



**B.M.S.COLLEGE OF ENGINEERING, BANGALORE-560 019**  
**TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME, PHASE-II**

**EIGHTH MEETING | 20.11.2013 | SUB-COMMITTEE OF BOG | MINUTES**

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**MEMBERS PRESENT:**

1. Prof. D. Thukaram, Chairman
2. Sri. M. Krishnaswamy, Member
3. Dr. K. Mallikharjuna Babu, Principal & Convenor

**NODAL OFFICERS/CO-ORDINATORS PRESENT:**

1. Dr. G. N. Sekhar, TEQIP Co-ordinator I
2. Dr.L.Ravikumar, TEQIP Co-ordinator-II
3. Dr. K.R.Suresh, Nodal Officer – Financial Aspects
4. Dr.M.S.Dharmaprakash, Nodal Officer- Procurement
5. Dr. H. S. Guruprasad, Nodal Officer - Academic Activities
6. Dr.K. Guruprasad , Nodal Officer - Equity Assurance Plan Implementation
7. Dr.C.Lakshminarayana, Nodal Officer - Equity Assurance Plan Implementation
8. Dr.M.C.Sampath Kumar, Nodal Officer-CW including EM
9. Dr.M.Indiramma, Coordinator-IIIC
10. Dr.S.Gowrishankar, Nodal Officer - Academic Activities
11. Sri.C.T.Puttaswamy, Nodal Officer-CW including EM
12. Dr.M.Ramachandra, Principal Investigator & Co-ordinator, CoE
13. Dr.S.Srinivas, Principal Investigator, CoE
14. Dr.Murugendrappa, Principal Investigator, CoE
15. Dr.Chandashree Das, Principal Investigator, CoE

**MEMBERS PRESENT ON INVITATION:**

**Dr. Martin Jebraj, Director (R&D)**

The Principal and the convenor of the sub-committee of BOG welcomed the members for the meeting.

1. **Read and record the minutes of the seventh meeting of the BOG sub-committee held on 11<sup>th</sup> September 2013.**

The minutes of the seventh meeting of the BOG sub-committee held on 11.9.2013 were read and recorded [Annexure-1].



**EIGHTH MEETING | 20.11.2013 | SUB-COMMITTEE OF BOG | MINUTES**

**2. Study visit to Universities at Europe, USA, Canada, & Australia by the faculty**

**(a) Presentations by the faculty members on their foreign visit:**

Dr. K.Mallikharjuna Babu, Principal, BMSCE; Dr. G. N. Sekhar, Vice principal; Dr. M. Ramachandra, Dr. L. Ravikumar, Dr. K. R. Suresh and Dr. M. S. Dharmapraksh have submitted reports on their visits and made brief presentations before the subcommittee [Annexure-II]. While appreciating the presentations made by them, the Chairman, BOG-subcommittee asked the members to continue their efforts to establish and formalise the collaborations with the identified collaborators.

**(b) Transfer of Expenditure of visit to European countries from TEQIP II to COE.**

The sub-committee of BOG noted that the visit of Dr. G. N. Sekhar & Dr. M. Ramachandra to the European Universities was towards identifying the collaborators on the theme of CoE i.e., for R&D on Advanced Materials Research, and granted permission to meet the expenditure incurred towards the same under sub-component 1.2.1 of TEQIP-II.

**(c) Status of visit to Australian Universities:**

The TEQIP Coordinator-I informed the members that the SPFU, GOK is facilitating the visit of delegation from Karnataka to the universities in Australia during January/February 2014 and as per the earlier approval of the committee (i) Dr.M.Rajyalakshmi, Professor-BT, (ii) Dr.H.N.Suma, Professor-ML, (iii) Dr.Samitha Maitra, Professor-CH (iv) Dr.Ravishankar Deekshit, Professor-EEE and (v) Dr. C. Lakshminaryana, Professor-EE & TEQIP II Nodal Officer[EAP] will be joining the said delegation from BMSCE.

**3. Review of progress of procurement:**

The members took a note of the procurement status as mentioned below:

TEQIP II Procurement Status

Description	Value ( Rs)
Total Allotment under Procurement	Rs.560 Lakhs
Procurement completed	Rs.137 Lakhs
Purchase orders released & waiting for delivery	Rs.123 Lakhs
Initiated and In process	Rs.131 Lakhs
Packages to be initiated	Rs.169 Lakhs



**B.M.S.COLLEGE OF ENGINEERING, BANGALORE-560 019**  
**TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME, PHASE-II**

**EIGHTH MEETING | 20.11.2013 | SUB-COMMITTEE OF BOG | MINUTES**

**(A) Shopping:**

Description	Value (Rs)
Total Allotment (under Shopping) (64 Items)	Rs.168 Lakhs
Procurement completed ( 11 Items)	Rs.25 Lakhs
Purchase orders released & waiting for delivery (9 Items)	Rs.28 Lakhs
Initiated and In process (13 Items)	Rs.68 Lakhs
Packages to be initiated ( 31 Items)	Rs.47 Lakhs

**(B) Direct Contracting**

Description	Value ( Rs)
Total Allotment (under Direct Contracting) (22 Items)	Rs.180 Lakhs
Procurement completed ( 7 Items )	Rs.112 Lakhs
Purchase orders released & waiting for delivery ( 4 Items)	Rs.28 Lakhs
Initiated and In process ( 2 Items)	Rs.7 Lakhs
Packages to be initiated ( 9 Items )	Rs.33 Lakhs

**(C) National Competitive Bidding (NCB)**

The members noted that the bids received for the procurement of workstations for the department of ISE and Atomic Absorption Spectrophotometer for the department of Civil Engineering noted below are as per the PMSS norms and approved the issue of purchase order as per the below mentioned details.

Sl No	Item	Contract Value (Rs.)
1	WORKSTATIONS [ Ref: BM/IS/G/1 Desktop Computer Department of Information Science Engineering ]	33,00,000
2	Atomic Absorption Spectrophotometer [Ref: BM/CV/G/1 AAS-Department of Civil Engineering]	32,00,000

The members also noted that the lowest bids received for the following packages satisfying the specifications have an escalated cost and it is due to enhanced value of US\$ and the price was estimated two years back. The Nodal Officer[Procurement] informed the members that escalated price is on line with the current market scenario,



**B.M.S.COLLEGE OF ENGINEERING, BANGALORE-560 019**  
**TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME, PHASE-II**

**EIGHTH MEETING | 20.11.2013 | SUB-COMMITTEE OF BOG | MINUTES**

since two of responsive bids for HPLC are in the same range and that the NPIU suggested the procurement with due approval from BOG.

The Nodal Officer [Procurement] also informed the members that in the case of Vector Signal Generator, the sole bid received has a price escalation of 15%. The members noted the details of the bids received for both the items as mentioned below and accorded approval for accepting the bids and to award the contracts.

Sl. No.	Item	Estimated Cost (Rs.)	Details of Bids received
1	Preparative High Performance Liquid Chromatography System [Ref: BM/BT/G/1 Eq-HPLC Department of Biotechnology]	18 lakhs	Value of Lowest bid is Rs.24,85,000/- . with exemption of Custom duty
2	Vector Signal Generator and Vector Signal Analyzer loaded with Signal Analysis Software. [Ref: BM/EC/G/4 Department of Electronics & Communication Engineering]	38 lakhs	Value of Lowest bid is Rs.40,20,000/- + taxes

The Nodal Officer [Procurement] brought to the notice of the committee that the bids received for procurement of workstations for the department of CSE are on high end and they are not on par with those received for the department of ISE. The committee after a detailed discussion, ordered for cancelling the same and to re-initiate the steps for calling a fresh NCB.

- (D) The Nodal Officer [Procurement] placed a representation of Dr.K.R.Suresh Professor of Civil Engineering before the committee. Dr.K.R.Suresh informed the members that the BOG had accorded approval for the procurement of ‘Chlorophyll meter, GPS Receiver, leaf area meter and Sensors & Data Acquisition system” at an estimated cost of Rs.9,00,000/-. Dr.K.R.Suresh submitted to the committee that he could procure the said equipment through the R & D grant received from VTU and made a brief presentation on the area of further research being carried out by him in collaboration with Sri. Harish Mekali of ECE and requested permission for change in



**B.M.S.COLLEGE OF ENGINEERING, BANGALORE-560 019**  
**TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME, PHASE-II**

**EIGHTH MEETING | 20.11.2013 | SUB-COMMITTEE OF BOG | MINUTES**

the list of items proposed to be procured. The committee accorded approval to his request and the authorised Nodal Officer [Procurement] and Principal to incorporate the suitable changes as per the requirement of PMSS:

S. No.	Item	Estimated Cost (Rs.)	Approved Mode of Procurement
1	Solar Powered Irrigation System with customised software	4,10,000	Shopping
2	Design, Firmware development fabrication and supply of PCBs for Advanced Irrigation Scheduling	6,00,000	Shopping

**(E) Procurement for the Centre of Excellence in Advanced Materials Research:**

Dr. M. Ramachandra, Coordinator for the COE has submitted a report on the status of procurement under the Centre of Excellence in Advanced Materials Research as on 16-11-2013 as noted below:

Sl. No	Item	Estimated Cost (Rs.)	Approved Mode of Procurement	Status
1	Scanning Electron Microscope	1,00,00,000	NCB	Bids are under technical evaluation
2	Abrasive Water Jet Cutting Machine	90,00,000	NCB	
3	XRD Equipment	70,00,000	NCB	
4	Dual Sputtering Equipment	18,00,000	NCB	
5	FTIR Spectroscopy Equipment	9,50,000	Shopping	Invitation for Quotation under process.
6	Magnetic Stirrer, Rec Muffle Furnace, Heating oven & Mantle, Hydraulic Press, Agate Mortar & Pestle, Ice maker, Dies & Plunger and Rotary Vacuum Pump - (Project: polymer composites)	3,25,000	Shopping	
7	Multi-function Printer (2 Nos)	64000	Shopping	Orders placed



**B.M.S.COLLEGE OF ENGINEERING, BANGALORE-560 019**  
**TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME, PHASE-II**

**EIGHTH MEETING | 20.11.2013 | SUB-COMMITTEE OF BOG | MINUTES**

The committee considered the request of Dr.V.Murugendrappa, Principal Investigator and Dr. M. Ramachandra, Coordinator for the COE and permitted them to initiate steps for procuring the following additional equipment and asked them to confine to the available budget. Further the committee authorised the Principal and Coordinator of COE to make suitable changes in the list of equipment accordingly following the process of procurement through PMSS.

S.No.	Item	Estimated Cost (Rs.)	Approved Mode of Procurement
1	UV/VIS Spectro-Photometer	6,75,000	Shopping
2	Conductivity Measurement Setup	8,00,000	Shopping

**4. (a) Teaching Assistantship to PG & MSc (Engg) students**

The committee also noted that in response to the circular dated 18.09.2013 calling applications for the award of teaching assistantship, 79 students of I Semester M.Tech & one student of M.Sc(Engg) admitted during 2013-14 as mentioned below had applied for the award of teaching assistantship.

<b>M.Tech Students admitted during 2013-14[1<sup>st</sup> Year]</b>						
Sl. No.	Branch	Total No. of Applicants	SC	ST	OBC	GM
1.	Chemical Engineering	10	--	--	5	5
2.	Computer Science&Engineering	2	--	--	02	--
3.	Biomedical Signal Processing	23	01	01	11	10
4.	Transportation Engg	17	02	01	06	08
5.	Environmental Engg	14	02	--	09	03
6.	Computer Network Engg	05	--	--	--	05
7.	Digital Communication	01	--	--	01	--
8.	Power Electronics	02	--	--	01	01
9.	Construction Technology	04	01	01	02	--
10.	Machine Design	01	--	--	01	--
<b>Total</b>		<b>79</b>	<b>06</b>	<b>03</b>	<b>38</b>	<b>32</b>
<b>MSc[Engg] Students admitted during 2013-14[1<sup>st</sup> Year]</b>						
1	Civil Engg	01	--	--	--	01



**B.M.S.COLLEGE OF ENGINEERING, BANGALORE-560 019**  
**TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME, PHASE-II**

**EIGHTH MEETING|20.11.2013|SUB-COMMITTEE OF BOG|MINUTES**

The committee noted that thirty students of M.Tech program and one student of MSc(Engg) were sanctioned teaching assistantship during the year 2012-13. Except for Mr. Shoeb Mohammed Balabatti, who is in receipt of internship, all others are being extended with the assistantship for their second year study period. The committee also noted that in addition to these, 18 students pursuing their second year PG program [including (i) one student admitted during 2011-12, discontinued and subsequently became eligible for third semester during 2013-14 and (ii) three students who had not opted for assistantship during 2012-13] have also represented for sanction of teaching assistantship for the year 2013-14.

<b>M.Tech Students admitted during 2012-13</b>						
<b>Sl. No.</b>	<b>Branch</b>	<b>Total No. of Applicants</b>	<b>SC</b>	<b>ST</b>	<b>OBC</b>	<b>GM</b>
1	Transportation Engg	8	1	-	2	5
2	Environmental Engg	8	1	-	5	2
3	Construction Technology	2	-	-	1	1
<b>Total</b>		<b>18</b>	<b>2</b>	<b>-</b>	<b>8</b>	<b>8</b>

The committee after perusing the list of students who are eligible for the receipt of teaching assistantship, accorded approval for the sanction of teaching assistantship to all of them with effect from 1<sup>st</sup> October 2013 to students admitted to I Semester M. Tech during 2013-14 and from the day of commencement of II Year M.Tech classes to the above eighteen students of second Year M. Tech as per the list enclosed at Annexure-III.

The TEQIP Co-ordinator-I placed a representation of Ms. Malvika Priety [GATE qualified] seeking award of teaching assistantship. The committee noted that she was admitted to first Semester M.Tech [Biochemical Engineering] during 2013-14 under Management Quota. The committee asked the TEQIP Coordinator-I to initiate steps to upload her details to AICTE for the award of GATE scholarship, though it is late and authorised the Principal to award teaching assistantship to her, if she fails to get GATE scholarship from AICTE.



**B.M.S.COLLEGE OF ENGINEERING, BANGALORE-560 019**  
**TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME, PHASE-II**

**EIGHTH MEETING | 20.11.2013 | SUB-COMMITTEE OF BOG | MINUTES**

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The TEQIP Coordinator-I placed another representation of Mr. Harisha C.N., student of second year M. Tech. [Computer Science] seeking award of teaching assistantship. Though he was admitted through sponsored quota, he was constrained to submit his resignation and was relieved from his duties during his first year of M.Tech. itself. Considering his plea that he is finding it difficult to meet the day to day expenses and academic progress, the committee accorded approval for award of teaching assistantship to him as an exceptional case, from the date of commencement of his second year classes.

**(b) Research Assistantship to full time Ph.D. scholars.**

The committee noted that four students have submitted their applications for full time PhD program to the VTU and applications would be called from them for the award of Research Assistantship. The committee authorised the Principal, to award the Research Assistantship to the eligible candidates with effect from 1<sup>st</sup> December 2013.

**5. Sponsoring Faculty/staff for workshop/training etc., outside the college & conduction of in-house activities**

(a) The committee took a note of the consolidated statement showing the details of permissions accorded by the Sub-committee of BOG by circulation [for the period from 17.7.13 to 11.11.13] for the proposals of faculty & staff members seeking permission to attend various academic programs & conduction of in-house activities placed at Annexure-IV.

(b) The committee accorded approval for deputing the following faculty members with financial assistance as per norms to attend programs outside the college as below:



**B.M.S.COLLEGE OF ENGINEERING, BANGALORE-560 019**  
**TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME, PHASE-II**

**EIGHTH MEETING | 20.11.2013 | SUB-COMMITTEE OF BOG | MINUTES**

Sl. No.	Name of the Faculty, Designation & Dept	Details of the Program	Place	Workshop/ Conf. Dates	Approx. Expenditure (Rs)
1	Sri.Rakshit Saligram, Teaching Asst., Electronics & Communication	Paper Presentation at 4 <sup>th</sup> International Conference on Electronic System Design (ISED2013)	Nanyang Technological University, Singapore	December 12-13, 2013	59,680/-
2	Dr.K.Ganesh, Asst.Professor, Civil Engineering	Paper presentation at Intl. Conference on Structural Engineering and Construction Management (ICSECM-2013)	Kandy, Srilanka	December 13-15, 2013	77,450/-
3	Dr.B.Kanmani, Professor & HOD, Telecommunication Engg	Paper presentation in IEEE Intl Conference on MOOC, Innovation and Technology in Education (MITE2013)	Poornima Institute of Engineering and Technology, Jaipur	December 20-22, 2013	35,000/-
4	Sri.G.Saravana Kumar, Asst.Professor, Mechanical Engineering	International Conference on ASIATRIB 2014	Agra	February 17-20, 2014	39,400/-
5	Dr.L.Ravikumar Professor, Mechanical Engineering	International Conference on ASIATRIB 2014	Agra	February 17-20, 2014	39,400/-

(c) The committee also accorded approval for the conduction of in-house workshops proposed as below:

Sl. NO.	Name of the Department	Title of the Workshop	Workshop Dates	Approx. Expenditure (Rs)
1.	R&D Centre	On line course Delivery System using "A-VIEW" developed for MHRD	November 23, 2013	28,900/-
2.	Mathematics	Two week Workshop on Computational Fluid Dynamics	January 2014	2,50,000/-



**EIGHTH MEETING | 20.11.2013 | SUB-COMMITTEE OF BOG | MINUTES**

**6. Appointment of office assistant for the Centre of Excellence:**

The committee accorded approval for appointing one office assistant exclusively to handle office works pertaining to the COE.

**7. Action Plan to meet the expenditure target :**

The committee noted that as per the directions of SPFU, an 'action plan to achieve target of expenditure for the period from 1<sup>st</sup> November 2013 to 31<sup>st</sup> December 2014' was prepared and placed on the college website with due approval of the Chairman, BOG-Sub Committee [Annexure-V].

**8. Conduction of Remedial Classes:**

The committee noted that under Equity Assurance Plan, remedial classes are being conducted to weak students. The committee also noted that the department of Mathematics has commenced remedial classes to the I Semester BE students who have scored less than 10 marks out of 25 in CIE. The committee further noted that Dr.M.S.Gayatri is handling the remedial classes during Monday to Friday between 4PM to 6PM and is asked to conduct classes for about 30 hours in this semester. The committee approved the payment of remuneration to Dr.M.S.Gayatri as per the approved TEQIP II norms.

**9. Honorarium to officials/staff working in TEQIP cell:**

The committee after perusing the proposal submitted by the committee consisting of Dr. L. Ravikumar, Dr. S. Gowrishankar and Dr.H.S.Guruprasad informed them to resubmit the proposal with due calculations and expected expenditure till the end of the project.

**10. Conduction of Inter disciplinary Technical Symposium :**

The committee considered the proposal submitted by Dr. P. Meena, Faculty of EEE seeking financial assistance for conduction of two day interdisciplinary technical symposium in the college during January/February 2014, facilitating an exhibition of student projects, products by industries, technical seminars and paper presentations by students, interaction between industry and the faculty of various departments at an estimated cost of Rs.13.5 lakhs. The committee after detailed deliberations permitted an expenditure up to Rs. Five lakhs from the TEQIP-II activities under IIIC and asked Dr. Meena to explore funding from other agencies for the balance needs.



**B.M.S.COLLEGE OF ENGINEERING, BANGALORE-560 019**  
**TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME, PHASE-II**

**EIGHTH MEETING | 20.11.2013 | SUB-COMMITTEE OF BOG | MINUTES**

---

**11. Proposal for financial aid for fabrication and to compete in SAE international formula student competition:**

The TEQIP Coordinator-I has presented the proposal of Dr. K. J. Rathanraj, Professor, IEM seeking financial support to a tune of Rs.14,90,260/-. The said proposal includes registration for the competition, providing an indigenous design, fabricate the vehicle, test for its performance using the skill sets of students of different disciplines and run it in the competition during July 29 to August 3, 2014 at the Hockenheimring, Germany. As per the directions of the committee, Dr. K. J. Rathanraj has made a presentation of the activities proposed. The committee while considering the proposal presented by him, expressed that the proposal is incomplete in terms of identifying the resources and complete budgeting of the activities. The committee asked Dr. Rathanraj, to resubmit his proposal after working out the details as per the suggestions and guidance provided to him by the BOG subcommittee, for its consideration.


**12. Any other item with the permission of the chair:**

The Principal informed the committee that the second visit of TEQIP mentor is scheduled on 28<sup>th</sup> and 29<sup>th</sup> November 2013. Further, he informed the BOG members that an expert committee of NBA is scheduled to visit the college during December 7-9, 2013 and requested them to make it convenient to interact with the expert committee.

**13. Reimbursement of Registration fee for Doctor of Science degree:**

The committee perused the representation of Dr.G.Varaprasad, Associate Professor of Computer Science & Engineering seeking reasons for rejection of reimbursement of registration fee paid by him to the Tumkur University for the award of Doctor of Science [D.Sc]. The committee asked the TEQIP Coordinator-I to inform him that he was already holding a doctoral degree and did not have any prior permission for reimbursement of registration fee paid towards D.Sc. degree.

The meeting concluded with vote of thanks to the Chair.

  
**PRINCIPAL and  
CONVENOR**

  
**CHAIRMAN,  
BOG SUB-COMMITTEE**

B.M.S.COLLEGE OF ENGINEERING, BANGALORE-560 019  
TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME, PHASE-II

**SEVENTH MEETING | 11.09.2013 | SUB-COMMITTEE OF BOG | MINUTES**

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**MEMBERS PRESENT**

1. Prof. D. Thukaram, Chairman
2. Sri. M. Krishnaswamy, Member
3. Dr. K. Mallikharjuna Babu, Principal & Convenor

**NODAL OFFICERS/CO-ORDINATORS PRESENT:**

1. Dr. G. N. Sekhar, TEQIP Co-ordinator I
2. Dr.L.Ravikumar, TEQIP Co-ordinator-II
3. Dr.K. Guruprasad , Nodal Officer - Equity Assurance Plan Implementation
4. Dr. K.R.Suresh, Nodal Officer – Financial Aspects
5. Dr. H. S. Guruprasad, Nodal Officer - Academic Activities
6. Dr.C.Lakshminarayana, Nodal Officer - Equity Assurance Plan Implementation
7. Dr.M.C.Sampath Kumar, Nodal Officer-CW including EM
8. Dr.M.Indiramma, Coordinator-IIIC
9. Dr.S.Gowrishankar, Nodal Officer - Academic Activities
10. Sri.C.T.Puttaswamy, Nodal Officer-CW including EM
11. Dr.M.Ramachandra, Co-ordinator, CoE

The Principal and the convenor of the sub-committee of BOG welcomed the members for the meeting.

**1. Read and record the minutes of the sixth meeting of the BOG sub-committee held on 16<sup>th</sup> July 2013.**

The minutes of the sixth meeting of the BOG sub-committee held on 16.7.2013 were read and recorded [Annexure-1].

