

Curriculum Vitae
of
Md. Haider Ali Biswas



Objective

Seeking an increasing development in the fields of Applied Mathematics and Mathematical Physics as well as Systems and Control Engineering by involving myself in continuous research.

Personal Information

Name : Md. Haider Ali Biswas
Father's Name : Late Jahir Uddin Biswas
Mother's Name : Mrs. Khairun Nesa.
Date of Birth : October 31, 1972
Place of Birth : Khulna, Bangladesh.
Nationality : Bangladeshi by birth
Marital Status : Married
Religion : Islam

Contact Details

Permanent Address : Village- Tolna, Post Office - Jamira hat,
Police Station - Dumuria,
District – Khulna, Bangladesh.

Contact Address : Associate Professor,
(Home) Mathematics Discipline, Khulna University,
Khulna-9208, Bangladesh.
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(Present) Department of Electrical and Computer Engineering,
Faculty of Engineering.
University of Porto
FEUP Campus, Room No. I202, Rua Dr. Roberto Frias
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URL: <http://fe.up.pt/~dee08022/> , <http://mhabiswas.wordpress.com/>

Educational Background

Master of Philosophy Degree

M. Phil. in Mathematics

Institution : Department of Mathematics, University of Rajshahi, Bangladesh
Result : Degree Awarded.
Year : 2005-2007 (Awarded in 2008)

Master Degree

M.Sc. in Applied Mathematics

Institution : Department of Mathematics, University of Chittagong, Bangladesh
Result : First Class, 1st in position.
Score : 75.3 %
Year : 1994 (Exam held in 1997-'98)

Bachelor Degree

B.Sc. (Hons.) in Mathematics

Institution : Department of Mathematics, University of Chittagong, Bangladesh
Result : First class, 1st in position.
Score : 68.0 %
Year : 1993 (Exam held in 1995-'96)

Higher Secondary and Secondary Certificates

H.S.C. (Higher Secondary Certificate Examination)

Institution : Govt. B. L. College, Daulatpur, Khulna, Bangladesh
Result : First Division.
Score : 62.8 %
Year : 1989

S.S.C. (Secondary School Certificate Examination)

Institution : Jamira Bazar Asmotia High School, Phultala, Khulna, Bangladesh.
Result : First Division
Score : 76.3 %
Year : 1987

Awards and Grants

1. **Primary Scholarship** for extra ordinary performance in the primary scholarship examination on 1982.
2. **Junior Talent Scholarship** for extra ordinary performance in the junior scholarship examination on 1985.
3. **Board Scholarship** for extra ordinary performance in the secondary school certificate examination on 1987.
4. **University Grant Commission (UGC) Scholarships** for extra ordinary performance in B.Sc. (Honors) final Examination on 1993.
5. **Vikkhu Shilachar Shashtri Stipend** for obtaining highest marks in M.Sc. final Examination on 1994 within the whole University.
6. **University Merit Scholarships** for obtaining first class first both in the B. Sc (Honors) and M. Sc final examinations.

7. **M Phil Research Fellowship** from the University Grants Commissions (UGC) of Bangladesh since 2006 to 2007.
8. **Ph D Research Grant** from the faculty of Engineering, University of Porto, Portugal since June, 2009 to December, 2009.
9. **Doctoral Research Grant** from the Foundation for Science and the Technology (FCT), Portugal since January, 2010 to date.
10. **Summer Graduate Program Grant** for participating the 2011 Joint MBI-NIMBioS-CAMBAM Summer Graduate Workshop on *Mathematical Ecology and Evolution* at the Mathematical Biosciences Institute, Ohio State University, USA on July 25 to August 5, 2011.
11. **SADCO Grant** for attending the Summer School on *Optimal Control and Optimization* at Imperial College London, London, UK on 5-9 September, 2011.
12. **ECCI-GSC Grant** for participating the **Graduate School on Control** organized by the European Embedded Control Institute (ECCI) and hosted by Yildiz Technical University, Istanbul, Turkey on 23-27 April, 2012.

Professional Experiences

1. Serving as an Associate Professor of the Mathematics Discipline under Science, Engineering and Technology School of Khulna University **from 15 December, 2008 till to date (Now on Study Leave at Portugal).**
2. Served as an Assistant Professor of the Mathematics Discipline under Science, Engineering and Technology School of Khulna University **from 15 December, 2003 to 14 December 2008.**
3. Served as a lecturer in the Mathematics Discipline under Science, Engineering and Technology School of Khulna University **from 13 August, 2002 to 14 December 2003.**
4. Served as a lecturer in the Department of Mathematics, Chittagong University of Engineering and Technology (former BIT, Chittagong), Chittagong, Bangladesh **from 02 April, 2001 to 12 August, 2002.**
5. Served as a lecturer in the Department of Computer and Communication Engineering (CCE), International Islamic University Chittagong, Bangladesh **from 04 December, 2000 to 31 March, 2001.**

Adjunct Faculty

1. Institute of Library, Arts, Commerce and Science (ILACS), an Honors college affiliated under National University, Bangladesh, Khulna Campus (From 2002 to 2004).
2. Asian University of Bangladesh (AUB), a leading private university approved by the Government of Bangladesh, Khulna Campus (From 2002 to 2005).
3. Northern University of Bangladesh (NUB), a leading private university approved by the Government of Bangladesh, Khulna Campus (From 2006 to 2007).
4. Expert Teacher of Mathematics in the Higher Secondary Teachers Training Institute (HSTTI), Phulbari gate, Khulna, Bangladesh, 2008.

