

RESUME

**Dr. Md. Raisuddin Khan**

*PhD (Mechanical Engg.) (BUET, Bangladesh)*

*M.Sc (Mechanical Engg.) (BUET, Bangladesh)*

*B.Sc (Mechanical Engg.) (Uni. Of Rajshahi, Bangladesh)*



## PERSONAL DATA

Name	<b>Md. Raisuddin Khan</b>
Date of birth	18 January 1960
Nationality	Bangladeshi
Religion	Islam
Marital status	Married with one child
Office Address	Department of Mechatronics Engineering Faculty of Engineering International Islamic University Malaysia Jalan Gombak, 53100 Kuala Lumpur MALAYSIA
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## SUMMARY QALIFICATIONS AND EXPERIENCES

Total Teaching experience of more than 24 years

- 4 years as lecturer in BIT Rajshahi, Bangladesh
- 11 years as Assistant Professor in BIT Chittagong, Bangladesh
- More than one year as Associate Professor in BIT Chittagong, Bangladesh.
- Continuing as Associate Professor in the International Islamic University Malaysia since January 2001(More than 8 years)

## EDUCATION

<b>Ph.D</b> <b>Dec. 1996</b>	Mechanical Engineering	Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh.
	Thesis Title:	Instability of Composite Shells of Revolution
<b>M. Sc.</b> <b>Eng Jan.</b> <b>1988</b>	Mechanical Engineering	BUET, Dhaka, Bangladesh
	Thesis Title:	Optimization of Ducting System for Air-conditioning
<b>B. Sc. Eng</b> <b>Mar. 1983</b>	Mechanical Engineering	Rajshahi University of Engineering and Technology (RUET) 'Formerly Engineering College Rajshahi' under Rajshahi University, Bangladesh.

## SCHOLARSHIPS AND AWARDS

- ✓ **Bronze Medal:** MALAYSIAN TECHNOLOGY EXPO 2011 (MTE-2011). Md. Raisuddin Khan, Md. Masum Billah, Mohiuddin Ahmed and Nomaziah Abdul Aziz, "Virtual 3D Mapping Software for Unknown Environment".
- ✓ **Bronze Medal:** IIUM RESEARCH INNOVATION AND INVENTION EXHIBITION 2011 (IRIIE-2011). Md. Raisuddin Khan, Md. Masum Billah, Mohiudin Ahmed and Nomaziah Abdul Aziz, "Virtual 3D Mapping Software for Unknown Environment".
- ✓ **Bronze Medal:** IIUM RESEARCH INNOVATION AND INVENTION EXHIBITION 2011 (IRIIE-2011). Md. Raisuddin Khan, Annisa bt. Jamali and Mozasser Rahman, "Design and Development of Variable length Hyper-redundant robot".
- ✓ **Bronze Medal:** IIUM RESEARCH INNOVATION AND INVENTION EXHIBITION 2010 (IRIIE-2010). Md. Raisuddin Khan, Mohiudin Ahmed and Md. Masum Billah, "Autonomous Reconnaissance Mission: Development of an Algorithm for Collaborative Multi Robots Communication".
- ✓ **Bronze Medal:** IIUM RESEARCH INNOVATION AND INVENTION EXHIBITION 2010 (IRIIE-2010). Md. Raisuddin Khan, SK. Eklas Hossain and Riza Muhida, "Electronic Blind Support System".
- ✓ **Gold Medal:** INTERNATIONAL INVENTION, INNOVATION & TECHNOLOGY EXHIBITION 2009 (ITEX-2009). Md. Raisuddin Khan, Mitsuru Watanabe and Amir Akramin Shafie, "Snake Robot for Narrow Space Application".
- ✓ **Silver Medal:** KULLIYAH OF ENGINEERING RESEARCH AND INNOVATION EXHIBITION 2009 (KERIE-2009). Md. Raisuddin Khan, Mitsuru Watanabe and Amir Akramin Shafie, "Snake Robot for Narrow Space Application".
- ✓ **Bronze Medal:** KULLIYAH OF ENGINEERING RESEARCH AND INNOVATION EXHIBITION 2009 (KERIE-2009). Md. Raisuddin Khan, Syed



March 1984 – March 1988 Bangladesh Institute of Technology, Rajshahi, Bangladesh  
Lecturer, Department of Mechanical Engineering