**2. Review of project's progress by an Internal Review Committee:**

The committee took a note of communication from the SPFU dated 6<sup>th</sup> June 2013 asking the institution for the conduction of an internal review through a review committee consisting of senior academicians like Institute's Mentor & senior professor of the institution.

The committee opined that the BOG-subcommittee is already reviewing the progress in its periodical meetings and asked the Principal to carry out the review for the month of October 2013. The committee further noted that the visit of the Institute's Mentor is due for the October 2013.

**3. Assessment of Institutions' performance:**

The committee noted that the NPIU has communicated [vide mail dated 25.7.13] all the institutions that a mid-term review has been scheduled during November 1-15, 2013 for assessing the institutions' performance in the project. The committee also noted that the institutions are required to meet all the eight targets of the key performance indicators mentioned in the letter by 31.10.13 and institutions which fail to meet one or more targets will receive no more funds under TEQIP-II. The committee further noted that the best performing ten institutions would be eligible to receive additional funds up to Rs.5 crore. Performance will be assessed by the percentage of disbursement as against total allocation.

In this regard, the Principal informed the committee that the institutions in other states have a better chance to compete, compared to the institutions in Karnataka, as the project started one year late in Karnataka.

The committee observed that out of the first instalment of grants of Rs.200 lakhs, an amount of Rs.191.46 lakhs has been utilised as on 31.8.2013 and also noted that an amount of Rs.100 lakhs has been received as advance from the college funds till the second instalment of grants are released from the SPFU. The committee expressed its satisfaction on the activities that are in progress.

**4. Audit of TEQIP- II accounts as on 31.3.2013 by the Chartered Accountant**

The committee noted that the audit of accounts of TEQIP-II for the year ending 31<sup>st</sup> March 2013 has been conducted by Sri.B.N.Jayaram, chartered accountant nominated by the college and perused the audit report dated 15.7.2013 and certified financial statements and accepted the same [Annexure-2].

The committee also noted that auditors from M/s GRSM & Associates nominated by SPFU have also audited the TEQIP-II accounts for the year ending 31<sup>st</sup> March 2013.

**5. Deputation of faculty members to Conferences/Training/workshop etc**

The committee noted that more number of programs is being conducted under TEQIP-II and the members of faculty & Staff of the college is seeking permission to attend more than 2 programs [within India] in a year.

The committee noted the existing BOG norms that a faculty member can avail financial assistance for participation in a maximum of 2 programs [within India] in a year and one in three years for paper presentation abroad. In view of the targets set forth in the project, the committee resolved to permit the faculty & staff to attend more than 2 programs conducted [within India] during the TEQIP II period.

After detailed deliberations, the committee decided to maintain status-quo in respect of sponsoring faculty i.e., to extend financial assistance to a faculty member to present research paper abroad, once in three years.

**6. Reimbursement of Registration fee for Doctoral of Science degree**

The committee reviewed the requisition submitted by Dr. G.Varaprasad, Associate Professor in the department of Computer Science & Engg, seeking reimbursement of registration fee of Rs.50,000/- paid to the Tumkur University towards D. Sc. degree.

After detailed deliberations, the committee decided not to permit the reimbursement of fee paid by him and also suggested not to encourage such activities in future.

**7. Review of Procurement Status:**

The TEQIP Co-ordinator-I informed the committee that a paper advertisement would be coming on 12.9.2013 publicising FIVE National Competitive Biddings [NCBs] related to procurement. The committee noted the contents of the advertisement and approved the same.

Based on the submission of the procurement manager, the committee permitted for placing repeat orders for items within a span of three months, after ascertaining that no better products are available in the market at a more competitive price.

The committee accorded approval for the proposed changes/modifications in certain packages of procurement [Annexure-3].

While on the subject, the Program coordinator-I submitted to the committee that the R & D director has provided his comments on the proposal submitted by Dr. K. J.Rathanraj, Professor-IM and Sri. C. K. Chandrababu, Associate Professor-ME for the procurement of the Rapid Proto-typing machine and that it is recommended to enhance the estimate and allocation to Rs. 44 lakhs as against the proposed cost of Rs.32 lakhs to pave way for procuring the equipment with latest developments/specifications as per the market survey and the advice of experts from the GTRE.

The committee approved the proposal in principle and asked the Program coordinator-I to initiate the necessary steps.



**8. Meeting the expenses of students for their participation in workshop/conference:**

The committee noted that the representatives of MHRD & NPIU, in a meeting of the Principals & Co-ordinators of TEQIP institutions held on 12.8.13 at SPFU, have permitted for meeting the travel expenses & registration fee of students participating in workshop/conference etc. under TEQIP-II subject to approval of BOG.

The committee resolved to permit extension of financial assistance to students participating in workshop/paper presentation in conferences in India. The committee also resolved to consider the financial assistance to student for presenting his/her paper abroad case by case.

**9. Representation of Sri. G. Darshan, [M.Tech (DC)] to continue teaching assistantship:**

The committee noted that the teaching assistantship of Sri.G.Darshan, student of M.Tech [Digital Communication] was withheld from March 2013 in view of his failure to clear all the subjects of first semester in first attempt. The committee also noted that out of the 4 failed subjects of first semester, the student had cleared 2 subjects in revaluation and has cleared all the subjects of II Semester. Based on the fact that Sri. G. Darshan is eligible to pursue III Semester M.Tech as per the norms of the VTU, without any discontinuity in the course, the committee permitted the payment of the teaching assistantship withheld from March 2013 to Sri.G.Darshan and resolved to continue the award of teaching assistantship for further period of his M.Tech course.

The committee also asked the TEQIP Co-ordinator-I to drop clause No.6 in the Guidelines for the award of teaching assistantship to maintain uniformity with the guidelines of AICTE in continuation of scholarship.

TEQIP Co-ordinator-I submitted to the committee that during the previous academic year, a few aspirants were deprived of teaching assistantship based on the number of teaching assistantships awarded during 2012-13. Further, he submitted that there is enough fund available for awarding teaching assistantship to all the non-GATE & non-sponsored students and sought



permission of the committee to award teaching assistantship to all those who are on the rolls of I & II year M.Tech course during 2013-14.

After deliberations, the committee approved the proposal and ordered for the award of teaching assistantship to all the non-GATE & non-sponsored students who are on the rolls of I & II year M.Tech course during 2013-14.

**10. Honorarium to officials/staff working for the TEQIP – II:**

The committee took a note of the mail from NPIU dated 7.8.13 clarifying that the institution may provide honorarium to the nodal officers/co-ordinators/staff working for TEQIP-II and the institution shall lay down norms in this regard.

After detailed deliberations, the committee asked Dr. L. Ravikumar, Dr. S. Gowrishankar and Dr.H.S.Guruprasad to submit a proposal to the committee in its next meeting.

**11. Award of teaching Assistantship to M. Tech. students receiving Internship:**

The committee perused the letter submitted by Mr. Shoeb M.Balabatti, student of III Semester M. Tech. [EC] being offered internship from INTEL. The committee resolved that the students availing internship cannot avail Teaching Assistantship and the choice would be of the student.

The committee also informed the TEQIP Co-ordinator-I to issue a circular notifying the decision of the committee and seek a status report from all the students of II year M.Tech course.

**12. Sponsoring Faculty for workshop/training etc., outside the college & conduction of in-house activities:**

The committee reviewed the proposals of the faculty members for attending various programs in India and abroad with financial assistance from TEQIP and accorded approval for the same [Annexure-4].

The committee also accorded approval for the conduction of workshop on “Intelligent Machines & Systems” by the department of Mechanical Engineering in the college scheduled during January 2014 at an approximate cost of Rs.3.36 lakhs.



### **13. Study visits by the Faculty to Universities at Canada & Australia**

The committee perused the copy of SPFU mails dtd.8.8.13 & 23.8.13 seeking the deputation of faculty for a study visit/interaction with the faculty members at various universities in Canada and Australia. The committee also took note of the approval by the Principal [Annexure-5] and the proposal sent to SPFU.

The Principal informed the members that as per the approval of the BOG sub-committee in its previous meeting, he will be participating in the Global Engineering Deans Conference [GEDC] at USA during October 19 to November 01, 2013. He also informed the members that during the said visit, he would be visiting Purdue University, Iowa State University, Michigan State University & University at Buffalo, University of Michigan (Ann Arbour) & North Carolina Universities.

Further, the Principal brought to the notice of the committee that the BMSCE is one of the stake holder member of India Platform that promotes interaction among the European Universities and leading Technical Institutions of Karnataka. As a part of this MOU the European Universities visited Indian counter parts in April 2013. In response, the Indian Institutions (a delegation) will be visiting European Universities/Institution during October 2-13, 2013. This event is facilitated & coordinated by the India Platform. From BMSCE, a team of faculty namely Dr.G.N.Sekhar, Vice Principal (representing the Management) & Dr.M.Ramachandra, Professor, Mechanical Engineering Department (subject expert) are being nominated. They are expected to interact with their European counterparts at the universities at Groningen, Ghent, Antwerp and Averio to know the best practices & explore the possibilities for mutual collaborations.

The Principal informed the members that in view of the deputation of Dr.G.N.Sekhar and Dr.M.Ramachandra to India Platform program, it is likely that the duo may be unable to visit the Canadian University as proposed earlier.



After detailed discussions, the committee approved the proposed nominations of faculty members to the countries Belgium, Canada, Australia and USA. The committee authorised the Principal to make necessary changes in the proposed names of nominees subjected to the availability.

**14. Release of fund to Centre of Excellence in Advanced Materials Research**

The committee took a note of the NPIU letter No.NPIU/TEQIP-II/FIN/23/1058 dated 27.8.13 about the release of Rs.333.33 lakhs [Central + State share] as grants for establishing the CoE in Advanced Materials Research for the year 2013-14 and the amount is yet to be received by the college from SPFU/GOK[Annexure-6]. The committee also noted that a separate SB account at Allahabad bank, Hanumanthanagar Branch has been opened as CoE-TEQIP-II with No.50166755417.

**15. Activities of the Centre of Excellence in Advanced Materials Research:**

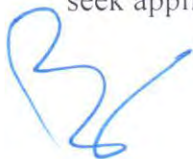
**(a) Appointment of Research Assistants:**

The committee approved the proposal to appoint one research assistant to work with each of the Co-ordinators/principle investigators of the COE and agreed to appoint two or more research assistants for the said purpose if suitable candidates are available. The committee advised for calling applications through the college website.

**(b) Appointment of Senior Research Advisor:**

Dr.M.Ramachandra, Co-ordinator, Centre of Excellence (COE) proposed to invite Expression of Interest from the researchers/retired professionals having enough exposure and experience in the research area of Advanced Materials and appoint them as senior research advisors under COE.

The committee approved the proposal and asked the programme co-ordinator to initiate necessary steps by inserting an advertisement in newspaper and also to seek applications through college website.



**(c) Procurement of equipment for the Centre of Excellence:**

The committee perused the proposals of procurement under COE and approved the procurement of following equipment for establishing the Centre of Excellence in Advanced Materials Research and directed to initiate the process of procurement for the below mentioned items following the norms of the TEQIP-II

SNo	Description of Works/Goods	Estimated Cost (Rs)	Mode of Procurement
1	Scanning Electron Microscope (SEM)	100,00,000	NCB
2	X-Ray Diffraction analyzer (XRD)	70,00,000	NCB
3	Abrasive Water Jet machine (AWJ)	90,00,000	NCB
4	FTIR Spectroscopy equipment	9,50,000	DC
5	Dual Sputtering Equipment	18,00,000	NCB
6	Magnetic Stirrer	6,000	Shopping
7	Rectangular muffle furnace	23,000	Shopping
8	Heating oven Up to 300° C	25,000	Shopping
9	Heating Mantle	3,000	Shopping
10	Hydraulic press, 15 ton capacity	51,000	Shopping
11	Agate Mortar & pestle	1,500	Shopping
12	Ice Maker	1,50,000	Shopping
13	Dies and Plunger	12,000	Shopping
14	Rotary Vacuum pump	9,000	Shopping
15	ASM hand books on materials	2,50,000	Shopping
16	Additional journals in the thematic area of Advanced Materials through science direct & springer link	8,00,000	Shopping/DC

Note: NCB-National Competitive Bidding; DC-Direct Contract

**(d) Collaborations:**

**(i) Collaboration with Magod Laser Machining Pvt Ltd., Bangalore.**

The committee noted that the Coordinators are conducting discussions with M/s Magod Laser Machining Pvt. Ltd., Bangalore for applicable research and product development and to have the collaboration for research in machining of advanced materials using water jet and Laser beam methods.

(ii) **Collaboration with NOPO Nano Technologies India Pvt. Ltd., Bangalore.**

The committee noted the discussions being conducted by the coordinators with M/s NOPO Nano Technologies India Pvt. Ltd., for a collaboration activity for development of Nobel Prize winning material Carbon called grafene for applications in civilian and military areas.

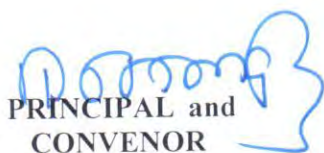
(iii) **Collaboration with NAL, HAL, TATA Advanced Materials:**

The committee noted the coordinators are also conducting discussions with NAL, HAL and TATA Advanced Materials for collaboration for research and development.

The committee noted that the above proposed collaboration activities are for

- a) Research in futuristic polymer composites for impact resistance material which finds its application in Car and Truck Bodies.
- b) Research in special coatings for composite materials used in air craft for withstanding high temperature especially in LCA wing portion that carries Air to Air missiles.

The committee approved the above proposals and requested the coordinators and the Principal shall complete MOUs with the said agencies at an early date considering the expected time lines of the SPFU/NPIU.

  
PRINCIPAL and  
CONVENOR

  
CHAIRMAN,  
BOG SUB-COMMITTEE

## **Annexure-II**

**Report on Study visit to Universities at Europe, USA, Canada, & Australia by the faculty  
Presentations by the faculty members on their foreign visit**

# A Report on Visit to **European Universities**

Under



Submitted by

**Dr.G.N.Sekhar**

**Vice Principal**

**HOD, Department of Mathematics  
BMS College of Engineering**

**Dr.M.Ramachandra**

**Professor**

**Department of Mechanical Engineering  
BMS College of Engineering**

**Dates of Visit: October 1<sup>st</sup> – 12<sup>th</sup>, 2013**

Contents	Page No.
1. Visit to University of Groningen	3-14
2. Visit to VITO (Vision on Technology)	15-19
3. Visit to University of Antwerp	20-27
4. Visit to University of Ghent	28-43
5. Visit to University of Aveiro	44-52
6. Research at Groningen University (European Universities)	53

# **Groningen University**

**2/10/2013 and 3/10/2013**



## Tuesday, 1/10/2013 – Amsterdam to Groningen

- Reached at Schiphol Airport, Amsterdam at 4PM
- Picked-up by a student of the UMCG (University Medical College Groningen)
- Travel by train to Groningen- Reached Groningen at 6.30PM

## Wednesday, 2/10/2013 - Groningen

### 10:30 – 11:45: Tour of the UMCG (University Medical College Groningen)

- *Venue : Hanzeplein 1*
- Guided by **Mr. Freek De Bos**
- We were introduced to hospital facilities at UMCG. Shown infrastructure available, Emergency facilities, Medical facilities etc. Explained how efforts are being made to make patients feel as if they are at home not in a hospital. The hospital looks like 5 star hotel. Visited basement of the hospital where all the logistics are transported. Material transfer from wards-to-labs, labs-to-wards, stores-to-wards, wards-to-stores etc. takes place through hoses by vacuum transfer technology. Everything is computer controlled. All vehicular, material and personnel movement takes place in the basement to minimise disturbance to patients.



## Visit to the Zernike Campus (02:30-17:00)

Venue: Faculty Room, Bernoulliborg, Nijenborgh 1

### General Introduction to the University (Dr. Fiorella Brustolin)

1350 Staff > 90 Professors 580 PhDs (65% foreign)
4,000 Students (800 a year) av. 20% foreign
EUR 120 million Annual budget
1500 Publications a year
12 Research institutes
14 Bachelor's degree programs
31 Master's degree programs

#### Research areas

- › Chemistry, Physics, Mathematics, Astronomy
- › Biology, Pharmacy, Life sciences
- › Computing Science
- › Environmental science
- › Industrial Engineering, Chemical Engineering,
- › Applied Physics and Mathematics
- Offer both Science and engineering degrees (BSc and MSc)
- **Research and education are intertwined**

- The university has Distance learning, E-learning /web classes
- Honours programme
- State of the art labs
- World-class researchers as teachers

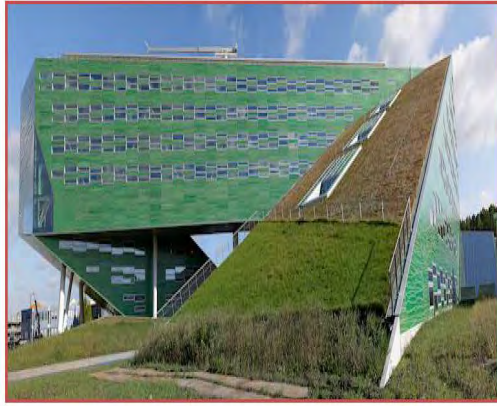
Research Institutes in the University:

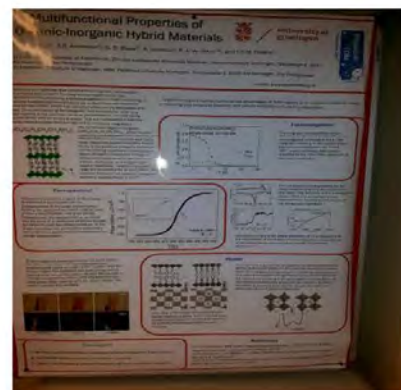
- › ALICE - Artificial Intelligence and Cognitive Engineering
- › CBN - Center for Behaviour and Neurosciences
- › CEES - Centre for Ecological and Evolutionary Studies
- › CTN - Centre for Theoretical Physics
- › ESRIG - Energy and Sustainability Research Institute Groningen
- › GBB - Groningen Biomolecular Sciences and Biotechnology Institute
- › GRIP - Groningen Research Institute of Pharmacy
- › ITM – Research institute of Technology and Management
- › Johann Bernoulli Institute for Mathematics and Computer Science
- › Kapteyn Astronomical Institute
- › Stratingh Institute for Chemistry
- › **Zernike Institute for Advanced Materials**

**The above research institutes offer BSc and MSc programs.**

### **Ranking**

In the Top 4% of the world's best research in Chemistry and Advanced Materials Science





**Presentation by Prof. Bart De Kooi, Prof. of Applied Physics,  
Zernike Institute of Advanced Materials (ZIAM);**

Presentation: “**Nano science of novel materials: physics, chemistry, and biology meet**”

Spoke about **Advanced Materials** - Functional materials for future technologies

- › Bio membranes, molecular motors...
- › Molecular electronics: Polymers, Carbon nanotubes, graphene
- › Mott transistor
- › Phase-change materials for rewritable data storage
- › Nanoparticles for hydrogen storage
- › Casimir forces
- › Surface nano-engineering of micro cantilevers.

Different research groups are working on above research areas

Briefly discussed with **Prof. Bart De Kooi** about our research plans. He gave his contact details for future contact for any help in the field of Nano materials. Now his research area is mainly Nano material production for hydrogen storage (Automobile application).

He has agreed to give contact details of another research group working on CNT and Graphene. Obtained a copy of his presentation

**Contact Details:** **prof. dr. ir. B.J. (Bart J) Kooi**  
**Job title:** Adjunct professor  
**Expertise:** Materials Science, Electron Microscopy  
**Email:** [b.j.kooi@rug.nl](mailto:b.j.kooi@rug.nl)  
**Phone:** +31 50 363 4896, +31 50 363 4879 (Fax)

**We should pursue this contact for our future plans in advanced materials research.**

## **Presentation by Prof. Jos Roerdink, Prof. Of Computer Science and Director of the Johan Bernouilli Institute**

Presentation: **"Functional Neuro Imaging"**

Spoke about **fMRI, Functional neuroimaging, Genomics visualization, Innovative interface software for visualization, Non photo realistic rendering, biomedical visualization and bioinformatics.**

**Contact Details:**   **prof. dr. J.B.T.M. (Jos) Roerdink**  
                                  **Job title: Professor**  
                                  **Expertise: Computing Science, Visualisation, Neuroimaging**  
                                  **Email: [j.b.t.m.roerdink@rug.nl](mailto:j.b.t.m.roerdink@rug.nl)**  
                                  **Phone: +31 50 363 3931 (Fax) +31 50 363 3800**

He had done lot of work in **fMRI, Functional neuroimaging.**

**This contact may be very useful for Dr.H.N.Suma, HOD Medical Electronics.**

## **Dinner Meeting at Kohinoor (Indian restaurant)**

Participants:

**Indian Delegation,**

**Dr. Bert Verveld** (Secretary General); A.O

**Dr. Prashant K. Sharma**, Professor, Kalf Institute(UMCG)

**Nele De Gresem**, India Platform

Discussion was focused on research culture in Groningen University, courses offered at Groningen University, collaborative research, research funding pattern, foreign students study at Groningen University etc.

The Groningen University does not have separate teaching institutes. Instead the Groningen University has **Research institutes** that are funded by the government of Netherlands for research and teaching. The academic culture is **50% Research and 50% teaching**. The research institutes offer courses that are specific to the area of research. **The main focus is on Master's program and PhD.**

All research projects are done under collaboration with industries. The research institutes cater to the needs of the industry by developing products for them. The research funding is mainly done by industries and partly done by government. The work is mainly concentrated on **applicable research**.

Masters and PhD programmes are offered for foreign students and are very expensive. Part of the funds generated through foreign students is used for education to home land students.

