Activities of Subhas during January 1, 2009 to December 31, 2009

Name: Associate Professor Subhas Chandra Mukhopadhyay

Department/Institute/School: School of Engineering and Advanced Technology

College: College of Sciences

A few achievements of the year 2009:

1. **Technical programme chair of ICARA 2009:** The 4th International Conference on Autonomous Robots and Agents (ICARA) was held during February 10 – 12, 2009 at James Cook Hotel, Wellington, New Zealand. I was the Technical programme chair for the ICARA 2009. The conference was well organized and attended by around 100 people from 22 countries.

2. **Editorial activity of ICARA 2009:** Edited the proceedings of the ICARA 2009. The proceedings was published with the following details:


3. Appointed external examiner of PhD thesis by UNIVERSITY TEKNOLOGI MALAYSIA, Malaysia. Travelled to Malaysia to conduct the oral examination.


5. Invited by the University of Calgary, Canada to visit the university and discuss collaborative research.

6. Appointed as an Editor for Asia-Pacific for the Sensors and Transducer journal.


9. **Organized** the 8th IEEE Sensors Conference, October 25 to 28, 2009, Christchurch, New Zealand as General Chair. A total of 1165 papers were submitted, a record for the history of IEEE Sensors conference. 565 people registered for the conference and 535 people from 37 countries attended the conference.

10. **Organized** one-day international workshop on Sensors and Instrumentation on Environment and Climate Change Monitoring, October 30, 2009, Massey University, Palmerston North campus.


12. **Awarded** the 2nd best prize in the International Digital Signal Processing Creative Design Contest on the Student project “Abnormal Behavior Detection of Elder People using Smart Wireless Sensors Network”, organized by Southern Taiwan University, Tainan, Taiwan, November 19, 2009.

Activities during 2009:

A. Teaching related

(a) Undergraduate Teaching (internal):

<table>
<thead>
<tr>
<th>Paper Numbers</th>
<th>Contact Hours (hours taught)</th>
<th>Number of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st semester, 2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i) 143.339 Design for Computer and Communication Systems (25%)</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>[9 hrs lecture + 18 hrs laboratory]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii) 143.222 Technological Mathematics A</td>
<td>82</td>
<td></td>
</tr>
<tr>
<td>[21 hours lecture + 4 hours tutorial]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd semester, 2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii) 143.352 Electromagnetics (45%) [26 hrs lecture &amp; tutorial+26 hrs lab]</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>iv) 143.335 Instrumentation Electronics and Control Engineering (45%) [24 hrs lecture + 39 hrs of lab]</td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>v) 143.465 Management of Information Systems and Reliability (6 hours lecture)-</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

(b) SECAT results: The SECAT of the following subject was taken during 2009 and is shown in the table below.

Table: SECAT results taken in 2009

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The teacher comes to class well prepared</td>
<td>4.6</td>
<td>4.6</td>
<td>4.9</td>
</tr>
<tr>
<td>2. The teacher communicates effectively in the class</td>
<td>4.5</td>
<td>4.6</td>
<td>4.6</td>
</tr>
<tr>
<td>3. The teacher is approachable and helpful</td>
<td>4.6</td>
<td>4.6</td>
<td>4.7</td>
</tr>
<tr>
<td>4. The teacher encourages active learning</td>
<td>4.5</td>
<td>4.6</td>
<td>4.8</td>
</tr>
<tr>
<td>5. Overall, taking everything into account, I am satisfied with the quality of this person’s teaching</td>
<td>4.5</td>
<td>4.7</td>
<td>4.7</td>
</tr>
</tbody>
</table>

Other activities related to teaching:

(c) Students Supervision:

Completed:

Master supervision: 1

Honours: 10

1. **Samuel Garatt** – Maximum power and efficiency tester for solar cells.
2. **Rowan Walsh** – Transverse critical current testing in high temperature superconducting material
3. **Justic Gonyora** – Health Sensors station
4. **Usman Awan** – Wireless Intelligent Bed Sensor system
5. **Khalil Alkhumaisi** – Pain Sensitivity measurement system
6. **Mark Seelye** – Robotic Arm for Plant Imaging
7. **Quan Minh Vu** – Image Capturing System for Robotic Arm
8. **Richard Chapmen** – Automated Cattle Feed Mixer – I
9. **Peter Barlow** - Automated Cattle Feed Mixer – II

Exchange student from the University of Limerick: **Michael Healy** for 5 months.