## **COURSES TAUGHT**

### ***UNDEGRADUATE COURSES***

- Microelectromechanical Systems (MEMS)
- System Dynamics.
- Engineering Mechanics
- Electromechanical Systems
- Theory of Machines and Mechanisms
- Mechanics of Solids
- Machine Design
- Fluid Mechanics
- Heat Transfer
- Computer programming
- Engineering Drawing and Descriptive Geometry

### ***POSTGRADUATE COURSES***

- Mechanical Vibrations
- Modeling and Simulation
- Stability of Elastic Structures
- Theory of Elasticity
- Advanced Numerical Analysis

### **LAB DEVELOPMENT**

- ❖ Mechatronics Workshop
- ❖ Industrial Automation

## **CURRENT RESEARCH ACTIVITIES**

- ***Snake Robot Modelling***

Snake robot research so far is centered about the mathematical model developed by Prof. Hirose, one of the Japanese Professors. This model has difficulties in the case of applications in narrow spaces. We have already developed a new mathematical model which can overcome the difficulties of the Hirose model. The next step of this research is to integrate Hirose model and our new model to develop snake robots with wide range of motion capabilities, which in turn will help investigate disaster scenario as well as monitor defects inside / outside pipes in petrochemical industries.

- ***Automatic Car Parking System***

This research is a part of Automatic Storage and Retrieval System (ASRS). A new mechanical system has already been designed in this connection. Research is now going on in developing an algorithm, which will help storage and retrieval of pallets those change address dynamically.

- ***Disabilities Rehabilitation***

This research aims in developing electronic gadget that will assist blind people walk almost like people with eyes.

## RESEARCH GRANTS

- **Endowment Fund: Automatic Car Parking System” (RM20,000),** Since April 2008. (Completed)
- **Endowment Fund: Mechatronic Walking Support System for Visually Impaired People. (RM20,000),** Since May 2008. (Completed)
- **FRGS Research Grant: MEMS Actuated Mesoscale (order of centimeter) Active compliant Mechanism for Executing Motion in 3D Space. (RM 40,000).** Since 2007. (Completed)

## SUPERVISED RESEARCH THESIS

### As Supervisor

- Sk Eklas Hossain, M.Sc. in Mechatronics Engineering, “**Terrain Detection and Hardware Implementation for Walking Support System**”. 2010
- Shobowale Kafayat Oluwatoyin, M.Sc. in Mechatronics Engineering, “**Design of an Automatic Storage System for Handling Pallets hanging Address Dynamically**”, 2010.
- Syed Masrur Ahamad, M.Sc. in Mechatronics Engineering, “**Position Control of Hyper-Redundant Robotic Manipulator**”, 2009
- Zohir Benlahcene, M.Sc. in Mechatronics Engineering, “ **Analysis of Semiactive Control Policies for Off-Road Vehicles**” 2009
- Lim Tze Min, M.Sc. in Mechatronics Engineering, ‘**Condition Monitoring of Rolling Element Bearings Using Vibration Analysis**’, February 2008.
- Mitsuru Watanabe, M.Sc. in Mechatronics Engineering, “**Design and Control of a Snake Robot for Narrow Space Application**”. 2008
- Iskandar Al-Thani Bin Mahmood, M.Sc. in Mechatronics Engineering, **Active Shape Control of Piezoelectric Laminated Composit-Plate Using Finite Element Analysis.** 2003

### As Co-Supervisor

- Asan Gani Abdul Muthalif, M.Sc. in Mechatronics Engineering, **Active Vibration Control Using PiezoElectric Materials, June 2003**
- Mohd Sultan Ibrahim, M.Sc. in Manufacturing Engineering, **Free Vibration Analysis Of Laminated Composite Plates Based On Higher Order Shear Deformation Theory Using Finite Element Method, September 2002.**

## CURRENT RESEARCH STUDENTS

### PhD Student

#### Committee member

- Aseef Iqbal, “**Decision-theoretic Planning for Human-Robot Interaction via Partially Observable Markov Decision Process (POMDP)**”

### M.Sc Students

#### As Supervisor

- Md. Masum Billah, “**DESIGN AND IMPLEMENTATION OF AN ALGORITHM FOR COLLABORATIVE MULTI-AGENT ROBOTS IN AUTONOMOUS RECONNAISSANCE**”.
- Annisa Binti Jamali, “**DESIGN AND DEVELOPMENT OF A VARIABLE LENGTH HYPER-REDUNDANT ROBOTIC MANIPULATOR**”.
- Mad Helmi Bin Ab Majid, “**DESIGN AND DEVELOPMENT OF A SNAKE ROBOT WITH MIXED MODE LOCOMOTION**”.