## **Thursday, 3/10/2013 – Groningen University**

**9:00 – 12:00: Visit to the Kollf Institute (biomedical engineering and material sciences)**

- **Prof. Henny van der Mei**, Presentation
  - presentation was about
    - Kollf Institute which mainly a Bio-Medical research Institute.
    - Facilities available for Bio-medical research
- **Prof. Henny van der Mei**, presentation (“Man, materials, microbes and infections”)
- **Copy of the PPT recieved and will be made available to HOD’s of BT/M.ElIns/CH**
- **Prof. Henk J. Busscher**, introduction about the biomedical engineering lab
- **Dr. Prashant K. Sharma**, tour around the biomedical engineering lab

**14:00 – 17:30: Tour of the laboratories (Dr. Gopi Krishnan)**

## Zernike Institute

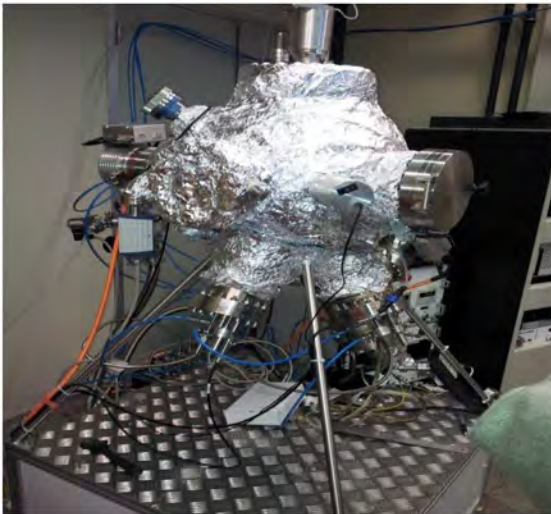
**Dr. Gopikrishnan** is Post-doctoral research scientist at Zernike institute of advanced materials. He worked extensively on Nano Materials production and characterization. He is doing his post-doctoral research under **Prof. Bart De Kooi**. He showed lot of interest in what we have planned for our COE. **Dr. Gopikrishnan is planning to relocate to India and an association/ Collaboration with him under COE will be useful.**

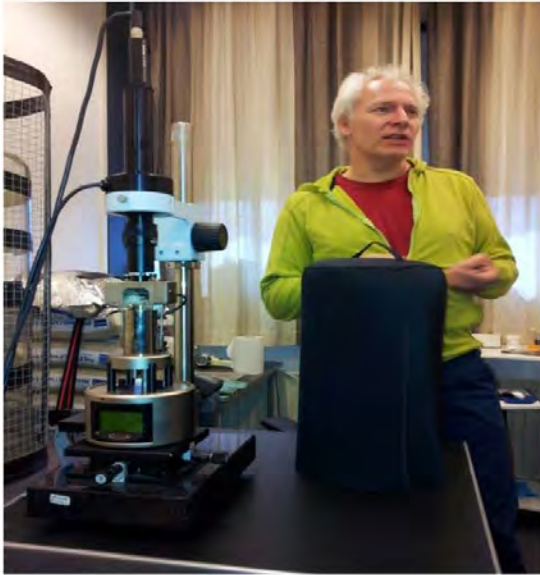
Email: [gopi.k.krish@gmail.com](mailto:gopi.k.krish@gmail.com)

**At Zarnike Research Institute**



Nano Materials Research Lab facilities





**VITO (Vision on Technology)**

**University of Antwerp**

**04/10/2013 – 07/10/2013**



## **Friday, 4/10/2013 – Groningen to VITO**

**7:30 – 12:00: Bus drive Groningen – Mol (Antwerp)**

**12:00 – 16:45: Visit to VITO (Vision on Technology)**

**12:05: Welcome by Prof. Ludo Diels**

Presentation was about Climate change, food security, scarcity/availability of raw materials, a sustainable energy supply, an ageing population of Europe as main agenda of research at VITO which focuses on the major societal challenges of today and tomorrow.

Sustainable chemistry, energy, health, materials and land use are the five themes VITO will be focusing on in the next decade of research.

**12:10: Dr. Peter Verboven, presentation on energy research at VITO**

**“Energy Technology: Smart Systems for Intelligent Energy Networks”**

Presentation focused on

- Decentralized and sustainable energy production.
- Linking such types of power generation to existing energy networks.
- VITO's research programme "Smart Systems for Intelligent Energy Networks" responds to the needs created within the concept of **Smart Grids**.
- Energy demand flexibility and production through distributed energy sources (wind turbines, photovoltaic installations, cogeneration, fuel cells) in combination with thermal (underground energy storage, phase change materials)
- Electric storage systems (batteries, plug-in hybrid vehicles...)

**13:30: Dr. Sven Vercauteren, presentation on materials research at VITO**

**“Sustainable Materials Management”**

Presentation focused on

- Sustainable materials management by shifting the societal behavior towards meeting its material needs without destabilizing the natural system.
- How to preserve the availability of natural resources and to reduce the environmental impact of material life cycles, while meeting the needs of a strongly growing global population
- Smart product design and efficient production allows companies to minimize their material usage. Consumers, companies and public organization can steer the markets by choosing environmentally friendly products and by re-using materials.
- At the production level, how innovative material technologies offer major opportunities for resource effective production and products.
- How Techniques like additive manufacturing can bring important benefits related to raw materials usage.
- How Surface engineering allows to introduce functionality to a material with minimal material use.

**13:50: Dr. Yamini Satyawali, presentation on chemical research at VITO**

Her presentation mainly focused on

- Use of Membranes for the production of processed water and for water treatment systems.
- Solvent separations and the development of solvent resistant membranes.
- Development of amongst others a hydrophobic ceramic membrane.
- Development of Pervaporation membranes which allow the separation of solvents from water and vice versa leading to the purification of process.
- VITO's experience in sol-gel technology, template assisted deposition of top layers based on mesoporous films and nanozeolite particles. These technologies allow making ceramic materials with extremely specific top

layers. It will lead to membranes with specific characteristics, specific and sharp cut off values, defined affinities.

**14:10: Dr. Walter Debruyn, presentation on the remote sensing research and the relationship to water and agriculture**

He presented how VITO's remote sensing unit develops innovative customer oriented solutions as well as scientific support to enable society to collect, access and use reliable geo-information, based on remote sensing, in order to support sustainable land management.

Their objective is

- Global Land monitoring
- Local Land monitoring
- Develop innovative Geo-spatial Solutions
- New Technologies

**15:00: Visits to the Energy, Materials and Chemicals business units**



### **Contact Details at VITO**

- **Mr. Peter Verboven**  
Research Scientist Renewable Energy and Smart Grids  
Landline: + 32 14 335911  
Mobile: + 32 486 415006  
Peter.Verboven@vito.be
- **Mr. Sven Vercauteren**  
Commercial Coordinator - Sustainable Materials Management  
Landline: +32 14 335716  
Mobile: +32 475 531271  
Sven.vercauteren@vito.be
- **Mr. Frans Snijkers**  
Teamleader - Sustainable Materials management  
Ceramic Materials and Powder Processing  
Landline: +32 14 335665  
Frans.snijkers@vito.be
- **Mr. Walter Debruyn**  
Research Coordinator Remote Sensing  
Landline: + 32 14 336846  
Mobile: + 32 491 565506  
Walter.Debruyn@vito.be
- **Mrs. Yamini Satyawali**  
Research Scientist Membrane Technology  
Yamini.Satyawali@vito.be

**These Contacts shall be useful for collaboration for CH/Environmental Engg**

**Saturday, 5/10/2013 – Presentation on Socio-Economic-Historical Culture of Belgium/Antwerp through visits to the Musium/Art gallery**

**Sunday, 6/10/2013 – Visit to Brugge- Presentation on Historical and periodical changes in the Culture of Brugge.**

## Monday, 7/10/2013 – University of Antwerp

– Venue address: Paardenmarkt 92

**9:30: Welcome by Prof. Walter Sevenhans, Dean FTI (Faculty of Applied Sciences)**

**9:35: Presentations about research culture within electronics/ICT**

### **“CoSy Lab” Prof. Luc Pieters**

It is a team of researchers working in the area of applied engineering for

- Embedded programming
- Sensor processing
- Distributed systems



Embedded programming  
Embedded software

CoSys  
LAB



Universiteit Antwerpen

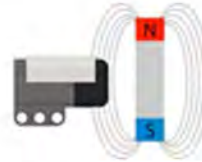
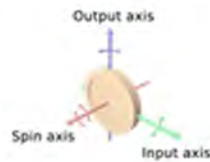
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## Sensor Processing



- 1. Localization en context awareness
- 2. Computer vision / image processing

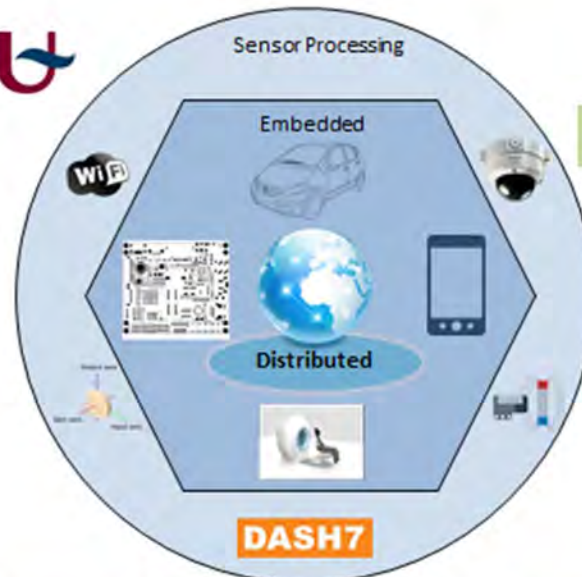


**DASH7**



Universiteit Antwerpen

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**Distributed**

Universiteit Antwerpen

11

Presentation by Prof. Raf Catthoor, Car Ecology

It's a presentation about Master program in Car Ecology



# Master in Car Ecology

*New Technological and Ecological Standards  
in Automotive Engineering*

- **Module 1:** Developing engine technologies (6C)
- **Module 2:** Energy efficient design of powertrain and body (6C)
- **Module 3:** Alternative drive systems (6C): HEV and EV, batteries, fuel cells, ultracaps.
- **Module 4:** Green fuels (6C)
- **Module 5:** Trends in vehicle electronics (6C): power electronics and drives, bus systems, ECUs
- **Module 6:** Communication and management for engineers (10C)

**11:00: Bus to Campus Hoboken**

- Venue address: Salesianenlaan 30
- Reception by **Prof. Gunther Steenackers**

**11:45: Prof. Gunther Steenackers**, presentation on research culture within Electro Mechanical engineering

Work in progress (Automotive Field)

- Vibration measurement
- PLC automation
- Virtual modeling
- Formula1 car modeling and analysis
- Boat driven by solar energy
- Study of Bio-Mechanical behavior of Hip joint
- Modeling of Wind mill blades

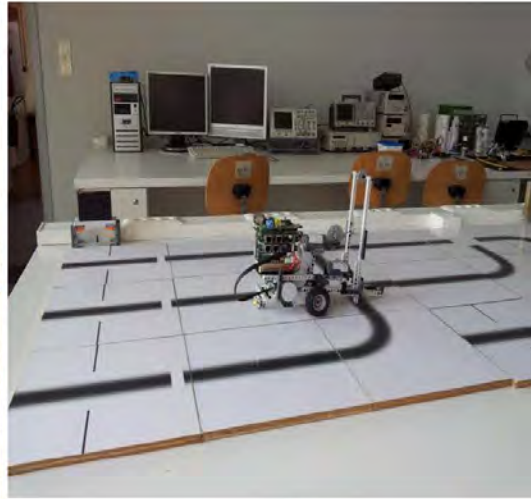
**13:30: Prof. Tom Breugelmans**, presentation on research culture within (bio) chemical engineering

Presentation was on advanced reactor technology

Design of New reactors

- Electro chemical reactors
- Micro reactors
- Plasma reactors

**14:15: Visits to the labs of Electromechanical Engineering (with Prof. Gregory Van Barel)**



**16:00: Tour around the labs of Biochemistry (with Prof. Tom Breugelmans)**



**Contact Details:**

**Faculty of Applied Engineering, University of Antwerp**

- Mr. Luc Pieters  
Electronics/ICT  
Campus Paardenmarkt  
Landline : +32 3 2137947  
luc.pieters2@uantwerpen.be
- Mr. Raf Catthoor  
CarEcology  
Campus Paardenmarkt  
Landline : +32 3 2137957  
Mobile: +32 499 397629  
raf.catthoor@uantwerpen.be
- Mr. Gunther Steenackers / Mr. Luc Mertens  
Electromechanical engineering  
Campus Hoboken  
Landline: +32 3 6131971 (Gunther)

gunther.steenackers@uantwerpen.be

Landline: +32 3 613 17 62

Luc.Mertens@uantwerpen.be

- Mr. Tom Breugelmans  
(Bio) chemical engineering  
Campus Hoboken  
tom.breugelmans@uantwerpen.be
- Mr. Gregory Van Barel  
Electromechanical engineering  
Campus Hoboken  
Landline: +32 3 613 17 73  
Gregory.VanBarel@uantwerpen.be.

**These Contacts shall be useful for collaboration activities of EC/CS/ME/CH**

**University of Ghent**

**08/10/2013 – 09/10/2013**

## Tuesday, 8/10/2013 - Ghent

**09:00 – 12:30: Visit to the Faculty of Engineering & Architecture**

**Venue address: Jozef Plateaustraat 22, Magnel Room**

Official **welcome** by **Prof. Rik Van De Walle**, Dean, University of Ghent

Followed by Presentation “**Faculty and its policy towards internationalisation**” by **Prof. Johan Lagae**, Chairperson Faculty Committee for Internationalisation.

Contact Details: **Prof. Johan Lagae**

Chairperson Faculty Committee for Internationalisation

Ghent University, Belgium

Email: [johan.lagae@UGent.be](mailto:johan.lagae@UGent.be)

He spoke in detail about courses offered for **Dutch nationals, European nationals, Bilateral Agreements outside Europe.**

### **Study programmes for Dutch Nationals (Only in Dutch)**

- Bachelor programmes (leading to a bachelor degree)
- Master programmes (leading to a master degree)
- Advanced master programmes (leading to a master degree)
- Postgraduate studies (leading to a certificate)
- Permanent training (continuing education) (leading to a certificate)

All **bachelor programmes** at Ghent comprise 180 credits, corresponding to three years of study. Successful students are awarded the academic degree of ‘bachelor’.

**Master programmes** are open to holders of an appropriate bachelor degree. Master programmes involve at least 1 year of study (60 credits); some master degrees involve 2, 3, or 4 years of study (60 credits each). Successful students are awarded a ‘master degree’.

**Advanced master programmes** comprise 60 ECTS credits and provide high standard specialization opportunities for holders of a particular master degree.

## **International Courses (Masters programmes) for European nationals (only In English)**

At Ghent University there are different types of international programmes, some are awarded by a degree and others are awarded by a certificate.

- Master programmes, (leading to a master degree)
- Erasmus Mundus master programmes (leading to a master degree)
- Advanced master programmes (leading to a master degree)
- Postgraduate studies (leading to a certificate)
- Permanent training (continuing education) (leading to a certificate)

**Master programmes** comprise 60 credits (1 year), 120 credits (2 years), 180 credits (3 years) or 240 credits (4 years).

**Erasmus Mundus Master Courses** are high-quality course programmes at Master level, which were selected for funding by the European Commission.

- Each course programme is offered by a consortium of universities which are situated in different European countries.
- As a student of an Erasmus Mundus Master Course he/she will study in at least two of these countries
- After successfully completing the programme, he/she will be awarded a recognized double, multiple or joint diploma.

### **Erasmus Mundus Master Courses**

- International Master of Science in Rural Development
- European Master in Law and Economics
- European Master in Nuclear Fusion Science and Engineering Physics
- Erasmus Mundus Master of Science in Marine Biodiversity and Conservation
- European Master of Science in Nematology
- International Master of Science in Fire Safety Engineering
- Common European Master Course in Biomedical Engineering
- International Master of Science in Environmental Technology and Engineering.

## **Educational Cooperation (outside of Europe)**

- Apart from international cooperation coordinated by specific externally funded programmes, Ghent University also cooperates on a bilateral basis with more than 150 higher education institutions outside of Europe.
- Ghent University considers a bilateral agreement as an international cooperation agreement between two universities.
- The main purpose is to create opportunities for student and staff mobility outside Europe.
- Funds are provided to new initiatives to facilitate mobility of staff & students.

### **Types of Agreements**

**Memorandum of Understanding:** an institutional, general and formal agreement, concluded for a maximum period of 3 years

#### **Bilateral agreement:**

Generally occurs in 2 phases:

**First phase: 'Letter of Intent'**, an agreement for a maximum duration of 1 year, concluded in order to agree on the organization of mobility.

**Second Phase: 'Cooperation Agreement'**, where the concrete and detailed engagements on cooperation and mobility will be mentioned.

#### **Activities and financial support**

Possible activities within the framework of a bilateral agreement are

- development of mutually beneficial academic programmes and courses
- exchange of academic staff and research assistants for main purpose of teaching
- exchange of students for study and research
- reciprocal assistance for visiting academic staff and students
- exchange of documentation, pedagogical information and research materials

#### **11.00: Presentations about research and education:**

- **Prof. Joris Walraevens**, Department of Telecommunications and Information Processing
- **“Master of Fire Safety Engineering”**, by **Elise Meerburg**, coordinator of the EM program in FSE
- **Prof. Dirk Stroobandt**, Department of Electronics and Information Systems
- **Prof. Lieven Vandevelde**, Department of Electrical Energy, Systems and Automation

#### **14.00: Presentations about research and education:**

- **“Master in Chemical Engineering”**, by **Prof. Dagmar D’Hooge**, Department of Chemical Engineering and Technical Chemistry
- **“Master in Industrial Management and Operational Research”**, by **Prof. Stijn Devuyst**, Department of Industrial Management
- **“Master in Biochemical Engineering and Nuclear Fusion**, by **Prof. Johan Lagae**, replacing **Prof. Patrick Segers & Prof. Guido Van Oost**
- **“Master in Civil Engineering”**, by **Prof. Luc Taerwe**, Department of Civil Engineering (*tbc*)

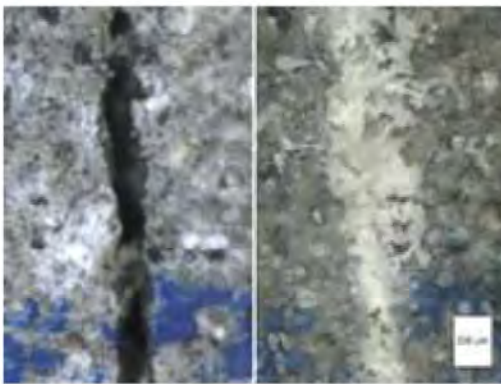
#### **15.30: Visits to the Magnel Laboratory (Civil Engineering)**

At the Magnel laboratory of **Concrete Research**, more than 25 researchers are studying a wide variety of different aspects related to concrete and cementitious materials. Most of these research projects are part of a PhD. The subjects are related to one or more of the following themes:

- Structural behaviour of concrete
- Concrete Technology
- Concrete and environment



Full-size test set-up on membrane action in reinforced concrete slabs.



Autogenous healing (Self crack healing)



Multiple cracking



3-point bending test:



Many of the research themes at **Magnel Laboratory (Civil Engineering)** at **Ghent University** match with those of BMSCE.

The department of civil engineering shall explore possible collaboration with Ghent University on these research themes.





### **20:00: Dinner Meeting at Het Pand (University Guest House)**

**Participants:** Indian delegation, Rik Van de Walle, Johan Lagae, Dagmar D'Hooge, Joris Walraevens, Ann Vanoutryve, Hendrik Vanlandeghem

- Discussion was largely on student and faculty exchange between Ghent and Engineering colleges.
- Explored the possibility of joint masters programmes
  - 1<sup>st</sup> year in India and 2<sup>nd</sup> year onwards at Ghent
  - To adopt Ghent University curriculum for masters programmes
  - Faculty training for above programme through faculty exchange
- Dean of Ghent suggested to have consortium of BMSCE, MSRIT, BNMIT and JIT to float joint masters programmes
- Indian delegation extended an invitation to Ghent University delegation to visit our colleges in Feb, 2014 through India Platform for further discussion.
- For PhD and Research collaborations, DEAN of GU suggested to develop professor to professor contact first and take it forward for research collaborations leading to PhDs.
- Meeting ended with vote of thanks from Dr.Acharya, CEO, MSRIT

## **Wednesday, 9/10/2013 - Ghent**

### **10:00 – 12:00: Visit to the Faculty of Bioscience Engineering**

Venue address: Coupure Links 635

- **10:00:** Presentation on the faculty, by **Mrs. Hilde Vandecasteele**, International Relations Officer

**Contact Details:** Mrs. Hilde Vandecasteele

International Relations Officer

E-mail: [Hilde.Vandecasteele@UGent.be](mailto:Hilde.Vandecasteele@UGent.be)

- **11:00:** Presentation of the Laboratory of Microbial Ecology and Technology (LABMET), by **Prof. Nico Boon & Prof. Korneel Rabaey**
- **Courses offered by Faculty of Bioscience Engineering**
  - Master of Science in Aquaculture
  - Master of Science in Environmental Sanitation
  - Master of Science in Food Technology
  - Master of Science in Nutrition and Rural Development
  - Master of Science in Physical Land Resources
  - International Master of Science in Environmental Technology and Engineering
  - International Master of Science in Rural Development

**11:30:** Presentations of BIOMATH (model based bioprocess analysis and optimisation), by **Mr. Stijn Van Hoey**

# FACULTY OF BIOSCIENCE ENGINEERING

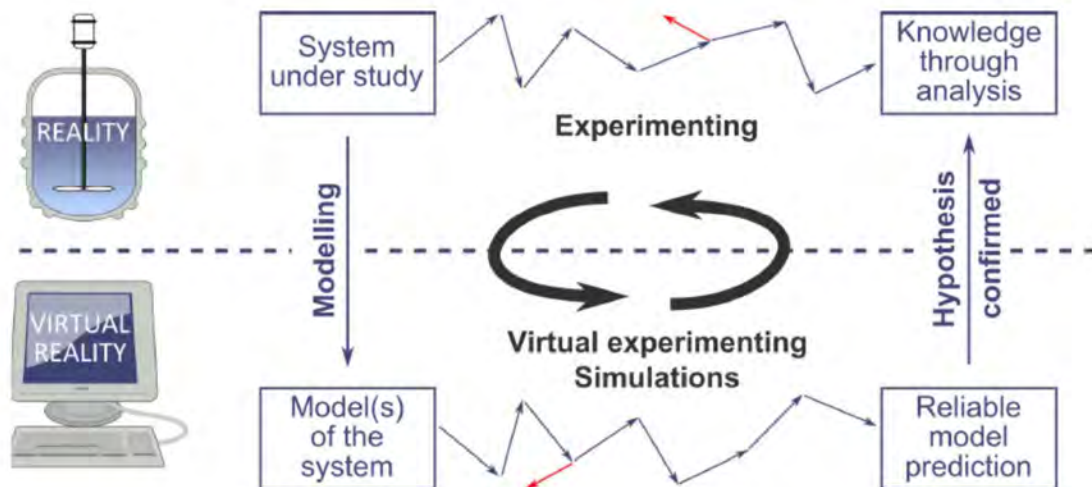
Department of Mathematical Modelling,

Statistics and Bioinformatics



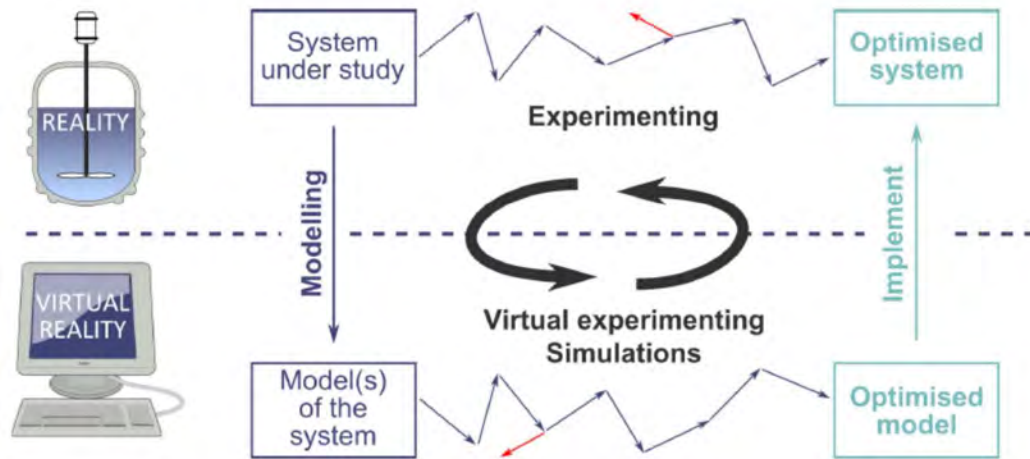
## BIOMATH MISSION - GENERAL

“Model-based bioprocess **analysis** and optimization”

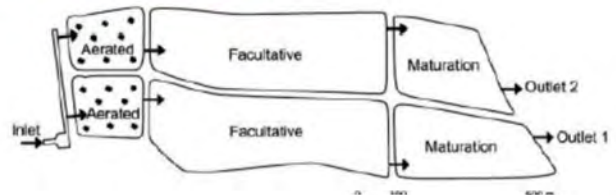


# BIOMATH MISSION - GENERAL

“Model-based bioprocess **analysis** and **optimization**”

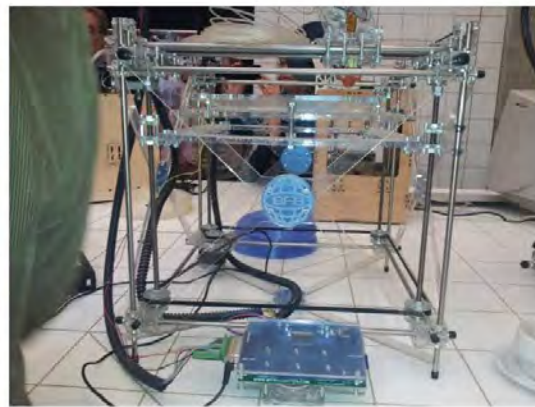


## Waste Stabilisation Pond – Ucubamba



**14:00:** Meeting with the rector of Ghent University, **Prof. Dr. Anne De Paepe** (at the Rectorate)

**15:00:** Visit to the HoGent Department of Mechatronics (with **Dr. Peter Van Ransbeek**, HOD)







# Aveiro University

**10/10/2013 – 11/10/2013**

## **Thursday, 10/10/2013 – Ghent to Porto to Aveiro**

- **05:00:** Bus to Charleroi Airport
- **08:00:** Departure from Brussels (Ryanair – FR6942)
- **09:25:** Arrival at Porto (Portugal)
- Bus to Aveiro
- **13:00:** Lunch at Restaurant, University of Aveiro

- **14:00: Welcome by Prof. José Fernando Mendes**

He gave general introduction about Aveiro University and taken us on a tour of University.