Current students: 7
6. **Ian Andrew Emerson**, “Design and Experiment of a Novel Exoskeleton for Medical Rehabilitation”, PhD student.

Thesis examination: 7
1. Fawaz Al-Qahtani, MIMO Techniques for Higher Data Rate Wireless Communication, PhD, RMIT University, Australia, January 2009.
4. Abdul Rashid Bin Hussain, Multi-objective Sliding Mode Control of Active Magnetic Bearing, PhD, Universiti Teknologi Malaysia, Malaysia, May 2009.


(d) PUBLICATIONS: Total items = 14

JOURNALS: 3


Chapter in Book: 1


FULL CONFERENCE PAPERS: 10


(e) Presentations: Total items = 13

Keynote presentation: 0

Invited presentation at Conference/seminars/workshop: 2


Tutorial presentation: 0

Special presentations: 11

1. April 22, 2009, Seminar presented at the Department of Electrical and Computer Engineering, University of Calgary, Canada, “Wireless Sensors Based Smart Home to Care Elderly”.


4. June 24, 2009, Sensors and Robotic Environment for care of the Elderly, organized by Faculty of Electrical Engineering, University Technology Malaysia, Johor, Malaysia.

5. October 30, 2009, Sensors Research on Environmental Monitoring at Massey University, New Zealand, One-day workshop on Sensors and Instrumentation on Environment and Climate Change Monitoring, Massey University, New Zealand.


7. November 18, 2009, National Taiwan University, Taipei, Taiwan, “Wireless sensors based Home Monitoring and Smart Sensors for Safe Food”.


9. December 2, 2009, School of Engineering and Mathematical Sciences, City University of London, United Kingdom, “Smart Monitoring: Home and Health”.


**Other Oral Presentations at Conferences: 3**


**Poster presentation: 0**

(i) **Conference/Event organization: 3**

1. The 4th International Conference on Autonomous Robots and Agents (ICARA) was held during February 10 – 12, 2009 at James Cook Hotel, Wellington, New Zealand. I was the Technical programme chair for the ICARA 2009. The conference was well organized and attended by around 100 people from 22 countries.

2. Organized the 8th IEEE Sensors Conference, October 25 to 28, 2009, Christchurch, New Zealand as the General Chair. A total of 1165 papers were submitted, a record for the history of IEEE Sensors conference. 565 people registered for the conference and 535 people from 37 countries attended the conference.

3. Organized one-day international workshop on Sensors and Instrumentation on Environment and Climate Change Monitoring, October 30, 2009, Massey University, Palmerston North campus.

**Organization of special session: 1**


**Chairing technical sessions: 6**

5. May 6, 2009, Session 3B1: Chemical and Biological Measurement 10:20 AM to 12:15 PM, Room 301.

(g) **Editorial activities: Total items = 5**

**Books: 2**


**Journal special issue: 2**


Conference proceedings: 1


Other editorial works

(i) Editorial activities for the IEEE Sensors journal
(ii) Editorial activities for the IEEE Transactions on Instrumentation and Measurements
(iii) Editorial board member of NDT e-journal.
(iv) Editorial board member of Transactions on Systems, Signals and Devices (TSSD).
(v) Editorial board member of “Sensors and Transducer” journal.
(vi) Associate editor for Journal on Sensors, Hindawi publication.
(vii) Editorial board member of the on-line journal “RECENT PATENTS ON ELECTRICAL ENGINEERING”.

(h) Technical Programme Committee members:

1 Member, Technical Programme Committee, IEEE I2MTC 2009

2 General Chair, IEEE Sensors Conference 2009

3. 2010 IEEE International power and Energy Conference


5. 7th International Multi-conference on Systems, Signal and Devices.