Extra-Academic Activities

1. External Examiner of Bio-Mechanics, M. Sc. (in Applied Mathematics) Examination, Department of Mathematics, University of Chittagong, Chittagong, Bangladesh.
2. Examiner of Mathematics. Four year honors curriculum, National University, Gazipur,

Dhaka.

3. External Examiner of Mathematics. Department of Applied Physics, Electronics and Communication Engineering, Islamic University, Kustia, Bangladesh.
4. External Examiner of Mathematics. Department of Mathematics, Comilla University, Comilla, Bangladesh.
5. Expert of College Teachers' Selection Board nominated by National University, Bangladesh.

Administrative Experiences

1. Member, Committee of Internet Backbone, Khulna University Research cell, Khulna, Bangladesh.
2. Elected Teachers' Representative, Khulna University Senate, Khulna University, Bangladesh since 2003 till to date.
3. Member of Executive Committee, Khulna University Teachers' Association, Khulna, Bangladesh, (2004-2005).
4. Member of Executive Committee, Khulna University Teachers' Co-operative Housing Society Limited, Khulna, Bangladesh (2003- 2005).
5. Member of Executive Committee, Science, Engineering and Technology (SET) School, Khulna University, Khulna, Bangladesh since 2002 to 2006.
6. Member of Ad hock Management Committee, Teachers' Club, Khulna University, Khulna since 2004 to 2005.
7. Press and Publication Secretary of Executive Committee, Khulna University Teachers' Association, Khulna, Bangladesh (2005-2006).
8. Treasurer of Executive Committee, Khulna University Teachers' Co-operative Housing Society Limited, Khulna, Bangladesh (2005-2006).
9. Assistant Provost, Khan Jahan Ali Hall, Khulna University, Khulna, Bangladesh, since July, 2005 to July, 2006.
10. Head (In-charge), Red Crescent Youth, Khulna University Unit, since August, 2005 to August, 2006.
11. Advisor of Khulna University Press Club, Khulna University, Bangladesh, 2007-2008.
12. Treasurer of Executive Committee, Khulna University Teachers' Co-operative Housing Society Limited, Khulna, Bangladesh, 2006-2008.
13. Advisor of Khulna University Press Club, Khulna University, Bangladesh, 2008-2009.
14. Assistant Director of Students' Affairs, Khulna University, Khulna, Bangladesh, since 24 November, 2008 to June, 2009.

Work Experiences with NGOs/Charity Organizations

1. I worked with World Vision Bangladesh, (one of the leading international NGOs in Bangladesh) as a Teacher Representative of Khulna University Bangladesh in many social awareness programs specially in HIV/AIDS Light for Life Projects.
2. I worked with Bangladesh Red Crescent Society, an organization of International Federation of Red Cross and Red Crescent Societies (IFRCRCS), as a Teacher Representative of Khulna University Bangladesh in many social activities such as disaster management, health and care, blood donation, etc.

Research Experiences

- Ph. D.** : Ongoing (Expected by early of 2013)
Title : **Necessary Conditions for Optimal Control Problems with State Constraints: Theory and Applications**
Supervisor : Professor Maria do Rosário de Pinho
 Department of Electrical and Computer Engineering.
 Faculty of Engineering, University of Porto, Portugal.
- M. Phil.** : Degree awarded in 2008
Title : **Studies on Mathematics and Physics of Collapsing Stars**
Principal Supervisor : Dr. Md. Abdullah Ansary, Professor,
 Department of Mathematics, Rajshahi University. Rajshahi,
 Bangladesh.
Joint/Co-supervisor : Dr. Abul Kalam Azad, Professor, Department of Mathematics,
 University of Chittagong, Chittagong, Bangladesh.

Thesis Supervising

(i) Graduate Level:

a. Session 2005-2006

Name of the Thesis : M. Sc Thesis

Title of the Thesis : The Relativistic Acceleration Relations Based on Force Transformation and The Special Relativity Theory without the Constancy of the Speed of Light

Number of Students: 01 (One)

(ii) Undergraduate Level:

a. Session 2001-2002

Name of the Thesis : Undergraduate (four- year Honors) Project Thesis.