Aveiro University is government established research and teaching based university with different research departments offering Bachelor, Masters and PhD degrees. The university does mainly collaborative research with industries funded by both industries and government. All research work is applicable research.

**Some of the research work which is of interest to COE in Advanced materials research at BMSCE is presented below**

- **CICECO (Centre for Research in Ceramics and Composite Materials)**

Research work at Centre for Research in Ceramics and Composite Materials is as follows

- Production and application of Nano and Micro structured materials for information and communication technology
- Composite materials for energy and industrial applications

- Production of bio materials
- Production of Multi crystal diamond, Nano crystal diamond and CNT by HFCVD for coating on tools, seals etc
- Electro ceramics for telecommunication applications



Contact details at this research center:

1. Dr. Joaquim Manuel Vieira  
Email: [jvieira@cv.ua.pt](mailto:jvieira@cv.ua.pt)  
Phone: +351 234 370 300
2. Dr. Paula Maria Lousada Silveirinha Vilarinho  
Email: [paula.vilarinho@ua.pt](mailto:paula.vilarinho@ua.pt)  
Phone: +351 234 370 354

- **TEMA (Centre for Mechanical Technology and Automation)**

Presentation by Dr. Manoj Kumar Singh

**“Production and Engineering of Graphene for Applications in Nanoelectronics”**

**Current objectives of his work**

Wafer-Scale Synthesis of Graphene and other 2d materials (MoS<sub>2</sub>, h-BN, WS<sub>2</sub>, etc.,)

Tuning the Electronic properties of Graphene by Heteroatom, and Molecular doping

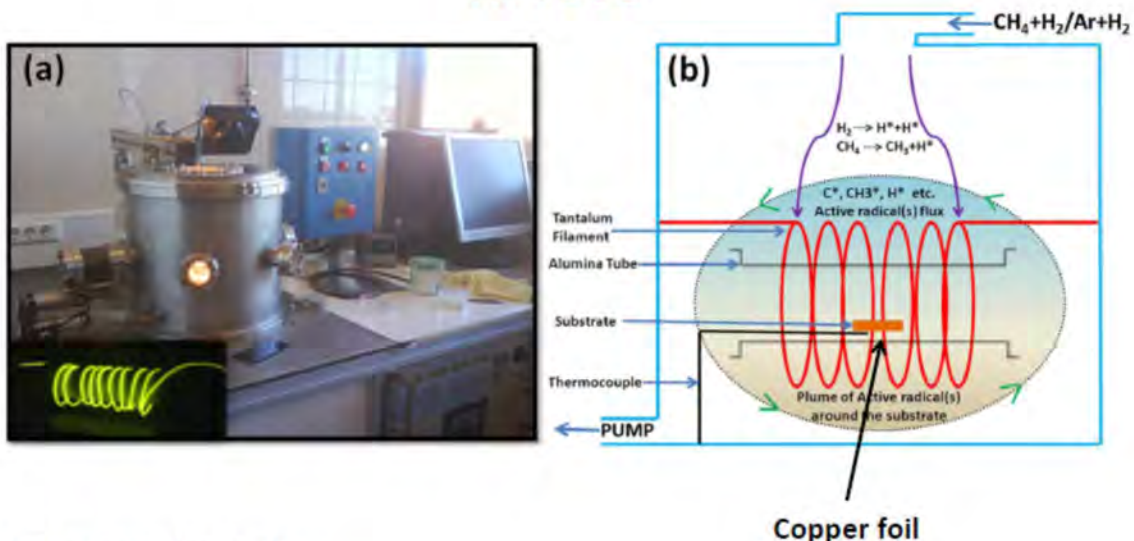
Single and Polycrystalline Metal substrates (Cu, Ni, Pt, Ir..etc.,)

Also on semiconducting and insulating substrates (SiO<sub>2</sub>/Si), glass, Diamond

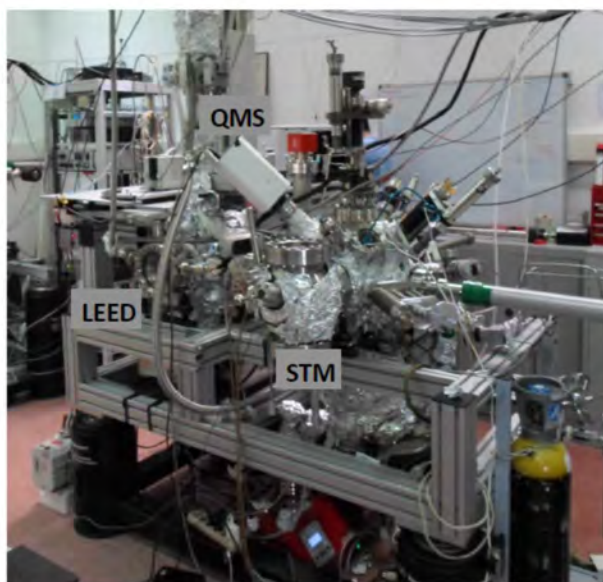
**Methods:**

Chemical Vapor Deposition (CVD) technique (i) Normal, (ii) High vacuum conditions

**HFTCVD**



- To clean samples *in situ*
- Graphene growth



His previous work:  
 Synthesis of large-area **graphene sheet** by Hot Filament Thermal Chemical  
 Vapor Deposition

## List of Publications Related to Graphene Research universidade de aveiro

1. Ranjit Hawaldar, P. Merino, M. R. Correia, Igor Bdikin, Jose Gracio, J. Méndez, J. A. Martín-Gago & Manoj Kumar Singh, Large-area high-throughput synthesis of monolayer graphene sheet by Hot Filament Thermal Chemical Vapor Deposition *Scientific Reports* 2, 682; DOI:10.1038/srep00682 (2012) (NATURE Publishing Group)  
<http://www.nature.com/srep/2012/120921/srep00682/full/srep00682.html>
2. Manoj K. Singh, E. Titus, G. Gonçalves, P. A. A. P. Marques, I. Bdikin, and Jose Gracio  
Atomic-scale Observation of Rotational Misorientation in Suspended Few Layer Graphene Sheets  
*Nanoscale* 2010, 2, 700–708; **Cover Article, also cited in top 10 research article in Nanoscale 2010**
3. Sunil K. Singh, Manoj K. Singh, Paresh P. Kulkarni, Vijay K. Sonkar, José J. A. Grácio, and Debabrata Dash  
Amine-Modified Graphene: Thrombo-Protective Safer Alternative to Graphene Oxide for Biomedical Applications  
*ACS Nano*, 2012, 6 (3), pp 2731–2740 DOI:10.1021/nn300172t
4. S. Singh, Manoj K. Singh, M. K. Nayak, S. Kumari, S. Shrivastava, Jose J. A. Gracio, and D. Dash  
Thrombus Inducing Property of Atomically Thin Graphene Oxide Sheets  
*ACS Nano* 5 (6), pp 4987–4996 (2011)
5. S. Singh, Manoj K. Singh, Jose Gracio, D. Dash  
Size distribution analysis and physical/fluorescence characterization of graphene oxide sheets by flow cytometry  
*CARBON* 49, 684-692 (2011)
6. Manoj K. Singh, Elby Titus, Paula A.A.P. Marques, G.Gonçalves, Jose Gracio  
Direct nucleation of silver nanoparticles on graphene sheet  
*J Nanosci Nanotechnol*. 2012 Aug;12(8):6731-6.
7. Manoj Kumar Singh, Igor Bdikin, Jose Gracio  
Charge Injection and local charge distribution in freely-suspended Graphene Sheet measured by Scanning Kelvin probe Microscopy (under process) 2013

He has sent email **expressing interest** in collaborative work with Centre of excellence in advanced materials research at BMSCE. Following is the content of the Email

Contact details: Dr.Manoj Kumar Singh,Ph.D  
Group leader & Principal Investigator  
Graphene Research lab  
Centre for Mechanical Technology and Automation (TEMA)  
Department of Mechanical Eng.  
University of Aveiro, Aveiro,  
Portugal  
Telephone: +351 234 370 830/Extension:23879  
Fax:+351 234370953  
Email: [mksingh@ua.pt](mailto:mksingh@ua.pt) , [75.manojsingh@gmail.com](mailto:75.manojsingh@gmail.com)



Ramachandra Madhavarao <dr.mramachandra@gmail.com>

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## regarding collaboration work

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**Manoj Singh** <mksingh@ua.pt>

Tue, Oct 15, 2013 at 9:49 PM

To: "dr.mramachandra@gmail.com" <dr.mramachandra@gmail.com>

Dear Professor Ramachandra,

It is my great pleasure to meet you during your visit to our department at university of aveiro. We are looking for some collaborative work related to graphene research and composites. Let me know if you have some research plan at your side.

Thank you,

With regards,

Manoj Kumar Singh

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*Dr. Manoj Kumar Singh, Ph.D*

*Group leader & Investigador Principal*

*Centre for Mechanical Technology and Automation (TEMA)*

*Department of Mechanical Eng.*

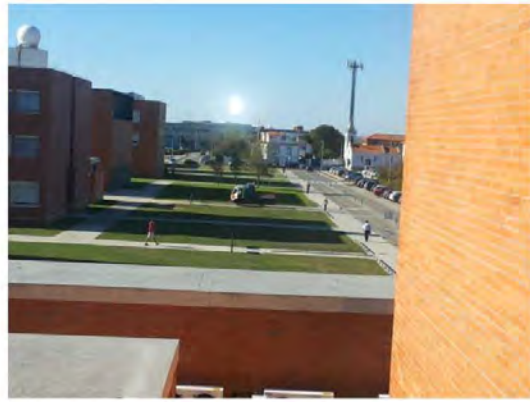
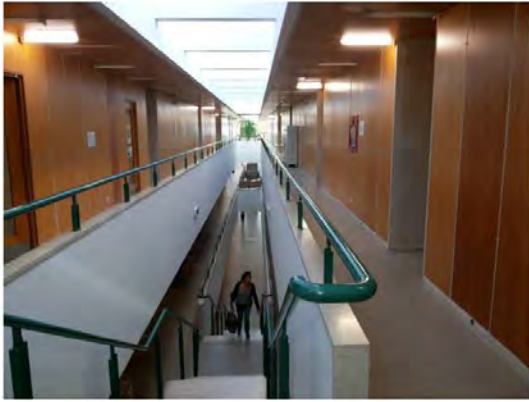
*University of Aveiro*

*3810-193 Aveiro, Portugal*

<http://www.ua.pt/tema/PagePerson.aspx?id=3933>

*Telefone: +351 234 370 830 / Extensão: 23879*

*Fax: +351 234370953*



## **Friday, 11/10/2013 – University of Aveiro**

### **09:30: I3N (Institute for Nanostructures, Nano modelling and Nanofabrication)**

Research work at Institute for Nanostructures, Nano modelling and Nanofabrication is as follows

- Organic semiconductor devices s: from OLEDs to photovoltaics in collaboration with CeNTi (Centre for Nanotechnology and smart materials, Portugal)
  - Fabrication and Characterisation of OLEDs and OPVs: Optical, Morphological and Basic electrical properties.
  - OLEDs are developed by thermal evaporation

Contact details: Luiz F. Ribeiro Pereira

Professor

Department of physics

University of Aveiro, Aveiro,  
Portugal

Email: [luiz@fis.ua.pt](mailto:luiz@fis.ua.pt)

Phone: +351 234 370 289

This contact may be very useful for **Dr. Sundar Seshu**

### **11:00: CESAM (Centre for Environmental and Marine Studies)**

- The talk mainly focused on research in the field of waste management, environment protection, Under water marine studies
- Centre offers Masters in Environmental and Marine Studies

### **14:30: IT (Telecommunications Institute)**

Research work at Institute for Telecommunications Institute is mainly on wireless circuits and systems

- Computer aided design tools for Nonlinear RF electronics

- Telecommunication systems identification (PA and Mixer behavioural modelling)
- Active device modelling (Si LDMOS/MOSFETs, GaAs, MESFETs/ HEMTs)
- Design of highly linear multi carrier RF power amplifiers and mixers
- Nonlinear distortion modelling and pre-distortion

This centre is internationally recognised as one of the best in nonlinear intermodulation distortion modelling.

Contact details:

1. Dr. Jose Carlos Pedro, Senior Professor  
Institute of telecommunications  
Campus at University of Aveiro, Aveiro, Portugal  
Email: [jcpedro@ua.pt](mailto:jcpedro@ua.pt)  
Phone: +351 234 377 900
2. Rogerio Nunes Nogueira, Senior Researcher  
Institute of telecommunications  
Campus at University of Aveiro, Aveiro, Portugal  
Email: [rnogueira@av.it.pt](mailto:rnogueira@av.it.pt)  
Phone: +351 234 377 900

**This contact may be useful for Dr. Kanmani, Department of telecommunications.**

### **16:30: Visit to IEETA (Institute of Telematics and Electronic Engineering)**

Research work at Institute of Telematics and Electronic Engineering is mainly on Image processing and Image informatics, Video EEG fMRI.

Contact details: Dr. Augusto Silva

Senior Professor  
Department of Electronics, Telecommunications and informatics  
Campus at University of Aveiro, Aveiro, Portugal  
Email: [augusto.silva@ua.pt](mailto:augusto.silva@ua.pt)  
Phone: +351 234 370 500

This contact may be very useful for **Dr.H.N.Suma and** faculty members of department of Medical Electronics.

**Saturday, 12/10/2013 – Aveiro to Lisbon to Dubai to India**

## Research at European Universities

- ✓ Requests from the business world, Industries and society inspire researchers to seek new projects and new angles of approach.
- ✓ Cooperation between business world (Industries) and universities and other research institutes is a condition for being considered for incentives (grants) from government.
- ✓ Different departments work together to design large-scale, multidisciplinary research projects.
- ✓ This resulted in
  - The most up-to-date knowledge for the organization
  - Chances of gaining incentive grants
  - Contact between organization and scientists, students and potential employees
  - Multidisciplinary approach to research questions
- ✓ There are various options for starting research in the University, ranging from small-scale research by Master's students to mega-projects with Research scholars.
- ✓ Practical orientated and applied research takes place within all faculties of the University.
- ✓ All research projects are done under collaboration with industries. The research institutes cater to the needs of the industry by developing products for them.
- ✓ The research funding is mainly done by industries and partly done by government. The work is mainly concentrated on applied research.



## Global Engineering Deans Council (GEDC) Conference

### “Online Digital Education and Transformed Faculty Roles”

**GEDC CONFERENCE**  
**CHICAGO, Oct.20-22, 2013**

Report by  
**Dr. K. M. Babu**  
Principal  
BMSCE



## **2013 GEDC - Acknowledgments**

**Thanks to the Council of Trustees, BMSET & BOG, BMSCE for permitting me to attend the important conference;**

**Thanks to IUCEE for the information and providing an opportunity to participate in the event;**

**Thanks to TEQIP-II for providing the funding the event;**

**Thanks to Vice Principal, Deans, HODs, Faculty & Staff of BMSCE for the support & cooperation for enabling me to attend the conference.**



## **2013 GEDC – Key Note: Global Drivers**

- 1. Accelerating Change**
- 2. Accessible & Inexpensive Global Communication**
- 3. Partnerships & Engagement**
- 4. Globalization**
- 5. Expanding Access to Higher Education**
- 6. Expanding Opportunities for Talent**
- 7. Cost Control/Sharing**
- 8. Innovation**
- 9. Great Global Challenges**
- 10. Leadership Challenges**



## 2013 GEDC – Key Note: Industry Perspective

1. Hands-on, engaging & Instructional tools
2. Readily accessible hardware (Open-source)
3. Personal real-time systems for students
4. Online content for Learning & Assessment
5. MOOCs & Blended Learning
6. Proliferation of Student Competition
7. Online & Technology Trend



## **2013 GEDC – Key Note: Issues & Challenges**

**Engineering Education is driven by Technology?**

**One University for a million population?**

**MOOCs / Online digital learning?**

**Blended learning or Internal MOOCs?**

**How to introduce Projects?**

**How to engage Students?**



## 2013 GEDC - Visit to US Universities...

**Purdue University** on 23.10.2013; 610 Purdue Mall West Lafayette, IN 47907, United States

**University of Wisconsin** on 24.10.2013; Madison, WI 53706 United States

**Michigan State University** on 25.10.2013; 426 Auditorium Rd East Lansing, MI 48824, United States

**Carolina State University** on 27.10.2013; 2200 Hillsborough Raleigh, NC 27695, United States

**University of Michigan** on 29.10.2013; 1032 Greene St, Ann Arbor, MI 48109, United States



## **Learning from the Universities**

**Huge Campuses**

**Lot of funding from the Government/Industry/Alumni**

**State of art Infrastructure**

**Autonomous Functioning**

**Cutting edge Curriculum**

**Industry on Campus/Support**

**Student facilities**

**Support Services for both the Faculty & Students**

**Research**

**Innovation**

**Entrepreneurship**

**Individual Initiatives by the faculty**

**Vast Library**

**Use of Technology & digital learning**



**THANK YOU**  
**for Your Kind Attention...**

**Dr. K. M. Babu**  
**Principal**  
**BMSCE**

# **A Brief Report on Visit to Canadian Universities from 26<sup>th</sup> October to 6<sup>th</sup> November 2013.**



## **Submitted by:**

**Dr. L.Ravi Kumar**  
**Professor**  
**Department of Mechanical Engineering**

**Dr.M.S.Dharmaprakash**  
**Professor**  
**Department of Chemistry**

**Dr.K.R.Suresh**  
**Professor**  
**Department of Civil Engineering**

## Program Schedule:

Dates	Time	Activities	Notes
<b>Saturday, Oct 26</b>	1:25 PM	Arrive into Vancouver Check-in hotel	CX 838 Rosedale on Robson Suite Hotel 838 Hamilton Street @ Robson
<b>Sunday, Oct 27</b>		City tour of Vancouver	Private time
<b>Day 1: Mon, Oct 28</b> <b>BC ShowCase</b> <b>Suite 2010 South,</b> <b>800 Robson Street</b>	9:45 AM	TEQIP Delegation arrives at the BC ShowCase	
	9:55 AM – 10:00 AM	Ministry of International Trade Assistant Deputy Minister to provide welcoming remarks to the delegation (TBD)	Ramona Soares
	10:00 AM – 10:30 AM	Presentation of Ministry of International Trade, Priority Markets, India team	Klaus Buttner, Executive Director Michael Nicholas, Director Edwina Ramirez, Senior Manager Kevin Loyens, Senior Manager Khri Singh, Senior Manager
	10:30 AM - 11:00 PM	Presentation of Ministry of Advanced Education	Kathryn Beaulac, Policy Advisor
	11:00 AM – 11:30 AM	Presentation of BCCIE	Tanya Grand, Director, Operations and Programs
	11:30 AM – 12:00 PM	Presentation of IC Impacts	Dr. Nemkumar Banthia Scientific Director and Chief Executive Officer Tel: +1 (604) 822-9541 or +1 (604) 822-4661
	1:00 PM – 3:00 PM	Presentations of BC Universities – UBC/SFU/BCIT.	Leonel Roldan Flores, Acting Executive Director, International, UBC Sarah Dench, Executive Director, SFU International Tracy Wang, Manager, BCIT International Joe Boyd, BCIT Research Liaison Officer