## SELECTED SUPERVISED FINAL YEAR PROJECTS

- 1) GPS guided autonomous vehicle for tracking predetermined road (Ongoing)
- 2) Position control of 4-link hyper-redundant robotic manipulator (Ongoing)
- 3) Omni wheel robot control under random obstacles (Ongoing)
- 4) Design and Development of an Unmanned Underwater Vehicle (2008)
- 5) Design and Development of a bicycle Simulator (2008)
- 6) Design and Development of an auto car parking system (2007)
- 7) Development of a jet powered floating platform (in air) (2007)
- 8) Stair Climbing robot (2006)
- 9) Intelligent Coconut Processing (2006)
- 10) Intelligent Camera Guided Robotic Arm (2006)

- 11) Design and Development of Compliant Stewart Mechanism (2005)
- 12) Flying Robot (2005)
- 13) Design and development of Stepper Motor Using Electrostatic Force (2005)
- 14) Focus control Using Flexible Lens (2005)
- 15) Smart Seat and Seat-Belt for Passenger Safety (2005)
- 16) Design and Prototyping of a Three Fingered Robotic Gripper (2004)
- 17) Active Vibration Control Using Magnetic Damper (2004)
- 18) Active Vibration Control Using Magnetorheological Fluid (2003)
- 19) SMA Actuated Robotic Gripper (2003)
- 20) Design and Development of a Semi-automatic Weaving System (2003)
- 21) Design of automatic Blending Machine (2002)
- 22) Design and Development of a Climbing robot (2002)

### **PROFESSIONAL MEMBERSHIP**

Member IEEE ,USA ( 80672791)  
 Life Fellow, Institute of Engineers, Bangladesh (F6323)  
 Life Fellow, Bangladesh Society of Mechanical Engineers (F02009 ME)

### **SERVICES**

- Student Advisor, three terms
- Postgraduate Coordinator, one term
- Department Curriculum Coordinator, (2002-2006)
- Member, Curriculum Committee,
- Member, Kulliyah Board
- Member, Kulliyah Postgraduate Research Committee

### **COMMUNITY DEVELOPMENT ACTIVITIES**

- Founding President, Computer Club, BIT Chittagong, Bangladesh
- General Secretary, Federation of Teachers' Associations of the BITs, Bangladesh
- President, Teachers' Club, BIT Chittagong , Bangladesh
- Vice President, Teachers' Club, BIT Chittagong, Bangladesh



## ORGANIZATION OF CONFERENCES

- Member, International Advisory Board, 1<sup>st</sup> International conference on Mechanical, Industrial and Energy Engineering (ICMIEE2010), Khulna, Bangladesh, December 2010
- Secretary, 3<sup>rd</sup> International Conference on Mechatronics (ICOM '08), Kuala Lumpur, Dec 18-20 2008.
- Technical Chair, Second International Conference on Mechatronics (ICOM '05), Kuala Lumpur, May 2005

## REVIEW OF TECHNICAL PAPERS

- International Conference on Mechatronics, 2008
- IIUM World Congress 2008
- Journal of Mechanical Engineering, Institution of Engineers, Bangladesh 2007
- International Conference on Mechatronics, 2005
- International Journal of Advances in Engineering Software, UK, 2004
- Third International Conference on Advanced Manufacturing Technology, Kuala Lumpur, Malaysia, 2004
- International Islamic University Malaysia (IIUM) Engineering Journal, 2002