Title : **Studies on Lagrangian and Hamiltonian Mechanics and Their Applications.**

Number of Students: 02 (Two)

b. Session 2002-2003

Name of the Thesis : Undergraduate (four- year Honors) Project Thesis.

Title : **Some Aspects of Lagrangian and Hamiltonian Mechanics, Symmetry and conservation Laws.**

Number of Students: 01 (One)

c. Session 2003-2004

Name of the Thesis : Undergraduate (four- year Honors) Project Thesis.

Title : **Studies on Laws, Symmetry, Conserved Quantity and Invariance Properties.**

Number of Students: 03 (Three)

d. Session 2004-2005

Name of the Thesis : Undergraduate (four- year Honors) Project Thesis.

Title : **Studies in the Aspects of Tensor Calculus and It's Application to Curvature Invariants of Schwarzschild Metric.**

Number of Students: 02 (Two)

e. Session 2005-2006

Name of the Thesis : Undergraduate (four- year Honors) Project Thesis.

Title : **Some Applications of Tensor Analysis to the Gravitational Field of Mass Point of the Theory of Relativity.**

Number of Students: 03 (Three)

f. Session 2006-2007

(i) Group-1:

Name of the Thesis : Undergraduate (four- year Honors) Project Thesis.

Title : **Control Theory and Its Applications**

Number of Students: 03 (Three)

(ii) Group-2:

Name of the Thesis : Undergraduate (four- year Honors) Project Thesis.

Title : **Soliton Theory and Its Applications in Mathematical Physics**

Number of Students: 03 (Three)

(iii) Group-3:

Name of the Thesis : Undergraduate (four- year Honors) Project Thesis.

Title : **Studies on Hamiltonian Formulation for Dissipative and Non Conservative System**

Number of Students: 03 (Three)

Research Collaborations

On-going research is being carried out in collaboration with the research group **Control, Estimation and Optimization (CEO)** of the Institute for the Systems and Robotics- Porto (ISR-P) under the Faculty of Engineering, University of Porto, Portugal since 2009. See the link <http://whale.fe.up.pt/isrp/index.html> for more about ISR-Porto.

Field of Interests

- Classical Mechanics and Analytical Dynamics, Theory of Relativity (Special and General) and Bio-Mechanics.
- Black Holes and Black Hole Physics
- Dynamical Systems and Non-smooth Analysis

Research Interests

- Optimal Control Problems with State Constraints.
- Non smooth Optimizations
- Applications of Optimal Control Theory in Infectious Disease, Biology and Medicine.

Computer Skills

Computer Fundamentals

Application Software : MS -Word, MS -Excel, MS -Access, MS -PowerPoint.

Mathematical Package : Matlab, Mathematica.

List of Publications/Research Papers/Books

a. Publications in international refereed journals

1. **Biswas, M. H. A.**, Ahmed, M. and Ahammad, M. J.; 2005, Killing Forms And Applications. *Journal of Applied Sciences* 5(5):859-861, 2005.
2. Ahmmed, S. F., **Biswas, M. H. A.** and Uddin, M. S.; 2005. The effect of applied magnetic field and viscosity of free convection flow from a vertical surface, *Bull. Cal. Math. Soc.*, 97, (5), 381 – 392 (2005).
3. Tajuddin and **Biswas, M. H. A.**; Unification of the Theory of Albert Einstein by Cyclic Theory. *Asian Journal of Information Technology*, 4(10): 962 – 970, 2005.
4. Tajuddin; **Biswas, M. H. A.** and Islam, A. 2008. Review of the Theory of Relativity. *Journal of Applied Sciences Research*, 4(1): 32-39.
5. **Biswas, M. H. A.**; Mollick, U. K.; Pervin, S. and Islam, A. 2008. Curvature Invariants of Spherically Symmetric Schwarzschild Solution without Cosmological Constant. *Journal of Applied Sciences Research*, 4(1): 16-31.
6. Tajuddin; **Biswas, M. H. A.** and Uddin, M. S. 2007. New Aspects of Principle of Equivalence. *Acta Ciencia Indica*, Vol. XXXIV M, No. 4, pp. 1931-1939.
7. Sifuzzaman, M.; Uddin, M. S.; **Biswas, M. H. A.**; Hossen, M. A. and Hakim, M. A. 2008. Analytical Solution of Cauchy's Singular Integral Equation for Closed and Unclosed Contour. *Mathematical Forum*, A research Journal of Mathematics, Dibrugarh University, Assam, India, Vol. XIX, pp. 28-39.
8. **Biswas, M. H. A.**; Jahan, S. S.; Asaduzzaman, C. M. and Kamruzzaman, M. 2008. Exact solution of Einstein's equation to the gravitational field of mass point in polar coordinates and the singularity analysis of the solution. *Ozean Journal of Applied Sciences*, 1(1): 29-38.
9. **Biswas, M. H. A.**; Azad, M. A. K. and Ansary, M. A. 2009. Calculation of Mass Energy Density for a Collapsing Dust Sphere. *Malaysian Journal of Mathematical Sciences*, 3(2): 265- 277.
10. **Biswas, M. H. A.** and Haque, T. F. 2009. The Relativistic Acceleration Relations Based on Force Transformation. *Ozean Journal of Applied Sciences*, 2(2): 229-239.
11. **Biswas, M. H. A.**, Haque, T. M, Karim, M. E. and Rahman, M. A. 2010. Representation of Hamiltonian Formalism in Dissipative Mechanical System. *Applied Mathematical Sciences*, Vol. 4, No. 19, 931 – 942.
12. **Biswas, M. H. A.**, Rahman, M. A. and Das, T. 2011. An Investigation on Fiber Optical Soliton in Mathematical Physics and Its Application in Communication Engineering. *International Journal of Research and Reviews in Applied Sciences*, Special Issue: *Science and Mathematics with Applications*, Vol. 6, No. 3, pp. 268-276, 2011.
13. **Biswas, M. H. A.**, Huda, M. A., Ara, M. and Rahman, M. A. 2011. Optimal Control Theory and It's Applications in Aerospace Engineering. *International Journal of Academic Research*, Vol. 3, No. 2, Part II, pp. 349-357, 2011.
14. Huda, M. A., **Biswas, M. H. A.** and Ara, M. 2011. Parameter Ranking and Reduction in Communication Systems. *International Journal of Scientific and Engineering Research*, Vol. 2, No. 3, March, 2011.