			Moderated by BCCIE
	3:00 PM – 5:00 PM	MITACS	Oba Harding Director, Business Development 604 616 5594
<b>Day 2: Tue, Oct 29</b>	9:00 AM – 9:30 AM	Travel to UBC	Ground transportation arranged by MIT
	9:30 AM- 10:30 AM	Meeting with UBC Electrical and Computer Engineering	Prof. Vijay Bhargava Professor Fred Kaiser Building, Kaiser Room 4018 2332 Main Mall
	10:30 AM – 11:00 AM	Travel to IC Impacts	
	11:00 AM – 12:00 noon	Site visit to IC Impacts Department of Civil Engineering	Sue Roppel, Chief Operating Officer Mr. Salman Soleimani-Dashtaki University of British Columbia 6250 Applied Science Lane Vancouver, BC V6T 1Z4
	1:00 PM – 2:00 PM	Meeting with UBC Advanced Fibrous Materials	Professor Frank Ko Canada Research Chair Professor Tier I 309-6350 Stores Rd. Vancouver, BC, Canada, V6T 1Z4 (604) 822-2738 frank.ko@ubc.ca
	2:00 PM – 3:00 PM	Travel to Simon Fraser University	
	3:00 PM – 5:00 PM	Meetings and Site visits to SFU (TBD)	Dr. Woo Soo Kim - Nano-manufacturing Dr. Majid Bahrami - Thermal Fluids Dr. Krishna Vijayaraghavan - Green Energy Dr. Erik K Jeang – Microfluidics  Contact: Karen Lee  External Liaison and Communications Officer  Faculty of Applied Sciences
	5:00 PM – 6:00 PM	Travel back to hotel	Rosedale on Robson Suite Hotel 838 Hamilton Street @ Robson
<b>Day 3: Wed, Oct 30 Victoria</b>	5:45 AM	Depart hotel	Ground transportation arranged by the TEQIP delegation
	7:00 AM – 8:35 AM	Travel to Victoria via BC Ferry	
	8:35 AM – 10:00 AM	Travel to University of Victoria	
	10:00 AM - 12:00 PM	Site visit and presentation at University of Victoria (TBD)	3800 Finnerty Rd Victoria, BC

	12:15 PM – 2:30 PM	Lunch & meeting at Camosun College (Interurban Campus)	Geoff Wilmhurst– Director, Camosun International <a href="mailto:wilmhurstg@camosun.bc.ca">wilmhurstg@camosun.bc.ca</a> 4461 Interurban Rd
	2:30 PM – 3:00 PM	Travel to RRU	
	3:00 PM – 5:30 PM	Meeting at RRU	Cyndi McLeod, Vice President <a href="mailto:Cyndi.mcleod@royalroads.ca">Cyndi.mcleod@royalroads.ca</a> 2005 Sooke Rd Victoria, BC
	6:00 PM – 7:30 PM	Reception for the delegation at the Castle, arranged by RRU	
	7:30 PM	Depart for Ferry terminal	
	9:00 PM – 10:35 PM	Travel to Vancouver via BC Ferry	
	11:10 PM	Arrive hotel	
<b>Day 4: Thu, Oct 31</b>			Ground transportation arranged by the TEQIP delegation
	9:00 AM – 11:30 AM	Site visit at Ballard Power Systems	Kevin Colbow, Director of Product Management, Engineering Services
	10:00 AM – 11:30 AM	Travel to Abbotsford	
	11:30 pm – 1:30 PM	Lunch	Private time
	1:30 PM – 2:00 PM	Travel to UFV	
	2:00 PM- 3:00 PM	Meeting/Discussions with UFV Indo Canadian Chair and UFV team	Mr. Andy Sidhu 33844 King Road, Abbotsford BC
	3:00 PM – 3:15 PM	Travel to Cascade Aerospace	
	3:15 PM - 4:00 PM	Visit to Cascade Aerospace (TBD)	Organized by Mr Andy Sidhu 1337 Townline Road Abbotsford, BC
	4:00 PM - 4:30 PM	Travel to Lally Group	
	4:30 PM – 5:15 PM	Visit to Lally Group	5237 Gladwin Road, Abbotsford, BC
	5:15 – 5:45 PM	Travel to restaurant	
<b>6:00 PM– 8:30 PM</b>		Networking Dinner	Gian Sweet and Restaurant 31836 South Fraser Way Abbotsford Hosted by UFV/Punjabi Patrika Mr Andy Sidhu – <a href="mailto:andyssidhu@hotmail.com">andyssidhu@hotmail.com</a>
<b>8:30 PM</b>		Depart Abbotsford	
<b>9:30 PM</b>		Arrive Hotel	
<b>Day 5: Fri, Nov 1</b>	9:00 AM – 4:00 PM	Visit to Toronto University	Prof. Eswar Prasad Prof. Ridha Ben Mrad
<b>Nov4</b>	Return Journey		



## Areas of Interaction

British Columbia offers diverse technology areas across a broad range of industry sectors

**Mining, Gas  
and Resources**

**ICT & Wireless  
6k &  
500+companies**

**Aviation, Defence  
and Security  
190 companies**

**Timber &  
Forestry  
products**

**Clean Energy and  
Technology  
1360 companies**

**Education**

**Agri-business,  
Food and  
Beverage**

**Digital Media  
900companies**

**Life Sciences  
179  
companies**

### Points Discussed:

- Joint Research Projects
- Exploring Consultancy Projects
- Transfer of Technology Programs
- Faculty & Student Exchange Programs
- Twinning Programs

### Outline of the program:

- meeting with large number of universities
- Visits to Industries
- Visits to Individual Universities
- Networking Session and exploring EOI/MOU
- Identification of Collaboration opportunities in Education/Business/Research

### Visits to the following universities and discussions on identification of joint projects

- **University of Victoria**
- **Simon Fraser University**
- **University of British Columbia**
- **British Columbia Institute of Technology**
- **Royal Roads University**
- **Camosun College**
- **University of Fraser Valley**
- **Thompson Rivers University**
- **University of Toronto**

## Day 1: 27-10-2013

### Presentations

Ministry of International Trade Assistant Deputy Minister Mr. Ramona Soares addressed the delegation. Ministry of International Trade Assistant Deputy Minister to provide welcoming remarks to the delegation (TBD)

It was followed by Presentations by the Officials of BC, UBC, UVIC, BCIT, IC Impacts, SFU and others. The members of the above universities made presentations about academic activities and research work and invited the delegates to visit them.

The highlights of the presentations are as follows.



### THE BC JOBS PLAN

Launched in September 2011, *Canada Starts Here: The BC Jobs Plan* is a living plan for creating long-term jobs and investment in BC.

The Plan has three priorities:

1. Opening/Expanding Markets
2. Getting Goods to Market
3. Enabling Job Creation



## STRATEGIC FRAMEWORK

### Vision (Jobs Plan)

*Defend & create jobs by ensuring strong economic and fiscal fundamentals, removing barriers to investments and growing exports to powerful new markets*

### Goal (Ministry Service Plan)

*BC is recognised globally as a preferred place to invest and do business*

### Mission (ITIA)

*To open & expand markets for BC goods & services, particularly in Asia, and attract investment to grow priority sectors*

AWARENESS

INVESTMENT

EXPORTS

ACCESS

5

## ITIA OBJECTIVES

### PROMOTE BC INTERNATIONALLY

*Double overseas presence, promote competitive advantages in key sectors and markets*

### ATTRACT INVESTORS

*Use "Key account" approach, targeting international companies to invest and open offices in BC*

### CONNECT BC BUSINESSES TO INTERNATIONAL BUYERS

*Identify opportunities and develop export markets*

### REDUCE BARRIERS TO TRADE

*Identify and address interprovincial and international trade barriers*

### IDENTIFY SECTOR AND MARKET STRENGTHS AND OPPORTUNITIES

*Centralised research and analysis expertise to assist achievement of all objectives*

7

## ORGANIZATION OF ITIA



9

## PROMOTE BC INTERNATIONALLY: Strategic Missions

### Premier's Missions 2011-12

#### China & India, November 2011

- Over 60 agreements and partnerships signed
- Value exceeding \$1.4 billion
- 250 business and 100 community representatives participated

#### Japan, Korea & the Philippines, May 2012

- 25 business agreements and partnerships signed
- Value exceeding \$500 million
- 104 delegates representing 75 companies participated

#### China & Hong Kong, September 2012

- Promoted BC at World Economic Forum held in Tianjin, China
- Participated in Future of Energy panel
- Hosted NWP Reception with Alberta and Saskatchewan



## PROMOTE BC INTERNATIONALLY: Events & Tradeshows

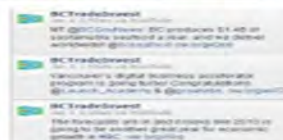
- BC and in-market TIRs organize and support industry specific exhibitions and conferences in BC and internationally
- Work with federal government, associations and companies to bring strong delegations
- Promote awareness of BC's competitive advantage and introduce BC companies to potential clients and partners
- In-coming trade missions
  - Work with TIRs, Major Investments Office, other levels of government, and wide range of partners



15

## PROMOTE BC INTERNATIONALLY: International Marketing Activities

- International reach through integrated traditional and digital marketing approaches
- Focused target market promotion
  - Search Engine Marketing campaigns
  - Blogs and social media
  - Fostering lead generation behaviour to connect investors and buyers to B.C. companies
- Success stories online, video profiles and in-market industry media coverage
- Trade show and event promotion in local languages in key markets



17

## EXPORT DEVELOPMENT & OLYMPIC LEGACY TEAM | AREAS OF FOCUS FOR EXPORT LEAD GENERATION

<b>NATURAL RESOURCES</b>	<b>AGRI-FOOD</b> <ul style="list-style-type: none"> <li>Value-added &amp; processed food products</li> <li>Food-related equipment &amp; services</li> <li>Primary Products (Grain/food), Fruits, Vegetable &amp; Plants, Meat &amp; Livestock</li> <li>Beverages</li> </ul> <p>Contact: Rob Arthur, Senior Manager Email: <a href="mailto:Rob.Athur@epos.bc.ca">Rob.Athur@epos.bc.ca</a> Direct: +1 604.660.3358 Mobile: +1 604.575.5212</p>	<b>LNG   MINING   FORESTRY</b> <ul style="list-style-type: none"> <li>Service &amp; supply</li> </ul> <p>Contact: Brian Kringer, Executive Director Email: <a href="mailto:Brian.Kringer@epos.bc.ca">Brian.Kringer@epos.bc.ca</a> Direct: +1 604.660.0220 Mobile: +1 604.307.8900</p>
<b>KNOWLEDGE ECONOMY</b>	<b>TECHNOLOGY</b> <ul style="list-style-type: none"> <li>Digital Media</li> <li>Information &amp; Communication Technologies</li> <li>Wireless Technologies</li> <li>Advanced Manufacturing</li> </ul> <p>Contact: David Collier, Senior Manager Email: <a href="mailto:David.Collier@epos.bc.ca">David.Collier@epos.bc.ca</a> Direct: +1 604.660.2714 Mobile: +1 604.228.9038</p>	<b>TECHNOLOGY</b> <ul style="list-style-type: none"> <li>Life Sciences</li> <li>Film &amp; Television</li> <li>International Education</li> </ul> <p>Contact: Brian Kringer, Executive Director</p>
<b>AEROSPACE, MARINE &amp; DEFENSE</b>	<ul style="list-style-type: none"> <li>Aerospace</li> <li>Ocean Technology</li> <li>Defense (Land, Marine, Air, Space)</li> </ul> <p>Contact: Rob O'Brien, Manager Email: <a href="mailto:Rob.O'Brien@epos.bc.ca">Rob.O'Brien@epos.bc.ca</a> Direct: +1 604.660.3569 Mobile: +1 604.505.5896</p>	<ul style="list-style-type: none"> <li>Ports</li> <li>Shipbuilding</li> <li>Transportation &amp; Logistics</li> </ul> <p>Contact: Brian Kringer, Executive Director</p>
<b>GREEN ECONOMY</b>	<b>CLEAN TECHNOLOGY</b> <ul style="list-style-type: none"> <li>Energy Efficiency</li> <li>Water &amp; Waste</li> <li>Distributed Energy Systems</li> <li>Environmental Technologies</li> <li>Clean Transportation</li> </ul> <p>Contact: Harsha Bhatia, Senior Manager Email: <a href="mailto:Harsha.Bhatia@epos.bc.ca">Harsha.Bhatia@epos.bc.ca</a> Direct: +1 604.660.2261 Mobile: +1 604.760.5614</p>	<b>GREEN ENERGY &amp; GREEN BUILDINGS</b> <ul style="list-style-type: none"> <li>Green Building Materials &amp; Design</li> <li>Biofuels</li> <li>Alternative Energy Production</li> </ul> <p>Contact: Brian Kringer, Executive Director</p>

## CONNECT BC BUSINESSES TO INTERNATIONAL BUYERS

### Export Development and Olympic Legacies

#### BC Business Network

A resource provided by the Ministry to help local businesses develop new opportunities and initiatives.

#### Benefits of Membership

Members get a unique supplier profile that gives them access to the tools, services and on-the-ground connections they need to grow their business internationally:

- Practical support from our TIRs for making introductions to potential buyers, investors and other in-market partners.
- Comprehensive assistance in identifying and qualifying opportunities and investment decisions.
- Regular industry news updates specific to target markets to take advantage of opportunities and mitigate risks.
- Support for business development activities including trade shows and international trade missions.
- Educational opportunities to prepare for growth, including export workshops, webinars and other export development events.

23

## ATTRACT INVESTMENT: Outcomes & Priorities

#### Program Outcomes

- From Jan. 07- Jan. 13, IICA project managers addressed over 1025 inquiries from foreign investors and influenced more than 114 companies to expand and create jobs in B.C.
- Daimler AG, Microsoft, Sony Imageworks, Ferus Inc.

#### 2013/2014 Priorities

- New investments and business expansion in priority markets (China, India, Japan, Korea, EU, and USA).
- Continue to provide top-rate services to investors and address impediments to foreign investment.
- Develop comprehensive responses to qualified leads generated by TIRs, federal government etc.
- Continue to proactively push forward with a key account approach to facilitating new investment

24

## PROMOTE BC INTERNATIONALLY: India Trade and Investment Team



- India is an unique market
- Global investor, but little in BC
- Resources, Technology, Agrifood, Education and Tourism have huge potential
- Expanded Vancouver-based staff from 3 to 5
- Expanded India-based staff from 5 to 13 staff
- New TIR/contractors on board
- New representative – Consulate in Mumbai
- New representative – Consulate in Chandigarh



Taj Mahal, India

27

## Going Forward...

### Contact:

Klaus Buttner, Executive Director, International Market Development  
[Klaus.Buttner@gov.bc.ca](mailto:Klaus.Buttner@gov.bc.ca) 604-660-3549

Michael Nicholas, Director – India & SE Asia  
[Michael.Nicholas@gov.bc.ca](mailto:Michael.Nicholas@gov.bc.ca) 604-775-2144

International Trade & Investment Attraction  
Ministry of International Trade



31



## Clean Energy & Technology

- ▶ Over 90% of B.C.'s electrical power is from clean, renewable hydroelectricity
- ▶ Economy is powered by clean energy technologies creating sustainable businesses and stimulate low-carbon investments
- ▶ All new power generating projects will have ZERO net Greenhouse Gas Emissions
- ▶ Innovative technologies

**Wind, Tidal and Solar Power, Hydrogen Fuel Cells, Energy Storage and Management, Bioenergy, Green building, and Smart grid**

Immense renewable resource potential

- ✓ \$C 15 billion in investment-ready projects, and
- ✓ 37,000 MW of renewable power ready to be harnessed



### British Columbia Institute of Technology:

BCIT conducts grant-funded and industry-sponsored applied research and development focused on solving industry's challenges. BCIT researchers create practical applied research solutions that can be transformed immediately into commercially relevant products, services and applications.

These activities often result in licensing opportunities, spin-off companies, and new start-ups.

- School of Business
- School of Computing & Academic Studies
- School of Construction & the Environment
- School of Energy
- School of Health Sciences
- School of Transportation
- Learning and Teaching Centre
- **Greenlight Innovations:**
  - Interested in R&D collaboration with Indian post secondary institutions. They have a relationship with Indian Oil in R&D testing and commercialization of technology.  
<http://www.greenlightinnovation.com/>
- **Powertech Labs Inc:**
- **Wavefront :** Wavefront is a not-for-profit National Centre of Excellence accelerating the growth and success of wireless companies in Canada
- **Aquatic informatics:** Water contamination management system
- **Corinex:** Meter data management under smart grid meter.
- **Cascadeaerospace:** Aerospace Industry
- **Lallygroup:** Agricultural Food processing (Raspberry Plant)Technology Centre

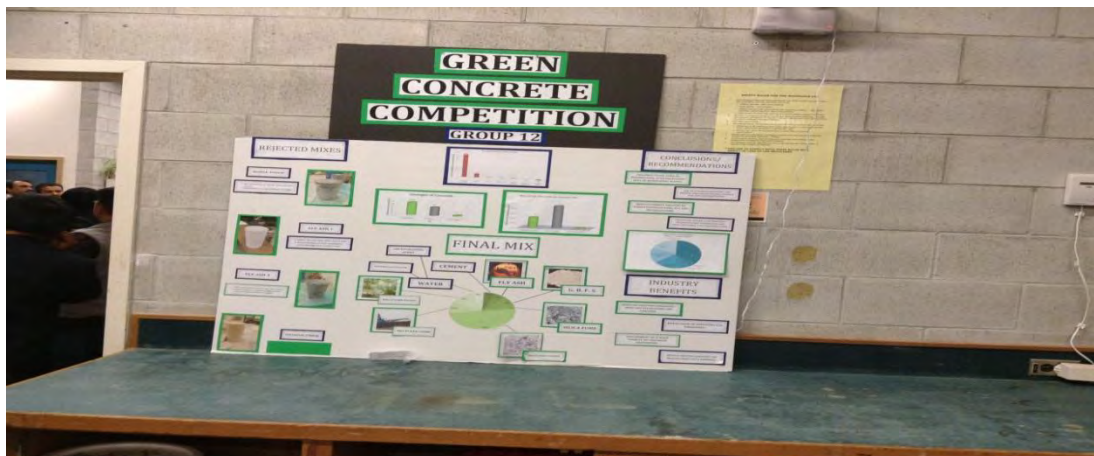
Day 2: 28<sup>th</sup> Nov 2013.

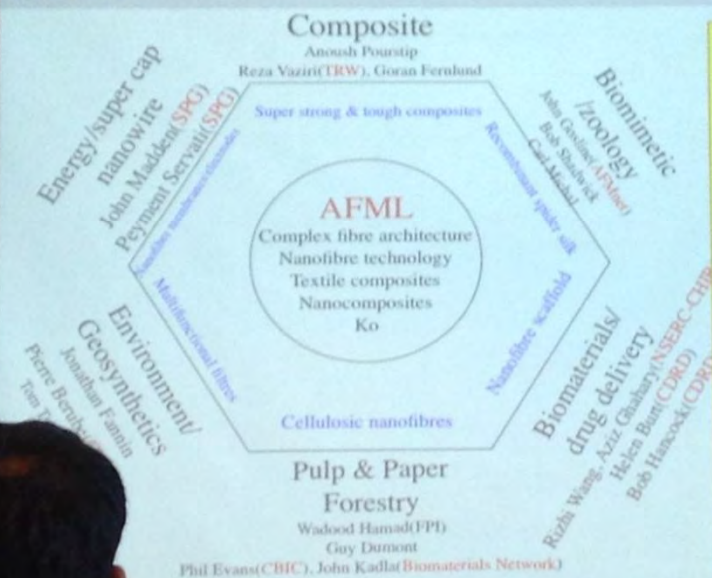


## University of British Columbia:

UBC has formal institutional agreements, memoranda of understanding and statements of cooperation with universities all around the world, reflecting more than 25 years of international partnerships.

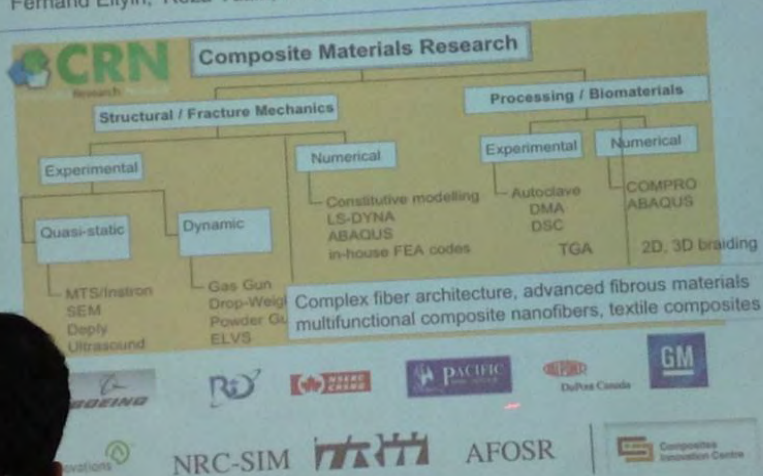
Emerging areas of research excellence at UBC reflect some of the world's most insistent themes in science, technology, social sciences, and the humanities