## PUBLICATIONS

### Publications in Journals

#### 2010

1. Raisuddin Khan, M. Watanabe and A.A. Shafie, “*Kinematics Model of Snake Robot Considering Snake Scale*”, American Journal of Applied Sciences 7(5): 669-674, 2010
2. Mohiuddin Ahmed, Md. Raisuddin Khan, Md. Masum Billah and Soheli Farhana, “*Multi-agent Application: A Novel Algorithm for Hexagonal Hexapod Robot*”, Australian Journal of Basic and Applied Sciences, Vol. 4, No. 8, PP.2292-2299, ISSN 1991-8178, 2010
3. Mohiuddin Ahmed, Md. Raisuddin Khan, Md. Masum Billah and Soheli Farhana, “*A Novel Navigation Algorithm for Collaborative Multi Robots*”, European Journal of Scientific Research, Vol. 41, No. 3, PP.472-481, ISSN 1450-216X, 2010
4. Mohiuddin Ahmed, Md. Raisuddin Khan, Md. Masum Billah and Soheli Farhana, “*A Novel Navigation Algorithm for Hexagonal Hexapod Robot*”, American Journal of Engineering & Applied Sciences, Science Publication, Vol. 3. No. 2, PP. 320-327, ISSN 1941-7020, 2010
5. Mohiuddin Ahmed, Md. Raisuddin Khan, Md. Masum Billah, Soheli Farhana, “*Walking Hexapod Robot in Disaster Recovery*”, Book Chapter: New, Advanced Technologies, ISBN 978-953-307-067-4, CH. 22, PP. 341-350, In-Tech publication, March 2010.

**2006**

1. Asan Gani, M.J.E. Salami, and **Md. Raisuddin Khan**, “Compensated Inverse PID Controller for Active Vibration Control With Piezoelectric Patches Modeling, Simulation and Implementation”, *IIUM Engineering Journal*, Vol. 7, No. 2, pp. 43-59, 2006.

**2003**

2. M.J.E. Salami, N. Mir-Nasiri and **M.R. Khan**, “Development of Mechatronics Engineering degree program: Challenges and prospects”, *International Journal of Engineering Education (Special edition on Mechatronics education)*, pp. 537- 543, Tempus Publication, Dublin, Ireland, September 2003.

**2000**

3. M. Abdus Salam Akanda, S Reaz Ahmed, **M Raisuddin Khan** and M Wahhaj Uddin, ‘A finite difference scheme for mixed boundary value problems of arbitrary shaped elastic bodies’, *Advances in Engineering Software*, U.K, 31, pp. 173-184, 2000.

**1998**

4. **Md. Raisuddin Khan**, M A Salam Akanda and Md. Wahhaj Uddin, ‘ A new approach to instability testing of shells’, *International Journal of Pressure Vessels and Piping*, U.K, 75, pp. 75-80,1998.
5. S. Ahmed Reaz, **MR Khan**, KMS Islam and Md. Wahhaj Uddin, ‘Investigation of stresses at the fixed end of deep cantilever beams ‘, *Journal of Computers and Structures*, U.K, Vol. 69, pp. 329-338,1998.

**1997**

6. Prashaanta Dutta, **Md. Raisuddin Khan**, Md. Abdus Salam Akanda and Md. Wahhaj Uddin, ‘Stability analysis of a toroidal pipe-reducers under uniform external pressure’, *International Journal of Pressure Vessels and Piping*, U.K, Vol. 69, 75, 1997.
7. M.A Rahman, G M Zulfikar, **Md. R Khan** and Md. W Uddin, ‘Stress analysis of conical pipe-reducers’, *Journal of Institute of Engineers, India*, pp. 145-149, 1997.

**1996**

8. Sk Reaz Ahmed, **MR Khan**, KMS Islam and Md. Wahhaj Uddin, ‘Analysis of stresses in deep beam using displacement potential function’, *Journal of Institute of Engineers, India*, pp. 141-147,1996.

**1995**

9. **Md. Raisuddin Khan** and Md. Wahhaj Uddin, ‘ Instability of cup-cylinder compound shell under uniform external pressure’, *Journal of Ship research*, USA, Vol.39, No. 2, pp. 160-165, 1995.

10. **Md.Raisuddin Khan** and Md. Wahhaj Uddin, 'The stability of conical end caps with spherical tip as end closures for pressure vessels', *International Journal of Pressure Vessels and Piping*, U.K, 64, pp. 11-16,1995.
11. M Ashiqur Rahman, **Md. Raisuddin Khan** and Md. Wahhaj Uddin, ' Stability analysis of a parabolic pipe-reducer under uniform external pressure', *International Journal of Pressure Vessels and Piping*, U.K, Vol. 64, pp. 1-10,1995.