15. **Biswas, M. H. A.** Ara, M., Haque, M. N. and Rahman, M. A. 2011. Application of Control Theory in the Efficient and Sustainable Forest Management. *International Journal of Scientific and Engineering Research*, Vol. 2, No. 3, March, 2011.
16. Sousa, J. C., **Biswas, M. H. A.**, Brito, R. and Silveira, A. 2011. A Multi Objective Approach to Solve Capacitated Vehicle Routing Problems with Time Windows Using Mixed Integer Linear Programming. *International Journal of Advanced Science and Technology*, Vol. 28, pp. 1-8, 2011.
17. **M. H. A. Biswas**, M. A. Rahman and T. Das. 2011. Optical Soliton in Nonlinear Dynamics and Its Graphical Representation. *Nonlinear Dynamics and Systems Theory*, 11 (4) (2011), pp. 383 -396.
18. A. Islam, **M. H. A. Biswas**, M. R. Islam and S. M Mohiuddin. 2011. MHD Micropolar Fluid Flow Through Vertical Porous Medium. *Academic Research International (ARInt.)*, Vol. 01, No.03, pp. 381—393, November 2011.
19. **Biswas, M. H. A.**, Jahan, S. S., Asaduzzaman, C. M., Kamruzzaman, M. and Rahman, M. A. 2011. Solution and Singularity Analysis of Einstein's Equation to the Gravitational Field of Mass Point. *Mathematical Forum*, Vol. XXIII, 2010—2011, September 2011.
20. **M. H. A. Biswas**. 2011. Necessary Conditions for Optimal Control Problems with and without State Constraints: A Comparative Study. *WSEAS Transactions on Systems and Control*, Vol. 6, No. 6, p. 217–228, June 2011.
21. M. S. Khan, I. Karim and **M. H. A. Biswas**. 2012. Heat Generation, Thermal Radiation and Chemical Reaction Effects on MHD Mixed Convection Flow over an Unsteady Stretching Permeable Surface. *International Journal of Basic and Applied Science*, Vol. 01, No. 02, pp. 363-377, October 2012.
22. M. S. Khan, I. Karim and **M. H. A. Biswas**. 2012. Non-Newtonian MHD Mixed Convective Power-law Fluid Flow over a Vertical Stretching Sheet with Thermal Radiation, Heat Generation and Chemical Reaction Effects. *Academic Research International (ARInt.)*, Vol. 3, No. 3, pp. xxx—xxx, November 2012.
23. **M. H. A. Biswas**. 2012. Model and Control Strategy of the Deadly Nipah Virus (NiV) Infections in Bangladesh. Accepted for publication to the Journal *Research & Reviews in BioSciences*, 2012.
24. **M. H. A. Biswas**. 2012. AIDS Epidemic Worldwide and the Millennium Development Strategies : A Light for Lives. *HIV & AIDS Review* , 2012 (in Press).
25. **M. H. A. Biswas** and Maria do Rosario de Pinho. 2012. State Constrained Optimal Control Applied to SEIR Epidemic Model for Optimal Vaccination Strategy (to be submitted).