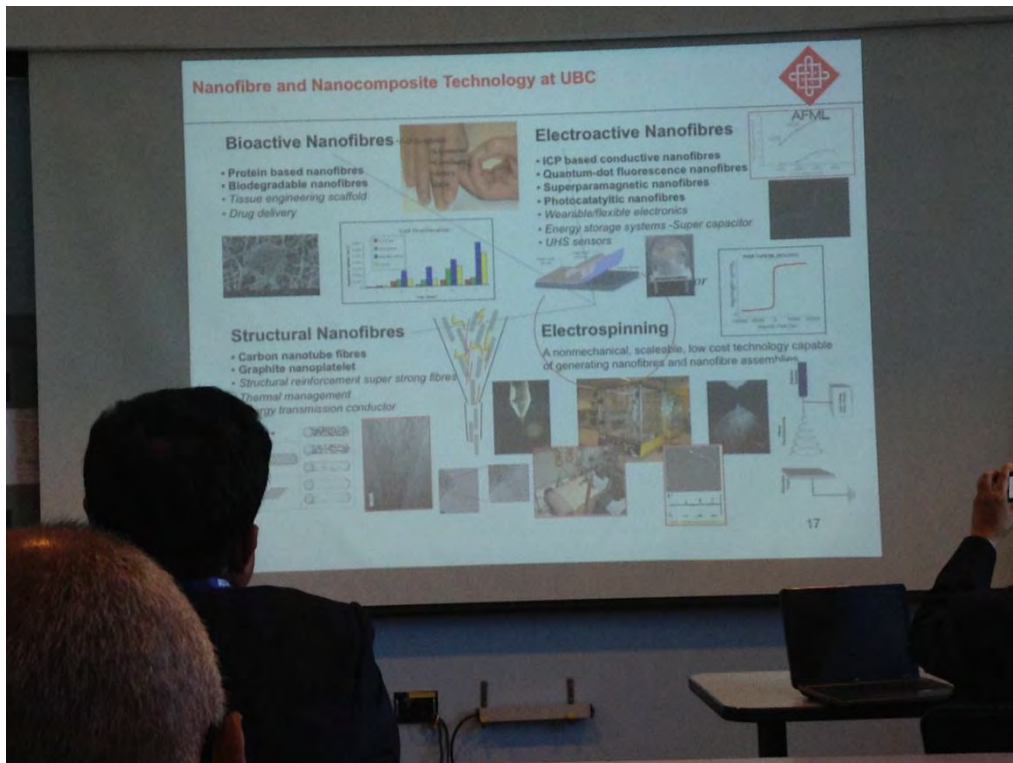


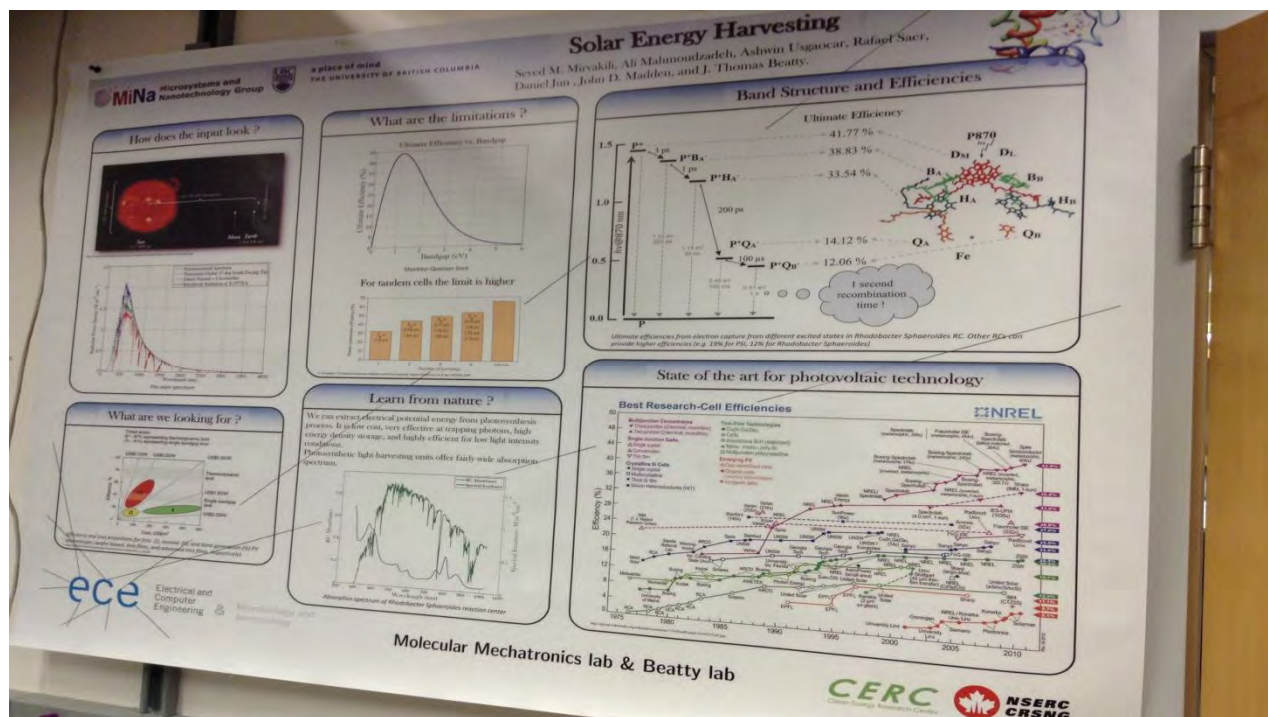


Neuroprosthetics - Simon Giszter  
(Drexel Medical School)  
Nanofiber base food materials -  
Advanced Food Network/Costas  
Karatzas (NEXIA).  
Dara Woederman (Drexel)  
Microbraider development -  
Thomas Gries (Aachen University,  
Germany)  
Nanowool fibres - Yi Li (HK Poly)  
Regenerated silk nanofibre yarns-  
Jie Xiong (Zhejiang Sci-tech,  
China)  
Silk/composite nanofiber -Sachiko  
Sukigara, Masaya Kotaki  
Next generation electrospinning  
system - Yoshihiro Yamashita  
(Shiga University, Japan)  
Nanofibre scaffold - C. Bai (TTRI,  
Taiwan)

Fernand Ellyin, Reza Vaziri, Anoush Poursartip, Goran Fernlund, Frank Ko







Every great discovery or innovation begins with research. Whether it is basic investigation in the sciences or arts, or developing applied solutions to meet the needs of society, research is a central component of UBC's mandate as a public university.

UBC's international reputation for excellence in research is founded on the amazing discoveries and inspired ideas of our researchers. Their work is strongly supported by strategic efforts to attract research funding, maintain modern facilities and equipment, steward partnerships with the public and private sectors and with other institutions, recruit and retain leading thinkers, and mobilize knowledge beyond the campus.

Internationally, UBC is focused on promoting collaborative research programs and exchange opportunities for graduate students and faculty members with peer institutions worldwide. We maintain a wide range of formal and informal agreements with universities around the world. UBC is also a founding member of the Association of Pacific Rim Universities and a member of the Universitas 21 international association.

During the visit, we have interacted the following professors at UBC

Dr. NemkumarBanthia  
 Scientific Director and Chief Executive Officer, Dept. of Civil Engineering  
 Tel: +1 (604) 822-9541 or +1 (604) 822-4661

Dr. A. Srikantha Phani  
 Canada Research Chair (Tier 2)

Professor, Department of Mechanical Engineering, The University of British Columbia  
2054-6250 Applied Science Lane, Vancouver, B.C., V6T 1Z4, Canada

*Dr. Akram Alfantazi Professor; Associate Dean, Research and Graduate Studies  
Ph.D (Queen's), P.Eng., FCIM, FNACE*

*Telephone: +1 (604) 822-8745; +1 (604) 827-5266*

*Office: Frank Forward Room 209; Fred Kaiser Room 5000*

Prof. Vijay Bhargava

Green communications, cognitive and cooperative wireless systems, MIMO-OFDM systems, cross-layer analysis.

Sue Roppel, Chief Operating Officer

Mr. Salman Soleimani-Dashtaki

Applied Science Lane

Professor Frank Ko, Canada Research Chair Professor Tier I

**SFU**

SIMON FRASER UNIVERSITY  
ENGAGING THE WORLD



**INTERNATIONAL ENGAGEMENT**

SFU Engaging the World

## Facts and Figures

- É Founded in 1965
- É Top comprehensive research university in Canada
- É 25,000+ undergraduate / 4000+ graduate students
- É Year-round trimester system, 3 campuses
- É Research strength in the humanities and social sciences, and the natural and applied sciences
- É 8 Faculties in Arts & Social Sciences; Science; Applied Science; Health Sciences; Environment; and Communication, Art and Technology; Business; Education
- É Interdisciplinary approach
- É 940 faculty, 1500 staff

## Students

### Curriculum

- “ Exchanges and field schools
- “ Undergraduate and graduate dual degrees with Zhejiang University, Communication University of China, and Monash
- “ Certificate in International Experiential Learning
- “ Americas Executive MBA; 4 countries
- “ MSc Global Health & MA International Studies
- “ International Teacher Education
- “ International MA in Teaching English as a Foreign Language
- “ Co-op education, international internships and practica

## International Engagement: India

- " India Advisory Council
- " Academic partners in India including TERI Univ, Baba Farid Univ, IIT-Ropar, Jawaharlal Nehru Univ, IIM-Indore, Panjab Univ
- " Student placements with InfoSys, Tata Consultancy, Village Life Improvement Project, Public Health Foundation of India
- " Credit courses in Punjabi language
- " *Komagata Maru* project
- " Diwali Gala fundraiser
- " Sponsorship of Vancouver  $\Phi$  Indian Summer Festival

## International Engagement

### For more information:

- " [sfui@sfu.ca](mailto:sfui@sfu.ca)
- " [www.sfu.ca/international](http://www.sfu.ca/international)

### Contacted Professors:

Dr. Woo Soo Kim - Nano-manufacturing  
 Dr. Majid Bahrami - Thermal Fluids  
 Dr. Krishna Vijayaraghavan - Green Energy  
 Dr. Erik K Jeang – Microfluidics

### Contact:

Karen Lee,  
 External Liaison and Communications Officer  
 Faculty of Applied Sciences

**Visit to University of British Columbia and SFU, interacted with professors and researchers of Mechanical Engineering, Materials Science and Engineering, , Civil Engineering departments and green processes involved in manufacturing and processing industries.**

**Most of the professors and researchers have shown keen interest in collaborative research in thematic areas and exchange of faculty and students in short term and long term basis.**

Day 3: 27<sup>th</sup> Nov 2013.

## Visit to University of Victoria

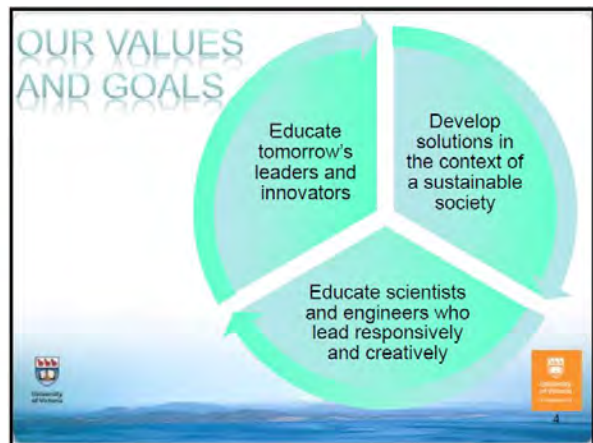
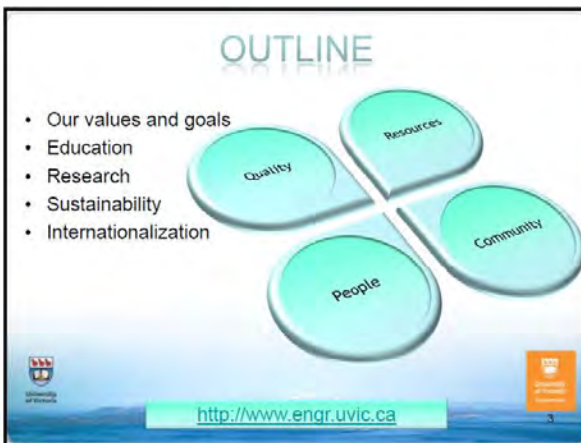
After welcoming the delegates, there were presentations by the group heads of various departments about their research and activities and invited the delegates to visit the R&D labs. Some of the highlights of the presentations are as follows:



Delegation of TEQIP Funded Karnataka Institutions  
to Faculty of Engineering, University of Victoria

Wednesday, Oct 30, 2013 -- 9:30-11:30 am -- ECS 440

Agenda		
Time	Item	Lead
9:30	Welcome, coffee, tea, networking, posters	ECS 440/440
9:50	Welcome	Hans Müller, Associate Dean Research
10:00	Overview UVic (10 mins)	Hans Müller, Associate Dean Research
10:10	Overview Teqip (10 mins)	Teqip leader
10:20	UVic Exchange Programs (5 mins)	Rustom Bhiladvala, Professor MECH Zuomin Dong, Chair MECH
10:25	MITACS programs (5 mins)	Hans Müller, MITACS
10:30	Tidal, Wind and Ocean Energy (15 mins)	Bradley Buckham, Professor MECH Curran Crawford, Professor MECH Peter Oshai, Professor MECH
10:40	Nano Materials (7 mins)	Rustom Bhiladvala, Professor MECH
10:45	Fuel Cells (7 mins)	Dr. Rishi Gupta, Professor MECH
10:50	Internet Engineering (7 mins)	Nigel David, BA MECH Hans Müller, Professor CSC
11:10	Posters and Networking (25 mins)	Andrew Marton, AVP International Tom Tordj, Dean Engineering Ashoka Bhat, ECE Professor MECH, CSC, ECE Profs and Students
11:15	Adjourn	



## QUALITY

Provide students with high-quality graduate and undergraduate programs  
—they actually want to take



## EDUCATION



<http://www.engr.uvic.ca>



**Engineering and Computer Science Programs at UVic**

### PROGRAMS

**MECHANICAL ENGINEERING**  
Mechanical design, control systems, thermodynamics, and materials science.

**COMPUTER ENGINEERING**  
Design and development of computer systems, software, and hardware.

**COMPUTER SCIENCE**  
Explore the science of what computers can do, how they work, and how to use them.

**ELECTRICAL ENGINEERING**  
Design and development of electrical systems, including power, control, and communication.

**MECHANICAL INDUSTRIAL**  
Make the mechanical world work better, faster, and more efficiently.

**MECHANICAL ENGINEERING**  
Design and development of mechanical systems, including power, control, and communication.

[www.engr.uvic.ca](http://www.engr.uvic.ca)

**PROGRAM OPTIONS**  
Customize your degree by adding a specialization, option, or interdisciplinary combined program. Depending on your choice of programs, options include:

Business	Mathematics
Computer Graphics	Neuroscience
Energy Systems	Physics
Health & Environment	Psychology
Geography	Science & Society
Health Information Science	Visual Arts
Human Computer Interaction	

## EXPERIENTIAL LEARNING

- UVic students apply their academic knowledge in real-world environments
- Alternate academic terms with work terms
- Link UVic with employers—valued education partners
- UVic is a top institution in Experiential Learning

- Mandatory co-op for all engineering programs
- Optional co-op for all computer science programs
- Graduate with 16 months of work experience

2012/13 Engineering	Placements	Int. student placements	% of int. student placements
Undergrads	953	66	6.9
Grads	61	56	91.8



## RESEARCH FUNDING

- 5 Tier II and 5 Tier I Canada Research Chairs
- \$17 million in NSERC funding last 5 years through 509 awards
- \$5 million in CF/BCKDF infrastructure funding 2011-12
- \$9+ million from other sources and contracts



## INVENTION DISCLOSURE AND START-UP COMPANIES

Company	Proprietor	UVCs on file	Disclosures
Power Measurement	Schneider Electric	ECE	350
Abel locks	Amazon	CSC	100
Pure Edge	IBM	ECE, Fine Arts	40
Disruptor		Mech	57
Tenacore		CSC, Econ	46
Prologic		CSC	38
Angstrom Power	BIC (\$18.7M)	Mech	23
Prototype Equipment		Mech	18
Design		ECE, CSC	12
Kemo/Papa		ECE, Bus	9
Precision Microdynamics		CSC, Bus	9
Chatterbrook		Mech	9
Milroy Engineering		Mech	6
Dynamic Systems		Mech	6
Analysis		ECE, CSC	6
Typho		ECE	2
Tequidream			



## RESEARCH IMPACT

- Emphasize longer-term, bold research programs
- Translate knowledge into wealth
- Grow the local base of knowledge workers
- Environmental well being of Canadians
- Massive impact
  - International research achievements
  - Technology transfer
  - Social impact



## ECONOMIC IMPACT

- Impact on the local economy
  - High tech sector has overtaken tourism
- Lost forestry jobs replaced with knowledge workers trained at UVic
- Attraction of international technology companies to Victoria
  - IBM
  - Microsoft



## IMPORTANCE OF COMPUTER SCIENCE AND ENGINEERING

- In 1980 there were 10 Lower Island lumber mills. Today, two mills remain.
- The high technology industry has grown to \$1.7B p.a. and provides careers in software, information technology, energy management, aerospace, medical devices, ocean technology and many more
- Our graduates create, manage, innovate, employ, lead, ...



## SUSTAINABILITY



<http://www.engr.uvic.ca>



## EXPANDING OUR HORIZON

- Emergent trends
  - Information, sustainability, biology, energy and water
- Meet community and global expectations
- Build on existing strengths and foster interdisciplinary research
- Lead in the implementation of innovative program delivery methods
- Increase enrolment of female students and other underrepresented groups



## INTERNATIONALIZATION



<http://www.engr.uvic.ca>



## INTERNATIONAL MOBILITY

- Increased enrollment of international undergraduate and grad students
- Two-way international co-op opportunities and exchange
- International fellowships to attract brightest students
- Develop flexible curricula to accommodate and facilitate studies abroad



## INTERNATIONAL PARTNERSHIPS

- Partner with world-class institutions and projects to enhance our research strengths and visibility
  - Leverage and tap International alumni
- Increase international research collaborations
  - Document and record International collaborations and exchanges at all levels—academic, industry, coop
  - Exchange, field studies, grad students, postdocs, visiting scientists, study leaves



## THANK YOU



<http://www.engr.uvic.ca>



Delegation of TRQIP-funded Kamataka Institutions  
to Faculty of Engineering, University of Victoria  
Wednesday, April 10, 2013 11:00 AM – 12:00 PM



### Agenda

Time	Topic	Guest
11:00	Registration, Coffee, and Welcome King, President	ACU, Singapore
11:05	Introduction	Assoc. Prof. Dr. Michael J. Griffin
11:10	Overview of UVC Systems	Assoc. Prof. Dr. Michael J. Griffin
11:15	Overview of UVC Systems	Assoc. Prof. Dr. Michael J. Griffin
11:20	UVC Exchange Programs (15 min)	Assoc. Prof. Dr. Michael J. Griffin
11:25	UVC Exchange Programs (15 min)	Assoc. Prof. Dr. Michael J. Griffin
11:30	UVC Exchange Programs (15 min)	Assoc. Prof. Dr. Michael J. Griffin
11:35	UVC Exchange Programs (15 min)	Assoc. Prof. Dr. Michael J. Griffin
11:40	UVC Exchange Programs (15 min)	Assoc. Prof. Dr. Michael J. Griffin
11:45	UVC Exchange Programs (15 min)	Assoc. Prof. Dr. Michael J. Griffin
11:50	UVC Exchange Programs (15 min)	Assoc. Prof. Dr. Michael J. Griffin
11:55	UVC Exchange Programs (15 min)	Assoc. Prof. Dr. Michael J. Griffin
12:00	UVC Exchange Programs (15 min)	Assoc. Prof. Dr. Michael J. Griffin



## Wind, Wave and Tidal Energy Research at UVic (In only 15 minutes?!)

Kamataka University Delegation Visit  
October 30, 2013

Dr. Curran Crawford  
Associate Professor  
Department of Mechanical Engineering  
Email: [curran@uvic.ca](mailto:curran@uvic.ca)  
Tel: 1-250-721-7940  
Web: [www.sddl.uvic.ca](http://www.sddl.uvic.ca)



**SSDL** Sustainable Systems  
Design Laboratory

University of Victoria Institute for Integrated  
Energy Systems

## Outline

- **Wave energy**
  - Dr. Buckham ([buckham@uvic.ca](mailto:buckham@uvic.ca))
- **Tidal energy**
  - Ducted turbines
  - CFD-oceanographic modeling
  - Porous disc & rotor testing
- **Wind energy**
  - Diffuser-augmented Dr. Oshkai ([poshkai@uvic.ca](mailto:poshkai@uvic.ca))
  - Advanced analysis & MDO capability
  - Small rotor testing
  - Offshore wind platforms

## Wave Energy (Dr. Buckham)

### • An Overview of the West Coast Wave Initiative (WCWI)



WEST COAST WAVE INITIATIVE

27

## What is wave energy?

Wave energy | Motivation & objectives | People | Gross resource | Net resource | Usable resource

### Wave Energy

- Wave energy converters work with long period water waves referred to as swell.
- Wave energy is sometimes described as a concentration of solar energy.
- Differential Heating  $\Rightarrow$  Winds  $\Rightarrow$  Swell



- The magnitude of the power transport in ocean waves has inspired a variety of WEC concepts
- Each class of WEC technology is distinguished by the water wave phenomena that drives it.



Institute for Integrated Energy Systems



## West Coast Wave Initiative at the University of Victoria

Wave energy | Motivation & objectives | People | Gross resource | Net resource | Usable resource

### WCWI

#### Resource Assessment

- Nearshore & Offshore SWAN/ SWASH Wave Model
- Fully Directional Model
- 3 Measurement Buoys
- WEC Site Investigations



GROSS RESOURCE

#### Technology Modeling

- Complete Spatial Motion
- Flexible Time Domain Model
- Fully Coupled PTO, Mooring and Device Model
- Hydrodynamic Drag



NET RESOURCE

#### Grid Integration

- KW: Hot Springs Cove
- MW: Vancouver Island
- GW: BC / Alberta



USABLE RESOURCE

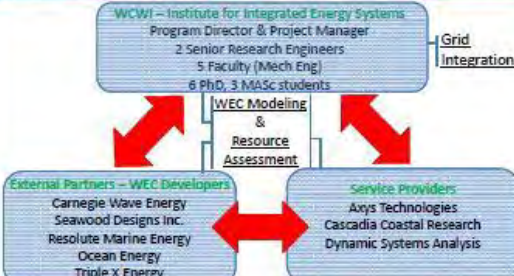


Institute for Integrated Energy Systems



## WCWI – external partners and service providers

Wave energy | Motivation & objectives | People | Gross resource | Net resource | Usable resource

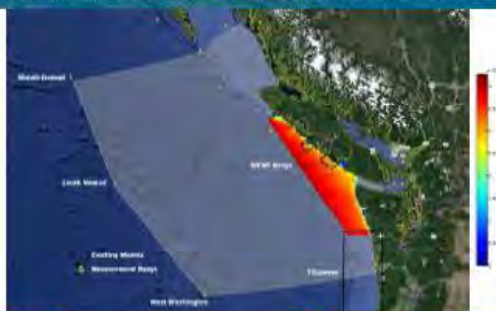


Institute for Integrated Energy Systems



## West Coast Wave Initiative – coastal measures & modelling

Wave energy | Motivation & objectives | People | Gross resource | Net resource | Usable resource

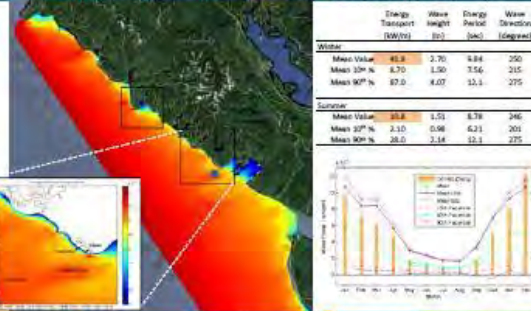


Institute for Integrated Energy Systems



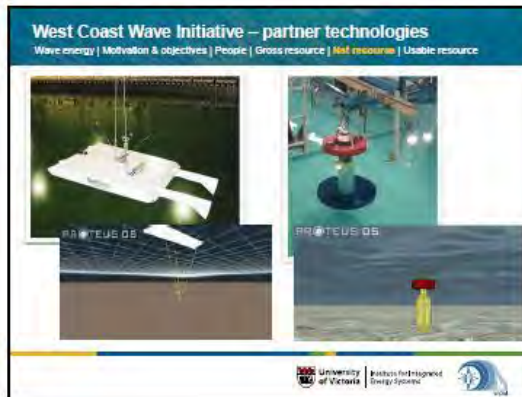
## Gross Wave Resource Assessment - Ucluelet

Wave energy | Motivation & objectives | People | Gross resource | Net resource | Usable resource



Institute for Integrated Energy Systems



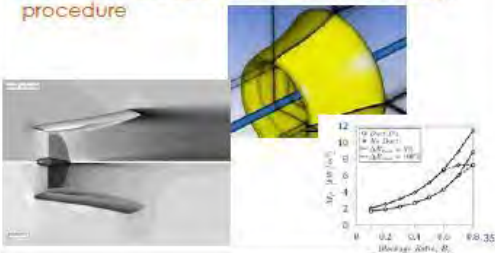


## Tidal Energy

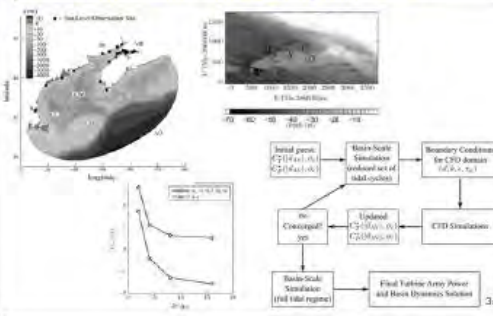
34

## CFD actuator disc and actuator line simulations carried out for ducted rotors

- Investigation of ducted vs non-ducted rotors
- Mixed CFD-blade element analysis & design procedure



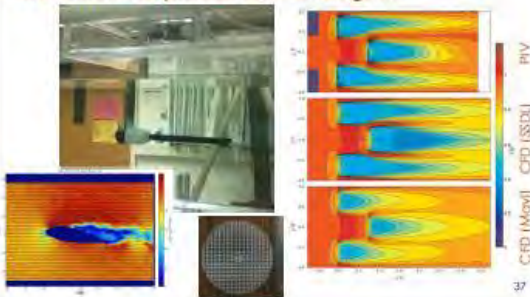
## There is a requirement for detailed device simulations within oceanographic sims



35

## The numerical modelling work is supported by water tunnel testing with PIV data

- Real rotors & porous disc analogues



37

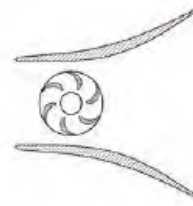
## Wind Energy

38

## Diffuser augmentation

39

## Prototype device

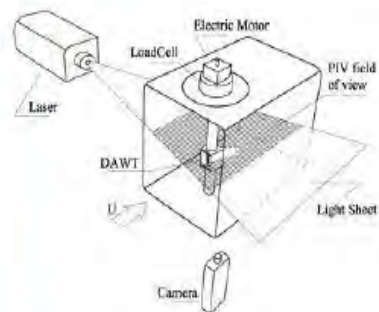


SeaHawk turbine (PacWind Inc.)



