M. S. Alam**, R. A. Rouf, High-order differential approximant to determine the presence of singularity in non-linearity, *Bose Conference on Contemporary Physics*, 19-21 March, 2008, Paper ID: CSFM-8, University of Dhaka, Bangladesh.
15. **M. S. Alam**, A.F.M. Khodadad Khan, Discrete Dynamical Systems using Mathematica, *International Conference on Applied Mathematics and Mathematical Physics*, 11-15 September 2000, Shahjalal University of Science and Technology, Sylhet, Bangladesh.

(e) Papers submitted (01)

1. **Md. Sarwar Alam**, Ji Hwan Jeong, "Calculations of saturation pressure and vapor liquid equilibrium properties of HFO-1234yf and binary blends of HFO-1234yf with HFO-1123". (Submission in process)

(f) Seminar/ Workshop Attended

1. *Short Course on Perturbation Theory***,** 12-15 November 1999, Department of Mathematics, University of Dhaka, Bangladesh.
2. Bangladesh Mathematical society, 15th Mathematics conference, Department of Mathematics, University of Dhaka, 29-31 December, 2007.
3. Seminar on Fuzzy Matrices and Graph Theory & Its Applications, 21 March, 2011, Department of Mathematics, Jagannath University, Bangladesh.
4. Seminar on Mathematics and Its Application in Real Life, 21 December, 2012, Department of Mathematics, Jagannath University and Bangladesh Mathematical society, Bangladesh.

16. Research Grants and Support

I obtained the following **three** research grants as the **Principal investigator**

A. Special Allocation Project for the Year 2020-2021 under the Ministry of Science & Technology, The People's Republic of Bangladesh

Project title: Condensation and thermo-physical properties of next generation working fluids in household and commercial refrigeration systems

B. Development of Jagannath University 2020-2021 for the upgradation of postgraduate research (M. Phil./M.Sc. program) in Department of Mathematics, Jagannath University.

Project title: Phase transition and thermophysical properties of new working fluids in commercial refrigeration systems

C. Development of Jagannath University 2019-2020 for the upgradation of postgraduate research (M. Phil./M.Sc. program) in Department of Mathematics, Jagannath University.

Project title: Investigation on MHD Al_2O_3-water nanofluid flow in a channel with non-parallel walls considering different shapes of nanoparticles

The main objectives of the above projects were as follows:
(i) Academic development, to improve teaching, learning and research capabilities of the departmental postgraduate students (M. Phil./M. Sc.) and collaborators.
(ii) Creating an environment and spending more time for study and to do research for the departmental researchers.

17. Membership of Scholarly Societies

Life Member, Bangladesh Mathematical Society

Member, Korean Society of Mechanical Engineers

Member, Mathematics Alumni, University of Dhaka, Bangladesh

Life Member, Jagannath University Mathematics Alumni, Bangladesh

18. Computer Programming Knowledge & English Proficiency

- Materials Studio, Origin, REFPROP, COMSOL Multiphysics, Maple, Fortran Lahey 90, MATHEMATICA, Latex, Microsoft Office (Word, Excel, PowerPoint), Techplot, Photoshop, etc.
- IELTS (Academic module): Listening - 6.0, Reading - 6.0, Writing - 6.0, Speaking - 6.5, Overall band score - 6.0, Test date - 28/09/2010.

Important web link

***Research Gate web link*:** https://www.researchgate.net/profile/Md_Sarwar_Alam

Google Scholar web link: ***https://scholar.google.com/citations?user=6y5H3FAAAAAJ&hl=en***

19. References

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Professor Dr. Md. Sarwar Alam