b. Publications in national refereed journals

1. **Biswas, M. H. A.** 2005. Generalization of Euler-Lagrange's Differential Equation for the Functional of Higher Order Derivatives. *Journal of Science and Technology*, Vol. 3: 28 – 35 (2005).
2. Hossain, M. M. and **Biswas, M. H. A.** 2006. Muslim Mathematicians: The Pioneer Archetypes of Mathematics Studies. *Teachers' World, the journal of Education and Research*, Vol. 28-29, June 2006.
3. **Biswas, M. H. A.**, Alam, M. M. K, Masud, and M. S., Siddika, M. F. 2006. A Review of Symmetries Conserved Quantities and Invariance Properties. *Khulna University Studies*, 7(1): 107-118

4. **Biswas, M. H. A.** 2007. Black Holes: The Ultimate Fate of the Collapsing Stars. *Khulna University Studies* (KUS), 8(1): 143-150.
5. **Biswas, M. H. A.** 2008. Invariance: An Analogy Between Symmetry and Conservation Laws, *Khulna University Studies*, 9(1): 117-124.
6. Sifuzzaman, M.; Uddin, M.S.; **Biswas, M. H. A.**; Hossain, S.M.S. and Haque, Z. 2009. Investigation of the Solution of the Fredholm Integral Equation of Second kind by Using the Fourier Series. *Journal of Mathematics and Mathematical Sciences*, Vol. 24, pp. 145—153, 2009.

c. Books/Monographs

1. **Md. Haider Ali Biswas**, *Mathematics and Physics of Collapsing Stars*, VDM Verlag Dr. Muller, Germany, ISBN: 978-3-6392-2132-9, p. 193, 2010. Available at <http://researchbooks.org/363922132X>
2. Timi Fahria Haque and **Md. Haider Ali Biswas**, *Relativistic Acceleration Relations Based on Force Transformations*, LAP Lambert Academic Publishing, Germany, ISBN: 978-3-8383-4957-2, p. 124, 2010. Available at <http://researchbooks.org/3838349571>.

d. Conference proceedings

1. Tajuddin and **M. H. A Biswas**. *Unification of the Theory of Albert Einstein by Cyclic Theory*. In Proceedings of the **International Conference on Applied Mathematics and Mathematical Physics** (ICAMMP-2004), organized by the Department of Mathematics, Shahjalal University of Science and Technology, Sylhet 3114, Bangladesh on January 4 - 7, 2005.
2. Tajuddin and **M. H. A Biswas**. *Review of the Theory of Relativity*. In Proceedings of the **Eighth Chittagong Conference on Mathematical Physics and Sixth Chittagong Conference on Chemical Physics** organized by RCMPS, Chittagong University, Bangladesh on 14-16 March, 2006.
3. **M. H. A. Biswas**. *Curvature Invariants of Spherically Symmetric Schwarzschild Solution without Cosmological Constant*. In Proceedings of the **National Conference on Mathematics Education and Research in India** organized by Calcutta Mathematical Society, Kolkata, India on 6-8 August, 2007.
4. **M. H. A. Biswas**, M. A. K. Azad and M. A. Ansary. *On Mass Energy Density for a Collapsing Dust Star*. In Proceedings of a day-long Seminar on **Mathematics and Its Applications** organized by Mathematics Discipline, Khulna University, Khulna, Bangladesh on 21 April, 2008.
5. **Biswas, M. H. A.** Calculation of Mass Energy Density for a Collapsing Dust Star. In Proceedings of *The Second International Conference of Mathematics and Natural Sciences (ICMNS08)*, ITB Institut Teknologi Bandung, Indonesia, 28—30 October, 2008.
6. **Biswas, M. H. A.** and MdR de Pinho. A Nonsmooth Maximum Principle for Optimal Control Problems with State and Mixed Constraints-Convex Case. *Discrete and Continuous Dynamical Systems*, Supplement 2011, In *Proceedings of the 8th AIMS International Conference on Dynamical Systems, Differential Equations and Applications*, pp. 174—183, September 2011.
7. **Haider Ali Biswas**, Nazmul Haque and Ashikur Rahman. Application of Control Theory in the Efficient and Sustainable Forest Management. In *APLIMAT 2011, Proceedings of the 10th International Conference on Applied Mathematics*, pp. 375—382, 2011.

8. **M. H. A. Biswas**. Optimal Chemotherapeutic Strategy for HIV Infections-- State Constrained Case. In *studECE2012, Proceedings of the 1st PhD Students Conference in Electrical and Computer Engineering* organized by the Department of Electrical and Computer Engineering, Faculty of Engineering, University of Porto, Portugal on 28-29 June, 2012.
9. **Md. Haider Ali Biswas** and Maria do Rosario de Pinho. *A Variant of Nonsmooth Maximum Principle for State Constrained Problems*. To Appear in the Proceedings of the 51st IEEE Conference on Decision and Control to be held in Maui, Hawaii, USA on December 10-13, 2012.
10. **M. H. A. Biswas**, M. Wahiduzzaman and R. Sultana. *Outbreaks of Deadly Nipah Virus (NiV) Infections in Bangladesh: An Analysis of Mathematical Model*. Accepted for presentation to the International Conference on Engineering Research, Education and Innovation to be held at Shahjalal University of Science & Technology, Sylhet, Bangladesh on 11-13 January, 2013.