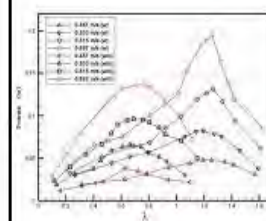
40

## Experimental system

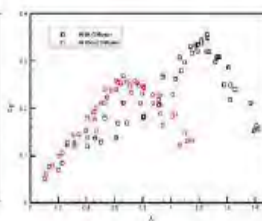


41

## Performance comparison of the turbine without and with diffuser



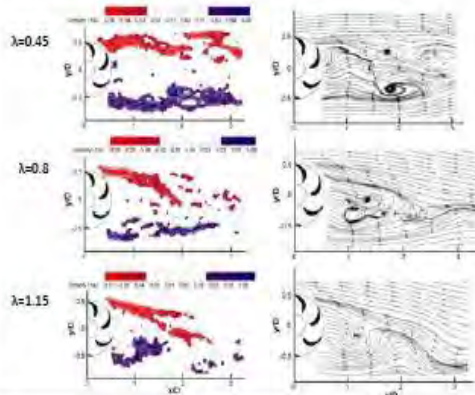
Power output vs. tip-speed ratio



Power coefficient vs. tip-speed ratio

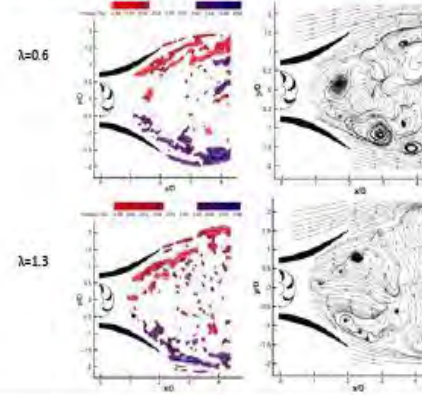
42

## Flow patterns downstream of the turbine without diffuser



43

## Flow patterns downstream of the turbine with diffuser



44

## Advanced Analysis & MDO

45

## Larger and advanced machine concepts require better tools & optimization

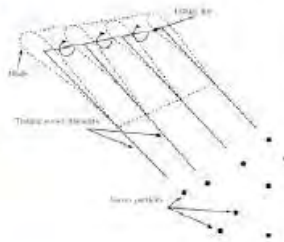
- Composite layups
  - Bend-twist coupling
  - Large non-linear deflections
- Non-straight blades
  - Sweep & out-of-plane curvature
  - Tailoring of vorticity location
- Need to consider system
  - Unsteady performance
  - Multidisciplinary optimization
    - Continuous range of operating points
    - Efficient gradient calculations



46

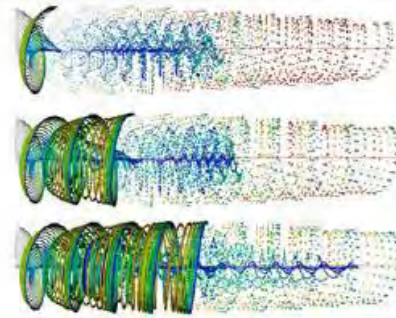
## Lagrangian vortex model required for full generality

- Cost vs fidelity
  - Grid-based CFD: hrs-days
  - BEM not general: sec
- Vortex methods
  - Mins-hrs
  - Our code
    - Vorticity transport eqns.
    - Particles, lines, sheets
    - FMM
    - RANS equations
    - 2nd order explicit
    - Steady & Unsteady implicit solvers
    - FEM formulation



47

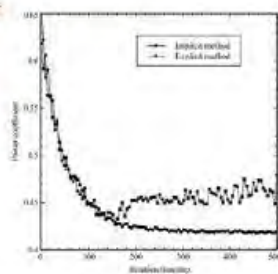
## Wake models are arbitrary combinations of particles, filaments or sheets



48

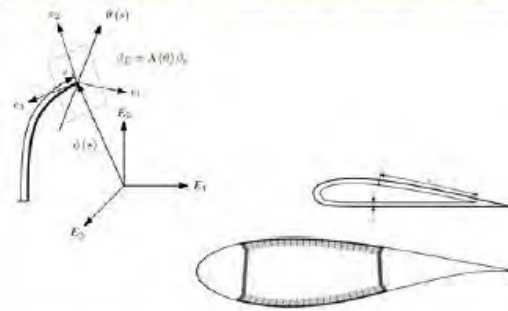
## Even simple preliminary implicit method greatly improved convergence

- Convergence at high  $\lambda$  where explicit diverges
- Only need one full Jacobian re-eval
  - Intelligent updating
- Monotonic convergence



49

## GEBT captures position $\phi$ and orientation $\Lambda$ of cross-sections; VABS cross section matrix



50



Thanks for listening & we're happy to chat afterward

• And thanks to all those hard-working students

– Literally too many to mention here...

• E-mails

- Dr. Crawford ([c Crawford@uvic.ca](mailto:c Crawford@uvic.ca))
- Dr. Buckham ([b Buckham@uvic.ca](mailto:b Buckham@uvic.ca))
- Dr. Oshkai ([o Oshkai@uvic.ca](mailto:o Oshkai@uvic.ca))

57

## NANOMATERIALS RESEARCH

Presented by: Dr. Rustom Bhiladvala  
Department of Mechanical Engineering  
Nanoscale Transport, Mechanics & Materials Laboratory  
University of Victoria  
[rustomb@uvic.ca](mailto:rustomb@uvic.ca)

The following slides contain an overview of Nano-Materials research in Dr. Bhiladvala's group, as requested by members of the visiting delegation.



In addition, a single slide each for a few other nano-materials related research groups in the Faculty of Engineering at UVic have also been included.

University of Victoria



Nanoscale Transport, Mechanics & Materials Laboratory

COVERING LARGE AREAS BY ORDERED NANOSTRUCTURES AT LOW COST

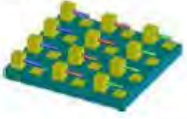



Nanoscale beams – e-beam lithography fabrication cost scales with area.

Microscale Beams – photolithography patterning cost does not scale with area.

How to cover large surface area with ordered nanostructures at low fabrication cost?

Many synthesis techniques yield a forest of NWs.






University of Victoria

Nanoscale Transport, Mechanics & Materials Laboratory

### GROWTH AND STRUCTURE OF SILICON AND METAL NANOWIRES

Silicon nanowire Vapor-Liquid-Solid (VLS) growth and TEM








1. Electrodeposit Au catalyst
2. Introduce SiH<sub>4</sub>
3. Synapse to release

Majority of Si NWs are Single Crystal [111] with 2-3 nm native oxide.

Smooth cylindrical SiNWs outside membrane.

Metal nanowires by electroplating

1. Electrodeposit metal nanowires
2. Dissolve membrane

Low esp. Au large grains, high esp. Rh fine-grains

For small Au NWs, grains can span diameter.

University of Victoria

Nanoscale Transport, Mechanics & Materials Laboratory

CHARACTERIZE NWS AT UVIC ADVANCED MICROSCOPY FACILITY (AMF)



Measuring:

- Dimensions
- Length variation
- Purity of NWs

By using:

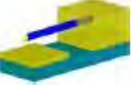
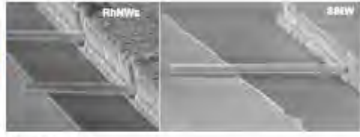
- SEM
- EDX
- XRD

University of Victoria

Nanoscale Transport, Mechanics & Materials Laboratory

### BOTTOM-UP DIRECTED-ASSEMBLY

Synthesize and functionalize NWs off-chip, then assemble the NWs in predetermined positions which can be created by a single exposure of light in a photolithography process.

Li et al., Nature Nano, 3, 88 (2008).

University of Victoria

**UVIC ADVANCED MICROSCOPY FACILITY**



**Dr. Rodney Herring**

**Research Areas**  
Crystal Growth  
Electron Microscopy  
Confocal Holography  
Properties of Materials



The HP-3300V scanning transmission electron holography microscope (STEM) will both achieve a STEM electron probe size and TEM spatial resolution approaching 40 picometers.


The Facility also houses a Hitachi-64800 FESEM, a Hitachi-FB2100 FIB and other supporting instruments.

University of Victoria



**CRYSTAL GROWTH LABORATORY**

**Experimental:**

- Crystal growth from liquid solutions by
  - Liquid Phase Epitaxy (LPEE),
  - Liquid Phase Diffusion (LPD),
  - Traveling Heater Method (THM).
- Material synthesis by
  - Zone Refining (ZR),
  - THM.

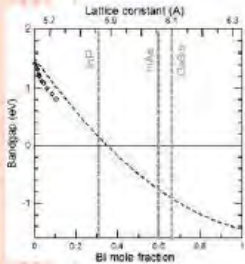


**Dr. Sudik Dey**  
Professor and Canada Research Chair

University of Victoria

**New Class of Long Wavelength Bi-Containing Semiconductors: GaAsBi**




Bandgap (eV)

Bi mole fraction

Periodic table, Bi heaviest group V

	B	C	N	O
	Al	Si	P	S
Z	G	G	A	Se
n	a	e	s	
C	In	S	S	Te
d	n	b		
H	T	P	Bi	Po
g	h	b		




**Dr. Thomas Tiedje**

• Max Bi concentration 21%,  $\lambda > 3 \mu\text{m}$ , NSF Materials World Network


University of Victoria



**NANOHOLE SENSORS**



**Dr. Reuven Gordon**





**Extraordinary optical transmission**

University of Victoria

Division of Medical Sciences

**The Willerth Laboratory focuses on neural tissue engineering.**



**Dr. Willerth**  
Holds a joint appointment with mechanical engineering

My work combines stem cells with novel 3D biomaterial scaffolds as way of engineering replacement neural tissue for the repair of spinal cord injury.

We work both embryonic and induced pluripotent stem cells along with natural and synthetic materials to replicate the structure and function of cells found in healthy nervous tissue.

Website: [www.engr.uvic.ca/~willerth/](http://www.engr.uvic.ca/~willerth/)



Neural progenitors derived from induced pluripotent stem cells cultured inside of a 3D fibrin scaffold where they can differentiate into neurons.

Island Medical Program

**CENTRE FOR ADVANCED MATERIALS AND RELATED TECHNOLOGIES (CAMTEC)**

• 29 professors in materials-related research across the campus of the University of Victoria

Nano Materials Research in the Faculty of Science at the University of Victoria

- Colloidal NPs, Quantum Dots (Prof. F. van Veggel, Chemistry)
- Nanomagnetism and Spintronics (Prof. B.C. Choi, Physics)
- Quantum Computing (Prof. Rogerio De Souza, Physics)
- Molecular Magnetics (Prof. Robin Hicks, Chemistry)
- Interfaces (Prof. Dennis Hore, Chemistry)

University of Victoria

# Canadian Bridges: Innovative Construction Materials & SHM

Presentation to TBQUP funded Kamataka Institutions,  
 University of Victoria  
 Wednesday, October 30<sup>th</sup>, 2013  
 Rishi Gupta, Ph.D., P.Eng.  
 (Mechanical Engineering, CIVE program)

# Topics

- Recent Bridge Failures
- Sustainability
- Innovative Materials
- Structural Health Monitoring

# Recent Catastrophic Collapses

Recent Bridge Failures

Sustainability

Innovative Materials

Structural Health Monitoring

[Dam under construction Collapses in Cambodia](#)  
ARI-Commune S.A. (P) Ltd.

[Concrete Deterioration Costs City Thousands](#)  
The Kansas City Star

[Japan Tunnel Collapses – Kills Nine](#)  
Kyodo News

[ASR & Cracking Causing Concrete Degradation at Nuclear Plant in New Hampshire](#)  
Seabrook360.com

[Water Caused Concrete to Fall from Parking Garage in Boston](#)  
WGBX Boston

[Condo Owners Sue Architects for Structural Defects](#)  
SP Daily

Source: Nyrlyn International Inc.

# Quebec Bridge Collapse October 2006- Five Dead

Recent Bridge Failures

Sustainability

Innovative Materials

Structural Health Monitoring

- Corrosion of steel /lack of maintenance /improper placement of rebar ??
- Unfortunately, material failure is suspected to have played a vital role

# Fiber Reinforced Concrete (FRC)

Recent Bridge Failures

Sustainability

Innovative Materials

Structural Health Monitoring

Materials

- Development of "Crack-free" sustainable materials

**Polypropylene**

**Glass**

**Cellulose**

# "Steel-Free" Bridge Decks (Highway 410, QC)

Recent Bridge Failures

Sustainability

Innovative Materials

Structural Health Monitoring

Installation of V-HCO in the bridge deck

## Wraps for Seismic Strengthening

University of Victoria

Recent Bridge Failures

Sustainability

Innovative Materials

Structural Health Monitoring



## Wraps for Seismic Strengthening

University of Victoria

Recent Bridge Failures

Sustainability

Innovative Materials

Structural Health Monitoring

## New Sect of Engineering - Cionivics?

University of Victoria

Recent Bridge Failures

Sustainability

Innovative Materials

Structural Health Monitoring

⇒ Civionics = Civil + Electronics

⇒ SHM = Structural Health Monitoring

- Structures are being monitored in real time using state of the art sensors

## SHM

University of Victoria

Recent Bridge Failures

Sustainability

Innovative Materials

Structural Health Monitoring

⇒ Canadian Projects:

- Plaza deck slab, Vancouver
  - Embedded sensors
  - Cellulose fibers



## SHM

University of Victoria

Recent Bridge Failures

Sustainability

Innovative Materials

Structural Health Monitoring

⇒ Canadian Projects:

- Loading Dock, Vancouver
  - Optical FBGs, HVFA
- Taylor bridge, Manitoba
  - CFRP for repair, accelerometers




## SHM


University of Victoria

Contact:

[gupta@uvic.ca](mailto:gupta@uvic.ca)

Phone: +250-721-7033

# Overview



## Polymer Electrolyte Fuel Cells

- Potential to deliver efficient zero emission power in a number of applications
- Technical challenges remain: e.g. catalyst, degradation/lifetime








## Modeling

Fiber-based sensors forming and more durable fuel cells systems

- Design optimization
- Material properties (e.g. electrocatalysis)
- Environmental effects (e.g. temperature, humidity)

## Optical Coherence Tomography

- Membrane swelling measurements
- Mechanical/Chemical degradation

# Humidity/Temperature sensor

## Sensor design:

The schematic diagram shows a cross-section of a sensor with a 1 mm width. It features an 'Uncoated temperature FIBO' layer and a 'Pulsed coated humidity FIBO' layer. A '30.5 um gap' is indicated between the two layers. A '10 um gap' is shown at the bottom. A '1 mm' scale bar is provided. Below the schematic, two graphs show 'Light intensity' versus wavelength  $\lambda$ . The first graph shows a peak at  $\lambda_{10}$  for a '10 um gap'. The second graph shows a peak at  $\lambda_{30}$  for a '30.5 um gap'.

## Step response:

The graph plots 'Light intensity (arb. unit)' on the y-axis (ranging from 0.0 to 1.0) against 'Time (s)' on the x-axis (ranging from 0 to 120). Two curves are shown: a blue curve for '30.5 um' and a red curve for '10 um'. The blue curve rises more slowly than the red curve. A table below the graph provides the response times for each curve.

Response time	30.5 um	10 um
Response time	4.4 s	1.9 s
Steady state	2.4 s	1.9 s

University  
of Victoria

Environmental Science and Engineering

Thank-you!

## Internet Engineering Tequip Site Visit

Department of Computer Science  
Faculty of Engineering  
University of Victoria

Hausi A. Müller  
hausimuller@gmail.com



## Software Engineering Research

- Software engineering @ runtime
  - Requirements, models, V&V @ runtime
  - Control science  $\equiv$  control theory + runtime V&V
- Situation-aware computing
  - Self-adaptive systems
  - Mobility & context management
  - Edge and cloud optimization
- Cyber security and privacy
  - Automated cyber testing
  - Network security engineering
- Revolutionizing how people use information
  - Ontology engineering
  - Data mining: video, audio, software
  - Group decision making
- Optimization @ runtime
  - Dynamic resource allocation and scheduling
  - Adaptive QoS & SLA profit management

BSeng program over 10  
UVic SE profs

NSERC Strategic Network on Smart Apps  
on Virtual Infrastructure (SAVI)  
13 PIs and 13 companies

ASPIRe—UVic Centre for Advanced  
Security, Privacy & Information Systems  
Research — 9 CSC & 10 ECE profs

CRC Chairs—Visualization,  
graphics, audio analysis  
NSERC Accelerator—data mining

Math frameworks to  
guarantee solution qualities

“The world is on the threshold  
of a new era of innovation and  
change with the rise of the  
**Industrial Internet.**”

– Peter C. Evans,  
GE Director of Global Strategy and Analytics

– Marco Annunziata,  
GE Chief Economist

[www.ge.com/sites/default/files/Industrial\\_Internet.pdf](http://www.ge.com/sites/default/files/Industrial_Internet.pdf) Nov 2012

Minds + Machines  
November 7th, 2012

Powered by 

## The Industrial Internet Economy Canadian Financial Post, May 2013

- The seeds of the Industrial Internet are already being planted in the Canadian economy.
- Sensor technologies are deployed in machinery to monitor equipment operations and manage the schedules and routes of transportation fleets.
- The Industrial Internet revolution begins with the choices of business visionaries.
- It will be managed and made valuable by the decision makers who rise to its opportunities.

<http://business.financialpost.com/category/news/executive-summary/industrial-internet>

## Something profound is happening ... The Smart Systems Revolution

 + 
  + 
 

Instrumented

Interconnected

Intelligent




Smart devices

Sensors

101

## Something profound is happening ... IBM

 + 
  + 
 

Instrumented

Interconnected

Intelligent

We now have the ability to measure, sense and see the exact condition of practically anything.

People, objects, systems, and machines can communicate and interact with each other in entirely new ways.

We can respond to changes quickly and accurately and get better results by predicting and optimizing for future events.



## IBM Initiative Smarter Systems for a Smarter Planet

The world is getting smarter  
More instrumented, interconnected, intelligent

Smart traffic systems    Intelligent oil field technologies    Smart food systems    Smart healthcare    Smart energy grids    Smart retail

Smart water management    Smart supply chains    Smart countries    Smart weather    Smart regions    Smart cities

103

## Something profound is happening ...

*We now have the ability to measure sense and see the exact condition of practically anything.*

*"When you can measure what you are speaking about and express it in numbers, you know something about it, but when you cannot measure it your knowledge is of a meager and unsatisfactory kind"*  
—Lord Kelvin

## Confluence of Sensors, Networks, Devices, Clouds, and Apps

At the core  
self-adaptive systems

105

## Situational Awareness (SA)

- SA is the perception of environmental and personal context with respect to time and space
- Comprehension of its meaning and its projection into the future
- Critical to decision-making in complex, dynamic situations

Applications

- Mars Curiosity
- Aviation—UAV, drones
- Military command and control
- Emergency services

Applications

- Driving a car
- Crossing a street
- Playing soccer
- Playing basketball
- Shopping

106

## Mindboggling Situation Awareness

India

Shibuya, Tokyo

Humans are amazingly adaptive

Intuitively we know how critical and valuable context is. But context is complicated.

*"Context is the new battleground between Android, iOS, Windows and Apple, Google, IBM, Microsoft, Sony, Samsung, GE."*

## The Age of Context

When you have culture, context and competition working in synergy, you can achieve great gains.  
*Nate Silver, The Signal and the Noise*

108

## Pillars of Context

- The Internet of Things
  - Sensors for location, light, motion, temperature
  - Record, transmit findings to control instruments
- Semantic web, Big data
  - Clouds store massive data on people, places, things
  - Information about everything accessible on the web
- Digital mapping
  - Every square inch of the world is mapped
- Really smart mobile devices
  - Every person has one
  - Highly customized smart applications
- Mature social media
  - Highly personalized virtual networks
- Wearable computers
  - Google glasses, Google driverless car

Highly Dynamical  
Software Systems

R. Scoble, S. Israel: *The Age of Context: How It Will Change Your Life & Work, 2013.*

## Managing Dynamic Context to Optimize Smart Interactions and Smart Services

Norha M. Villegas

- User-driven context management framework
- Context models at three different levels of abstraction
- Context monitoring and reasoning engine
- Personal web sphere model
- Personal web case study
- Goal: Make more offers to the user
- IBM CAS Project of the Year 2011

## Stream of Context




111

## Instrument and Capture the Stream of Context




Telepathy One

## Stream of Context is Big Data



113

## Killer Application




The Experiment—Volunteers

114

## Big Data — Signal to Noise Ratio

**IBM**

- As data available to an organization grows, the percentage of data that the organization can actually process is decreasing
- Smart real time analytics

The graph shows a blue curve representing 'Data AVAILABLE to an organization' and a red curve representing 'Data an organization can PROCESS'. The gap between them is labeled 'Signal and Noise'. The x-axis is labeled 'Big Data' and the y-axis is labeled 'Signal and Noise'.