(j) Reviews and critiques of scholarly work:

(i) IEEE Sensors Journal, USA - 8 papers.
(ii) IEEE Transactions on Magnetics, USA - 2 papers.
(iii) IEEE Transactions on Instrumentation and Measurements – 4 papers.
(iv) IET Science, Measurement and Technology – 1 paper.
(vi) Elsevier, Sensors and Actuators B Chemical – 1 paper.
(vii) IEEE I & M Magazine – 1 paper.
(viii) The Protein Journal – 1 paper.
(ix) IEEE Microwave Magazine – 1 paper.
(x) IEEE Transactions on Fuzzy Systems – 2 papers
(xi) Journal on Medical Systems – 2 papers
(xii) Elsevier Digital Signal processing – 1 paper.
(xiii) IEEE Transactions on Circuits and Systems II – 1 paper.
(xiv) Recent Patents on Electrical Engineering – 1 paper
(xv) IEEE DELTA 2010 – 7 papers.
(xvi) 7th European Conference on Wireless Sensor Networks – 9 papers.
(xvii) IEEE I2MTC 2009 – 12 extended abstracts.
(xx) 3rd International Conference on Signals, Circuits and Systems, Nov. 6-8, 2009, Jerba, Tunisia – 4 papers.
(xxi) International Conference for Technical Postgraduates – 5 papers.
(xxiii) IET Science, Measurement & Technology – 2 papers.
(xxiv) Springer – MECCANICA – 1 paper.

**Total = 82 papers.**

**Examination of External Funding Project: 2**
1. Canada Foundation for Innovation.
2. Singapore Research Foundation.

**C. Research/Travel Grants and Contracts: 5**

1. Southern Taiwan University, Taiwan, NZ $ 6200.00 towards travel, accommodation and living for myself and one of my student for the participation in 2009 Creative design Contest, November 19, 2009.

2. Universiti Teknologi Malaysia, Malaysia, NZ $4,700.00 towards travel, accommodation and living expenses for conducting PhD examination, collaborative research work, June 2009.

3. The University of Calgary, Canada, NZ $3800.00 towards travel accommodation and living expenses for collaborative research work, April 2009.

4. Massey University Doctoral scholarship awarded to Mr. Anuroop Gaddam

5. Massey University Vice-chancellor scholarship awarded to Mohd. Syaifudin.

**D. Service:**

(a) **Department/Institute/School:**
1. Postgraduate Advisor of SEAT.

2. **Paper coordination:**

1. 143.335 Instrumentation, Electronics and Control Engineering

2. 143.352 Electromagnetics.

(b) **Discipline/Profession**
1. Fellow, IEE, UK,

2. Senior member, IEEE (Institution of Electrical and Electronics Engineers, USA).
3. Associate Editor, IEEE Sensors Journal.
4. Associate Editor, IEEE Transactions on instrumentation and Measurements.
5. Executive committee member, IEEE NZ South section.
6. Secretary, IEEE New Zealand Central Section.

Other activities:

IPENZ accreditation: Benchmarking of our degree programme with the University of Auckland

(c) Community:
1. President, Manawatu Bangalee Society.

(d) Others:

News items:

Overseas travel:
Following trips were made in 2009.

1. University of Calgary during April 20-28, 2009
2. Singapore to attend IEEE I2MTC, may 4 to 7, 2009
3. Universiti Teknologi Malaysia, Malaysia, during June 20-28, 2009
4. Southern Taiwan University, Taiwan, November 16-21, 2009
5. University of Limerick, City University London, University of Rostock, Kolkata (India) during November 23-Deceber 21, 2009.

Training and development courses

1. Wed 8 July 9.00 -12.30 KMIR1 (Knowledge Management in Research)
2. Wed 8 July 1.30 -4.00 KMIR3A (Introductory Endnote)
3. Thurs 9 July 9.00 -12.30 KMIR4 (Scholarly Internet)
4. Thurs 9 July 1.30-4.00 KMIR3B (Advanced EndNote)
5. Fri 10 July 9.00-11.00 KMIR5 (Making Your Research Count)

Tutorial in IEEE IMS web site
http://www.ieee-ims.org/evts/node/19

My personal reflection:

It was a busy year as the IEEE Sensors conference was organized successfully.