e. Thesis/ Report:

1. Biswas, M. H. A. **Studies on Mathematics and Physics of Collapsing Stars**. *M Phil Thesis*, Department of Mathematics, University of Rajshahi, Rajshahi, Bangladesh, 2008.
2. Biswas, M. H. A. 2011. **On Necessary Conditions for Optimal Control Problems with State Constraints**. *Technical Report*, Department of Electrical and Computer Engineering, Faculty of Engineering, University of Porto, Portugal.
3. Biswas, M. H. A. 2012. **PhD Research Plan**. *An Academic Report on Thesis Research Plan*, Department of Electrical and Computer Engineering, Faculty of Engineering, University of Porto, Portugal.

Participation to National/International Seminars/Workshops/Conferences

1. Participated to a day-long national seminar on **Poverty Alleviation** organized by Regional Public Administration Training Centre, Boyra, Khulna, Bangladesh, on November 5, 2002.
2. Participated to a day-long national **Workshop on Mathematics**, organized by Khulna University of Engineering and Technology (KUET), Khulna on 2005.
3. Participated and presented paper to an International Conference on Applied Mathematics and Mathematical Physics (ICAMMP-2004), held in January 4 -7, 2005. Department of Mathematics, Shahjalal University of Science and Technology, Sylhet 3114, Bangladesh.
4. Participated to an International workshop on **Higher education for building nation**, 21st skill development program, organized by World Assembly of Muslim Youth (WAMY), Dhaka office on 01-02 December, 2005.
5. Participated and presented paper entitled **Review of the Theory of Relativity**, to the Eighth Chittagong Conference on Mathematical Physics and Sixth Chittagong Conference on Chemical Physics on 14-16 March, 2006, RCMPS, Chittagong University, Bangladesh.
6. Participated and presided over the seminar on **Prevention of AIDS: Role and Responsibility of Teachers in the Community** jointly organized by Red Crescent Youth, Khulna University Unit and World Vision Bangladesh, Khulna on April 9, 2006.

7. Participated to a two- day training workshop on **Information Management** organized by Khulna University Teachers' Association with the collaboration of Computer Science and Engineering Discipline, Khulna University, Bangladesh on 12-13 May, 2006.
8. Participated to a two- day training workshop on **Bangladesh Country Almanac (BCA)** organized by Khulna University Research Cell, Khulna University, Bangladesh on 18-19 June, 2006.
9. Participated and presented paper entitled **Curvature Invariants of Spherically Symmetric Schwarzschild Solution without Cosmological Constant**, to the National Conference on Mathematics Education and Research in India organized by Calcutta Mathematical Society, Kolkata, India on 6-8 August, 2007.
10. Participated and presented paper to the International Conference on **Frontier of Mathematics & Applications (ICFMA-2008)** in India organized by Department of Mathematics, Burdwan University, Burdwan, India on 16-18 January, 2008.
11. Participated and presented paper to a day-long seminar on **Mathematics and Its Applications** organized by Mathematics Discipline, Khulna University, Khulna, Bangladesh on 21 April, 2008.
12. Participated to a national seminar on **Education for Self Actualization**, University and College Teachers' Program held in Sylhet, organized by World Assembly of Muslim Youth (WAMY), Bangladesh office on 01-02 May, 2008.
13. XIX International Fall Workshop on Geometry and Physics held in Department of Mathematics, Faculty of Science, University of Porto, Portugal, Sep 6-9, 2010.
14. Participated to the **3rd Porto Meeting on Mathematics for Industry** organized by the Center of Mathematics, Department of Mathematics, Faculty of Science, University of Porto, Portugal on 28-30 April, 2011.
15. Participated to the **2011 Joint MBI-NIMBioS-CAMBAM Summer Graduate Workshop** on *Mathematical Ecology and Evolution* at the Mathematical Biosciences Institute, The Ohio State University, Columbus, USA on July 25 to August 5, 2011.
16. Participated to the **SADCO Summer School and Workshop** on *Optimal Control and Optimization* at Imperial College London, London, UK on 5-9 September, 2011.
17. Participated to the **1st IAA Conference on Dynamics and Control of Space Systems (DyCoSS'2012)** held in Porto, Portugal in the Hotel HF Ipanema Porto on March 19-21, 2012.
18. Participated to the **7th International Workshop and Advanced School "Spaceflight Dynamics and Control"** organized at the Engineering School of the Porto University on March 22-23, 2012.
19. Participated to the **Graduate School on Control** organized by the European Embedded Control Institute (EECI) and hosted by Yildiz Technical University, Istanbul, Turkey on 23-27 April, 2012.
20. Participated to the **1st PhD Students Conference in Electrical and Computer Engineering (studECE2012)** organized by the Department of Electrical and Computer Engineering, Faculty of Engineering, University of Porto, Portugal on 28-29 June, 2012.