### Refereed Papers in Proceedings

#### 2010

12. Mohiuddin Ahmed, **Md. Raisuddin Khan**, Md. Masum Billah and Soheli Farhana, "*Collaborative Navigation Algorithm for Multi-agent Robots in Autonomous Reconnaissance Mission*", *International Conference on Computer & Communication Engineering (ICCCE'10)*, Kuala Lumpur, Malaysia, May 11-13, 2010
13. Shobowale Kafayat Oluwatoyin, **Md Raisudin Khan**, Riza Muhida, "Tracking of Pallet in Automatic Storage and Retrieval system", *Proceeding of International Conference on Electrical Energy and Industrial Electronics Systems*, Dec. 7-8, 2010, Penang, Malaysia

#### 2009

14. Md. Masum Billah, Mohiuddin Ahmed, **Md. Raisuddin Khan** and Soheli Farhana, "Hexagonal Structure Hexapod Robot: Developing a Method for Omni-directional Navigation", *Proceeding of International Conference on Asian Simulation and Modeling (ASIMMOD' 09)*, Page 435-440, 22-23, Bangkok, Thailand, January 2009
15. Zohir BenLahcene, a Waleed F. Faris, and **M. D. Raisuddin Khan**, "Analysis of Semi-Active and Passive Suspensions System for Off-Road Vehicles" *AIP Conf. Proc. -- March 5, 2009 -- Volume 1107*, pp. 318-323 *INTELLIGENT SYSTEMS AND AUTOMATION: 2nd Mediterranean Conference on Intelligent Systems and Automation (CISA'09)*; DOI:10.1063/1.3106493 Issue Date: 5 March 2009
16. Shobowale Kafayat Oluwatoyin, **Md Raisudin Khan**, Riza Muhida, "Control of Pallets in automatic storage and retrieval system", *International Conference on Engineering and ICT*, February 2009, Melaka, Malaysia

#### 2008

17. Watanabe and Md. **Raisuddin Khan**, 'Investigation of a novel type of locomotion for a snake robot suited for narrow spaces.' In *Proceedings of International Conference on Mechatronics (ICOM 2008)*. Kuala Lumpur, Malaysia, December 2008.
18. Syed Masrur Ahamad, **Md. Raisuddin Khan**, Md. Mozasser Rahman, 'Inverse Kinematics of a Hyper-Redundant Robotic Manipulator', *Proceedings of the 3rd*

International Conference on Mechatronics, ICOM'08, Kuala Lumpur, Malaysia, December 2008, pp 132-137.

19. M. M. Rahman and **M.R. Khan**, "Cooperative Robot and User Friendly Robot- New Challenge in Robotics", In Proceedings of International Conference on Mechatronics (ICOM 2008). Kuala Lumpur, Malaysia, December 2008.
20. Zohir BenLahcene, Waleed Faris, **Md. Raisuddin Khan** and S.I. Ihsan, 'Semi-Active Suspension System for Off-Road Vehicle', In Proceedings of International Conference on Mechatronics (ICOM 2008). Kuala Lumpur, Malaysia, December 2008.
21. M.A.S. Kamal, **Raisuddin**, Wahyudi, R. Muhida, 'Comprehensive Driving Behavior Model for Intelligent Transportation Systems', International Conference on Computer and Communication Engineering (ICCCE'08), Kuala Lumpur, Malaysia, May 13-15, 2008.
22. **Md. Raisuddin Khan**, Syed Masrur Ahamad and Mitsuru Lukman Watanabe, 'Snake Robot: Current State of The Art and Future Trend', The 2<sup>nd</sup> International Symposium on Advanced Mechatronics Engineering, Changwon National University, Korea, 29 February 2008.

### 2007

23. Lim Tze Min and **Md. RaisuddinKhan**, ' New Condition Indicator for Condition Monitoring of Rolling Element Bearing', International Conference on Control, Instrumentation and Mechatronics Engineering (CIM'07), Johor Bahru, Johor, Malaysia, May 28-29, 2007.
24. Amir A Shafie, **Md Raisuddin Khan** and Md Shehzad Islam,' Application of GPS in Trajectory Planning for UAV Using a Microcontroller Based System,' International Conference on Control, Instrumentation and Mechatronics Engineering (CIM'07), Johor Bahru, Johor, Malaysia, May 28-29, 2007.