Selected Presentations/Talks

1. **M. H. A. Biswas**. 2012. Optimal Chemotherapeutic Strategy for HIV Infections-- State Constrained Case. A poster presented to *the 1st PhD Students Conference in Electrical*

- and Computer Engineering* organized by the Department of Electrical and Computer Engineering, Faculty of Engineering, University of Porto, Portugal on 28-29 June, 2012.
2. **M. H. A. Biswas**. Necessary Conditions for Optimal Control Problems with State Constraints: Theory and Applications. *Thesis Research Plan*, presented to the PDEEC Supervising Committee organized by the Department of Electrical and Computer Engineering, Faculty of Engineering, University of Porto, Portugal on 30 March, 2012.
 3. **M. H. A. Biswas**, Suzanne Doig, Moussa Doumbia, Wenrui Hao, Nianpeng Li and Fang Yu. *Optimal Strategy for Controlling the Severity of Wildlife Disease Epidemic due to Harvesting*, a group research work carried out under the guidance of Professor Suzanne Lenhart and presented at the **2011 Joint MBI-NIMBioS-CAMBAM Summer Graduate Workshop on Mathematical Ecology and Evolution** at the Mathematical Biosciences Institute, The Ohio State University, Columbus, USA on July 25 to August 5, 2011.
 4. **M. H. A. Biswas**. An Overview on Behavioural Theory to Systems and Control, presented at the Back to Basics Seminars organized by the Department of Electrical and Computer Engineering, Faculty of Engineering, University of Porto, Portugal on 6 January, 2010.
 5. **M. H. A. Biswas**, M. A. K. Azad and M. A. Ansary. *Calculation of Mass Energy Density for a Collapsing Dust Star*, presented at day-long seminar on **Mathematics and Its Applications** organized by Mathematics Discipline, Khulna University, Khulna, Bangladesh on 21 April, 2008.
 6. **M. H. A. Biswas**. *Curvature Invariants of Spherically Symmetric Schwarzschild Solution without Cosmological Constant*, presented to the **National Conference on Mathematics Education and Research in India** organized by Calcutta Mathematical Society, Kolkata, India on 6-8 August, 2007.
 7. Tajuddin and **M. H. A Biswas**. *Review of the Theory of Relativity*, presented to the **Eighth Chittagong Conference on Mathematical Physics and Sixth Chittagong Conference on Chemical Physics** organized by RCMPS, Chittagong University, Bangladesh on 14-16 March, 2006.
 8. Tajuddin and **M. H. A Biswas**. *Unification of the Theory of Albert Einstein by Cyclic Theory*, presented to the **International Conference on Applied Mathematics and Mathematical Physics (ICAMMP-2004)**, organized by the Department of Mathematics, Shahjalal University of Science and Technology, Sylhet 3114, Bangladesh on 4 -7 January, 2005.

Special Courses Attended

1. Passed one-year certificate course in Spoken-English from the University of Chittagong, Chittagong, Bangladesh on 1998.
2. Passed three months basic Portuguese Language Course (Level-1) conducted by the Faculty of Engineering, University of Porto, Portugal on 2010.
3. Passed basic Portuguese Language Course (Level-1) conducted by the Ministry of Education, Republic of Portugal, Portugal on 2011.

Languages Proficiency

1. Bangla : Mother Language
2. English: Good command both in written and spoken English.
3. Portuguese: Basic understanding.

Memberships of Professional Societies/Institutes

1. Life member, Bangladesh Mathematical Society, Dhaka, Bangladesh, with the Membership No. 289, since 1995.
2. Life member, Bangladesh Red Crescent Society, Dhaka, Bangladesh, since 2002.
3. General member, Asiatic Society of Bangladesh. Dhaka, Bangladesh with the Membership No. 2053, since 2006.
4. Founder Life member, Mathematics Forum Khulna, Bangladesh, since 2008.
5. Student Member, IEEE Control and Systems, with the Membership No. **90726957**, since 2009.
6. Member of International Association of Engineers (IAENG), with the Membership No. **106883**, since 2010.
7. Member of the IAENG Society of Electrical Engineering, since 2010.
8. Member of the IAENG Society of HIV/AIDS, since 2010.
9. Member of the **Working Group on Generalized Convexity** since 2011.
10. Member of the **IEA Greenhouse Gas R&D Programme (IEAGHG)** since 2012.
11. Member of the European Embedded Control Institute (EECI), January- December 2012.
12. **Associate Member** of The Institute of Mathematics and it's Applications (IMA), UK with the Membership No. **22676** since 21 May, 2012.

Editor/Reviewer of Journals/Proceedings

1. Member of the Reviewer Board of *International Journal of Engineering and Technology* (IJET) since 2007.
2. **Guest Reviewer** of the *Proceedings of the 1st International Conference on Industrial Engineering and Operations Management*, Dhaka, Bangladesh, January 9 – 10, 2010.
3. Member of *Scientific and Technical Committee & Editorial Review Board on Engineering and Applied Sciences*, World Academy of Science, Engineering and Technology (WASET) since 2010.
4. Member of the Reviewer Board of *IAENG International Journal of Applied Mathematics* since June, 2010. <http://www.iaeng.org/IJAM/>
5. Member of Reviewers' Panel of *WSEAS Conferences and WSEAS Transactions on Systems and Control* since October 2010. <http://www.worldses.org/journals/control/>
6. Member of the Reviewer Board of APLIMAT 2011, 10th *International Conference on Applied Mathematics* held on February 1-4, 2011, Bratislava, Slovakia. and *Aplimat-Journal of Applied Mathematics* since December, 2010. <http://www.aplimat.com/>
7. Member of the Reviewer Board of *International Journal of Engineering, Science and Technology* (IJEST) since February, 2011. <http://ijest-ng.com/>
8. **Section Editor** (Mathematics and Engineering) of the journal *Recent Research in Science and Technology* (RRST) since March 2011. <http://recent-science.com/>
9. **Member of Editorial Board** of the *International Multidisciplinary Research Journal* (IMRJ) since May 2011. http://irjs.info/pages/view/editorial_board
10. **Guest Reviewer** of the open access journal *BIBECHANA* published from Biratnagar, Nepal on June 2011. <http://nepjol.info/index.php/BIBECHANA/index>
11. Member of **Editorial and Advisory Reviewer Board** of the journal *Academic Research International* since July 2011. <http://www.journals.savap.org.pk/board.html>

12. Member of **Advisory Review Board** of the *Asian journal of Natural and Applied Sciences* since February 2012. <http://ajsc.leena-luna.co.jp/board.php>
13. **Member of Editorial Board** of the *Journal of Control Engineering and Technology* (JCET) since April 2012.
14. **Reviewer** of the *Proceedings of the 3rd International Conference on Industrial Engineering and Operations Management*, Istanbul, Turkey, July 3-6, 2012.
15. Member of the **Advisory Editor Board** of the *International Journal of Basic and Applied Science* (IJBAS) since October 2012. <http://www.insikapub.com/index.php/editor>

Traveled in Abroad

a. Academic Purposes:

1. Visited at International Islamic University Malaysia (IIUM) and Multimedia University, Malaysia on 21 -27 March, 2001.
2. Visited at Calcutta Mathematical Society, Kolkata, India on 6-8 August, 2007.
3. Visited at the Department of Mathematics, Burdwan University, Burdwan, India on 16-18 January, 2008.
4. Visited at the Mathematical Bioscience Institute (MBI), The Ohio State University, Ohio, Columbus, USA on 25 July to 5 August 2011.
5. Visited at the Department of Electrical and Electronic Engineering, Imperial College London, UK on 5 --9 September 2011.
6. Visited at the Department of Control and Automation, Yildiz Technical University, Istanbul, Turkey on 21 --29 April 2012.

b. Multi Purposes:

1. Belgium on August 2010 and September 2012, 2. Germany on September 2010, 3. Italy on September 2011, 4. Luxemburg on August 2010, 5. Madrid, Spain in 2009 and 2011, 6. Detroit, Michigan and Columbus, Ohio, USA in July 2011, 7. Edinburgh, Scotland and London, UK in September 2011, 8. Istanbul, Turkey on 21 --29 April 2012, 9. Oslo, Norway on August 29 – September 1 2012, 10. Stockholm, Sweden on 1-2 September 2012, 11. Budapest, Hungary on 3 September 2012, 12. Warsaw, Poland on 4-5 September 2012, 13. The Hague and Rotterdam, Holland on 8 September 2012.

Member of Inquiry Committee

Member/Member Secretary of different inquiry committee of Khulna University formed by Khulna University Authority, Khulna, Bangladesh from 2002 to 2008.

Member of Peer Review Committee on Physical Sciences

Member of Peer Review Committee on Physical Sciences (for Special Allocation) formed by Ministry of Science, Information and Communication, Government of Bangladesh.

Present Status

I achieved my M Phil degree from the Department of Mathematics, University of Rajshahi, Bangladesh under the M Phil Fellowship Program 2006 of the University Grants Commissions (UGC) of Bangladesh on 2008. Now I am doing the PhD research in the field Optimal Control under the supervision of Professor Maria do Rosário de Pinho, Department of Electrical and Computer Engineering, Faculty of Engineering, University of Porto, Portugal with the financial support by the Foundation for Science and the Technology (FCT), Portugal since January, 2010. I expect to have a PhD in Electrical and Computer Engineering by 2013.

References

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(Md. Haider Ali Biswas)
Signature