### 2006

25. **Md. Raisuddin Khan**, Momoh Jimoh E. Salami and Mohiuddin, 'Autonomous Biomimetic Robot Based Multi-Agent System for Disaster Management and Rescue', 50<sup>th</sup> ASAIHL Anniversary: Disaster Management Through Regional Conference' Jakarta, Indonesia, Dec. 4-7, 2006.
26. Amir. A. Shafie, **Raisuddin. K**, M.N. Muhammad, N. Nordin, 'Camera Guided Robotic Arm' Third International Conference on Artificial Intelligence in Engineering and Technology – ICAIET-2006, Kota Kinabalu, Sabah, Malaysia, Nov. 22-24, 2006.
27. Thein Moe Win@ Shamsudin, M.J.E Salami and **Raisuddin Khan**, ' RFID-Based Intelligent Book Shelving System', Third International Conference on Artificial Intelligence in Engineering and Technology – ICAIET-2006, Kota Kinabalu, Sabah, Malaysia, Nov. 22-24, 2006
28. Amir A. Shafie, **Raisuddin K**, H. Al-haieaid and M. Ebrahim, 'Development of Intelligent Air-conditioning System', International Conference on Energy &

Environment 2006 (ICEE 2006), 28<sup>th</sup> -30<sup>th</sup> August 2006, Universiti Tenaga Nasional, Selangor, Malaysia.

29. **Md. Raisuddin Khan** and Iskandar Al-Thani Mahmood, 'Twist analysis of piezoelectric laminated composite plates', 1<sup>st</sup> International Conference & 7<sup>th</sup> AUN/SEED-Net Fieldwise Seminar on Manufacturing and Material Processing (ICMM 2006), Kuala Lumpur, Malaysia, 14-15 March.

#### 2005

30. Soran Jalal Abdullah, **Md. Raisuddin Khan** and Wahyudi, 'Focus Control Using Flexible Lens' International Conference on Mechatronics Technology 2005 (ICMT 2005), Kuala Lumpur, Malaysia 5-8 Dec. 2005.

#### 2004

31. **M.R. Khan**, A.F. Ismail and M.S. Ibrahim, 'Influence of Higher Order Coupling Terms in Vibration Analysis of Anti-Symmetric Cross-Ply Composite Plates', Proceedings of the 3<sup>rd</sup> International Conference on Advanced Manufacturing Technology (ICMAT 2004), Kuala Lumpur, Malaysia, May 11-13, 2004.
32. Iskandar Al-Tani Mahmood and **Md. Raisuddin Khan**, 'Modeling of Piezoelectric Laminated Composite Plate Using Finite Element Analysis', Proceedings of the 3<sup>rd</sup> International Conference on Advanced Manufacturing Technology (ICMAT 2004), Kuala Lumpur, Malaysia, May 11-13, 2004.

#### 2003

33. Asan Gani, M.J.E Salami, **Md. Raisuddin Khan**, 'Active suppression of vibration modes with piezoelectric patches: Modeling, Simulation and Experimentation', Proceedings of the IASTED international conference on Applied Simulation and Modeling (ASM 2003), Marbella, Spain, Sept 3-5, 2003.
34. Asan Gani, M.J.E Salami, **Md. Raisuddin Khan**, 'Active Vibration Control of a Beam with Piezoelectric Patches: Real-time Implementation with xPC target, Proceedings of the Conference on Control Applications- IEEE, Istanbul, June 23-25, 2003.

#### 2002

35. Mohd Sultan Ibrahim, A. F. Ismail, **M. R. Khan**, Free Vibration Analysis of Laminated Composite Plates Based on Higher Order Shear Deformation Theory by Using Finite Element Method, Proceedings of the Annual Workshop National Science Fellowship (NSF), Petaling Jaya, Malaysia pp. 22-24, 2002

#### 1996

36. **Md. Raisuddin Khan** and Md. Wahhaj Uddin, 'Stability and imperfection sensitivity of spherical-tip conical shells', Proceedings of International Conference on Advances in Steel Structures, Honk Kong , Vol II, Dec 1996, pp. 775-780.

#### Technical Reports (Submitted)

37. **Md. Raisuddin Khan**., "Optimal Design and Modeling of Compliant Micro-Linkage Mechanisms". IIUM Short-term Research Grant, Report submitted to the IIUM Research Centre July 25, 2003.

#### Papers presented in Workshop/Seminar

38. **Md. Raisuddin Khan**, "Hyper Redundant Robot and its Future", Institute of Information Technology, University of Dhaka , 29 November 2008.