115

## Big Data Holds a Lot of Context

**IBM**

- Smart real time analytics
- Exploit context to reduce the signal to noise ratio
- Become situation-aware

The graph shows a blue curve representing 'Data AVAILABLE to an organization' and a red curve representing 'Data an organization can PROCESS'. The gap between them is labeled 'Signal and Noise'. The x-axis is labeled 'Big Data' and the y-axis is labeled 'Signal and Noise'.

116

## Advanced Security, Privacy and Information Systems Research

**ASPIRE**  
Director: Stephen Neville, ECE  
Assoc. Direct: Venkatesh Srinivasan, CSC

<http://www.aspire.uvic.ca/>

- ASPIRE**
  - Established 2011 with support from CIO of BC
  - Complements BC's Int. Cybercrime Research Centre at SFU
  - Involves 10 ECE and 9 CS profs and many associate members
- Research areas**
  - Chip-level implementations, wired and wireless communications
  - Large-scale software systems-of-systems, cloud implementations
- Core goals**
  - Facilitator for collaborative cyber-security and cyber-privacy research
  - Focal point for improving the visibility ASPIRE research
  - Affiliate with NSERC's national cyber-security Strategic Network on Interconnected Systems Security Network (ISSNet)

117

## Network Engineering

- Adaptive application networking
- Automated cyber testing
- Edge networks
- Wireless mobile ad hoc networks
- Wireless sensor networks
- Network security engineering
- CSC and ECE profs

The diagram shows a central node connected to multiple peripheral nodes, representing a network topology.

118

## Revolutionizing How People Use Information

- Ontology engineering
- Group decision making
- User-centered interfaces
- Complex task automation
- Collaborative virtual environments
  - Margaret-Anne Storey, CRC Chair
  - Melanie Tory
  - Daniela Damian
  - Brian Wyvill, CRC Chair
  - Yvonne Coady
- Data mining
  - Alex Thomo, NSERC Accelerator—text, databases
  - George Tzanetakis, CRC Chair—audio
  - Alexandra Branzan-Albu—video
  - Daniel German, NSERC Accelerator—software repositories

**Canada Research Chairs**  
HCI, Visualization  
Graphics  
Audio analysis  
**NSERC Accelerator**  
Data mining  
Software repositories

Natural Sciences and Engineering Research Council of Canada

119

## SAVI Themes and Vision

**SAVI**

Optimize

Theme 1  
Smart Applications

Theme 2  
Extended Cloud Computing

Theme 3  
Smart Converged Edge

Theme 4  
Integrated Wireless/Optical Access

Theme 5  
Application Platform Testbed

Optimize

The diagram shows a central node connected to multiple peripheral nodes, representing a network topology.

120

## PITA—Practical Interdisciplinary Tractable Algorithms

Ulrike Stege

- Modeling and abstraction of interdisciplinary research questions as computational problems
- Model-based reasoning
- Human problem solving
- Algorithm design for NP-hard problems and for problems with very large data inputs
  - \* Computational biology
  - \* Bioinformatics
  - \* Cloud computing
  - \* Data anonymization



Integrated computational  
social science, computer  
science, cognitive science

121

## CGAR—Computational Geometry And Robotics Lab

Sue Whitesides

<http://cgarc.cs.uvic.ca>

- Motion planning problems and robotics
- Computational geometry
- Graph layout and algorithms
- CGAR interests range from theoretical algorithm design to mechatronics and embedded systems design.



Computational  
Geometry  
And Robotics



LM SAMARAI Monocopter 2011

## Mechatronics Lab—Self-Adaptive Systems

Mantis Cheng



Blimb



Hovercraft



Hovercraft

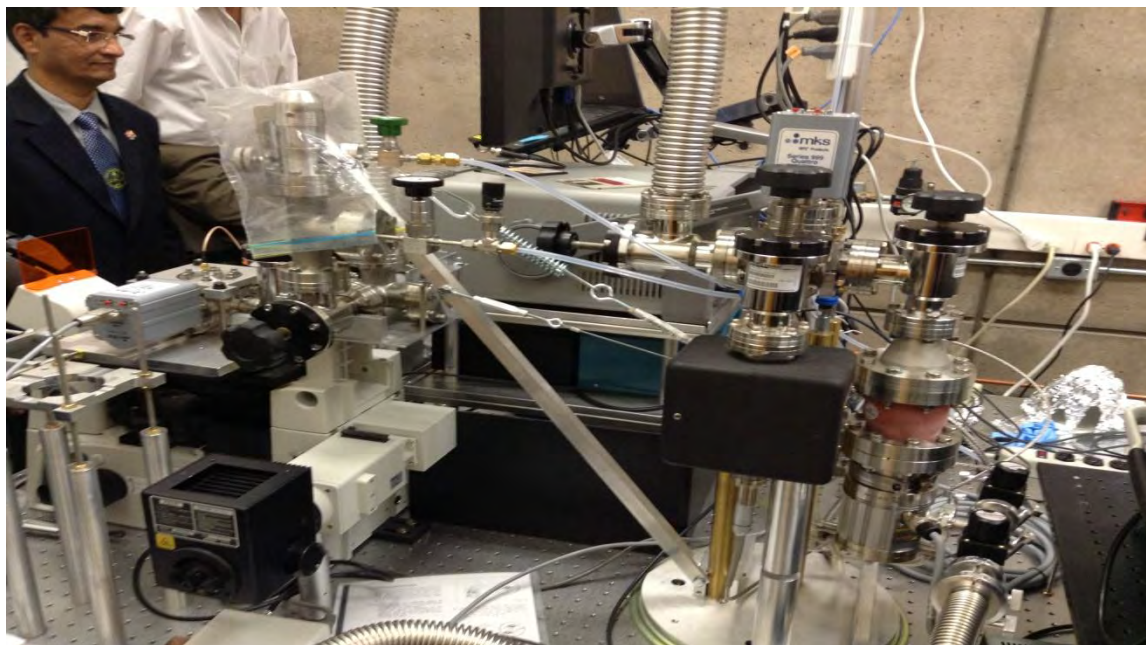
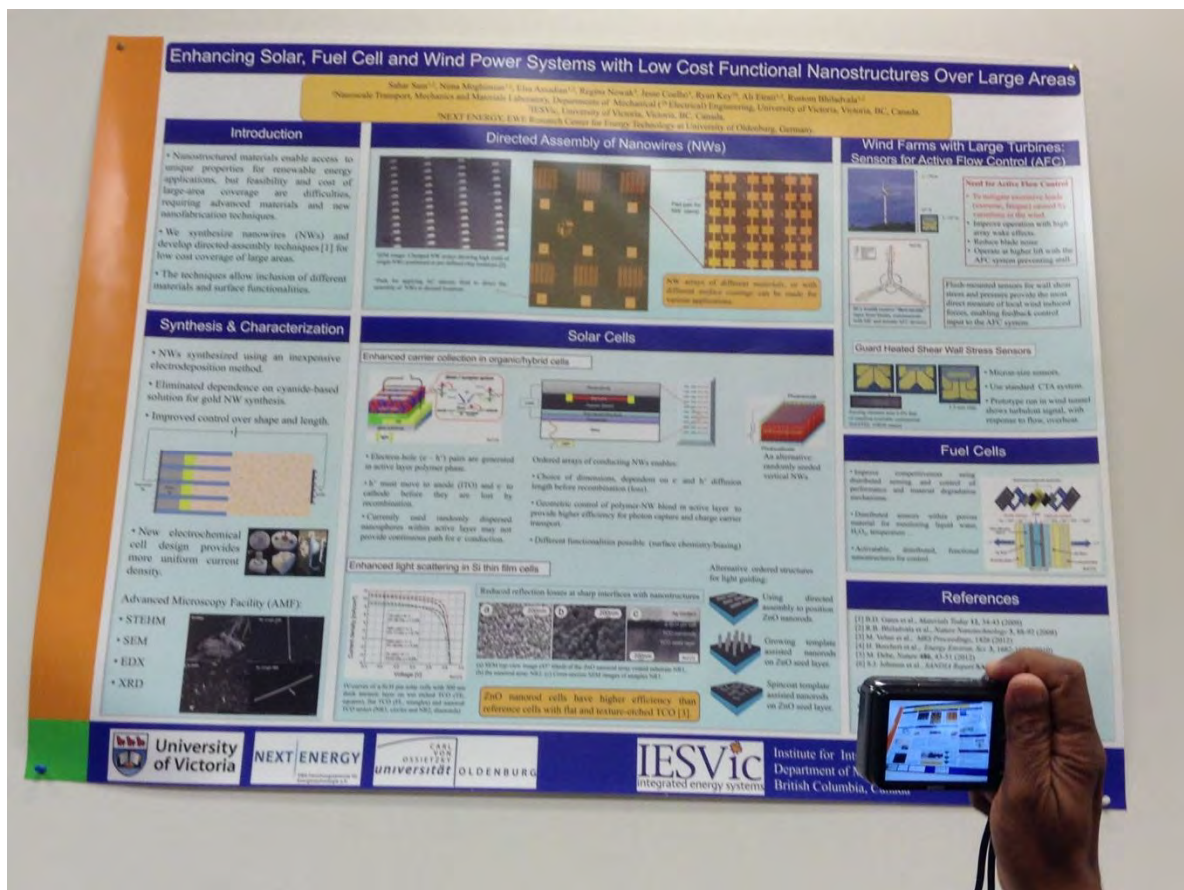


Leader and Follower

Software,  
electrical,  
computer and  
mechanical  
engineers  
working together



Explorer and rescuer







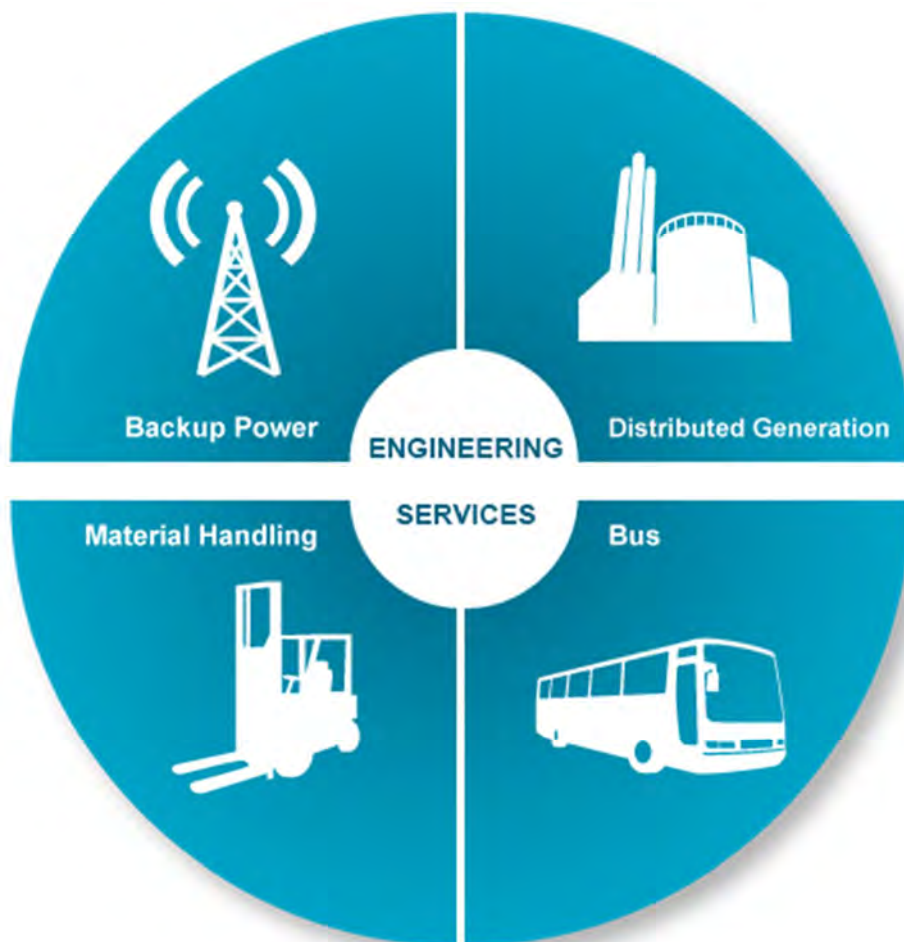
**Day 4: 30-10-2013**

**Visit to Ballard, Trinity Western University and CASCADE Aerospace**



**Fuel Cell Applications**

Ballard designs and manufactures market-leading clean energy PEM (proton exchange membrane) fuel cell stacks, modules as well as complete systems for both stationary and motive power applications. We can all lower the cost of energy AND enjoy a cleaner environment. Click below to learn more.







Cascade Aerospace Inc. is a division of IMP Group Limited - a proud Canadian company employing over 3,500 people worldwide. Headquartered in Halifax, Nova Scotia, IMP has been selected as one of Canada's Top 50 Best Managed Companies.

Cascade is a speciality aerospace and defence contractor focused on providing long-term integrated aircraft support programs for Original Equipment Manufacturers (OEMs), military, government and commercial customers. At Cascade Aerospace we strongly believe in the value of teaming - with our employees, our customers, our suppliers, and our communities. It is by "Teaming with the best" and working collaboratively with our many partners that we are able to offer custom-tailored solutions for each customer's unique requirements.

Our value proposition is that we build enduring customer relationships, and our strategic focus is customer satisfaction. It is a driver in all our decisions. Experience our creative, innovative, and performance-based company.

Day 5: 01-11-2013

University of Toronto:

## MIE Newsletter

Department of Mechanical & Industrial Engineering | University of Toronto

### Research Activities

#### Indo-Canadian Delegation Visits MIE



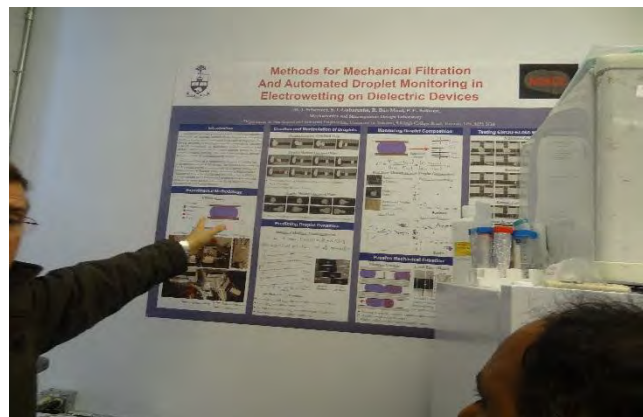
Three delegates of an Indo-Canadian Delegation visited Professor **Ridha Ben Mrad** and Adjunct Professor **S. Eswar Prasad**, on Friday, November 1.

The group has research interests in the areas Vibrations, Structure Stability and Rotor Dynamics, MEMS, Sensors and Nanomaterials, Nanotechnology and Water Resources and Irrigation Engineering. While the delegation (total of 26 members) spent their time in the Vancouver area Research

Institutions and Universities, three professors from this group made a special trip to Toronto for the meeting at MIE.

All the members are from BMS College of Engineering, Visvesvaraya Technological University, Bangalore, India. The group is looking for collaborative research programmes in the areas of their interest.

*Photo (from L to R): Prof. L. Ravikumar, Department of Mechanical Engineering, Prof. M.S. Dharmaprakash, Department of Chemistry, Professor Ridha Ben Mrad (MIE) Prof. K.R. Suresh, Department of Civil Engineering.*



## **Outcome of the visit**

### **Possible collaboration with Canadian Universities**

#### **Departments of Chemical Engineering, Bio Technology, Chemistry and Physics:**

The R&D activities of the departments mentioned above matches with the ongoing research activities of UBC, UVic, SFU, and University of Toronto. These departments can interact with the professors.

Probable research areas:

1. Bio-Chemical Engineering - Interfacial Phenomena.
2. Thin Films,
3. Manufacturing and characterization of Nano-materials and Sensors
4. Metal Finishing, Deposition
5. Reaction Kinetics,
6. Electro Chemistry [Alloys]
7. Atmospheric Physics and Material Science.

Our areas of interest matches with research areas at UVic., and University of Toronto in the area of Nanomaterials, MEMS and Sensors. The Professors can associate with these universities for collaborative research and mitacs.

For Research collaborations interested faculty may contact for favourable interactions.

**Prof. Rustom B. Bhiladvala**, PhD, Yale University. Contact: 250-721-8616, EOW 521;  
[rustomb@uvic.ca](mailto:rustomb@uvic.ca)

Nanoscale materials, mechanics and transport. Fluid and biomedical sensor development.  
Energy and sustainable development.

#### **Electrical Engineering Cluster (All Circuit Branches) – Research Areas**

Communication, Signal Processing and Control

Computers, Software and Networking

Electronics and Energy

Electromagnetics and Photonics

Materials and Devices

In these areas, the interested faculty of Electrical cluster can associate with UBC, UVic., University of Toronto and SFU.

**Contact :Prof. Vijay Bhargava**

Green communications, cognitive and cooperative wireless systems, MIMO-OFDM systems, cross-layer analysis.

**Michael Adams, Ph.D. (British Columbia)**

Digital signal processing; image/video/audio processing and coding; digital geometry processing; wavelets, subdivision, and filter banks; algorithms; multimedia systems; data compression; computer graphics.

**Ashoka K. S. Bhat, Ph.D. (Toronto)**

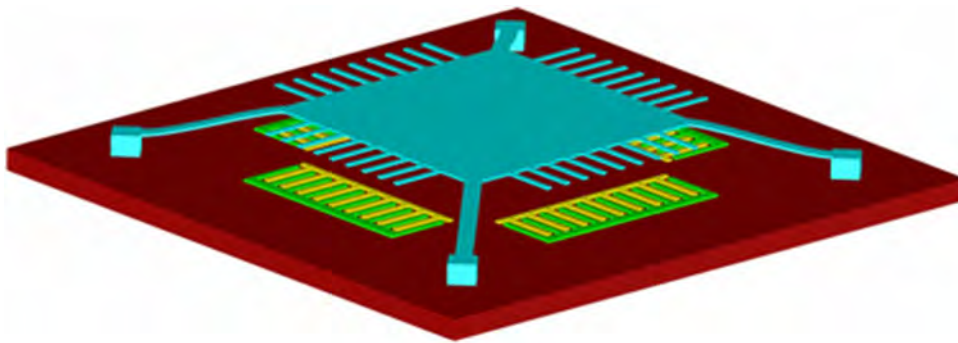
Power electronic controls, high-frequency link power conversion-resonant and pulse with modulation, power converters for alternative energy sources, design of electronic circuits for power control.

**Mechanical Engineering cluster**

**Areas of research:**

Active research with first-rate laboratories. Focus is on research in leading edge technologies such as:

- Advanced Manufacturing
- Advanced Materials
- Aeronautics and Aerospace
- Biomedical Engineering
- Computational and Continuum Mechanics
- Computational Design and Computer Aided Engineering
- Alternate Energy Technologies and Systems
- Industrial Sensing and Optics
- Mechatronics and Controls
- Micro-Electromechanical Systems
- Ocean Engineering and Ocean Energy
- Robotics and Mechanisms
- Thermo fluids Science and Transport Phenomena



In these areas, the cluster department can associate with UBC, **UVic.**, **University of Toronto**, and **SFU**.

**Contact:**

Ridha Ben Mrad, PhD, P.Eng., FCSME  
Professor ,Mechatronics and Microsystems Design Laboratory  
Department of Mechanical and Industrial Engineering  
University of Toronto Email: [rbenmrad@mie.utoronto.ca](mailto:rbenmrad@mie.utoronto.ca)  
Tel: 416-946-0689; Fax: 416-978-775

**Prof. Eswar S. Prasad**,Mechatronics and Microsystems Design Laboratory Department of Mechanical and Industrial Engineering , University of Toronto

Dr. A. Srikantha Phani  
Canada Research Chair (Tier 2)  
Assistant Professor  
Department of Mechanical Engineering  
The University of British Columbia  
2054-6250 Applied Science Lane  
Vancouver, B.C., V6T 1Z4, Canada

**Prof. Rustom B. Bhiladvala**, PhD, Yale University. Contact: 250-721-8616, EOW 521;  
[rustomb@uvic.ca](mailto:rustomb@uvic.ca)

**Department of Civil Engineering**

The following are the few areas of research in the department:

1. Concrete technology – self compacting concrete, geo-polymer concrete, light weight concrete, floating and porous concrete.
2. Structural masonry- Earth quake resistance structures, Masonry Structures Material and Structural Components.
3. Water Resources/Irrigation Management- Irrigation scheduling, Water quality( surface water and Ground Water), Applications of RS & GIS to natural resources.
4. Geo-Technical Engineering: Soil Stabilization and pavement materials
5. Environmental Engineering- quality issues related to water and air.
6. Traffic Engineering- urban planning.

Research at UBC – vancouver under the chairmanship of **Dr. Nemy Bhantia** matches with the areas of research at Civil department. The department may collaborate with IC- Impacts in the area of concrete technology and structural health monitoring. It can also look forward to associate with the university in the mitacs programme to depute the students to do their projects at UBC.

Similarly the department can also associate with **Dr.Rishi Gupta** of UVic., as his areas of research interest matches with some of the initiatives in the department.

Mechanical department, Civil department and Professors working in the area of water quality and sensors can explore the possibilities of establishing research colorations with **Dr. Ridha Ben Mrad**, Canadian chair at University of Toronto, department of Mechanical Engineering. He and his team has shown interest in establishing quality research. He also expressed to write joint research proposals to Indo-Canadian collaborative programmes.



Dr. L.Ravikumar

Dr. M.S.Dharmaprakash

Dr. K.R.Suresh.

**ANNEXURE-III**

B.M.S.COLLEGE OF ENGINEERING, BANGALORE-560 019

**TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME-II**

NAMES OF THE M.TECH STUDENTS ADMITTED DURING 2012-13 SELECTED FOR THE AWARD OF TEACHING ASSISTANTSHIP DURING THE ACADEMIC YEAR 2013-14 IN ADDITION TO PREVIOUSLY SELECTED M.TECH STUDENTS DURING 2012-13

Sl.No	Student Name	Department	Title of the M.Tech Course
1	Anil Kumar H M	Civil Engineering	Const. Technology
2	Rohini Krishna.G	Civil Engineering	Const. Technology
3	Achyuth K N	Civil Engineering	Environmental Engg
4	Chandini K B	Civil Engineering	Environmental Engg
5	Prarthana M K	Civil Engineering	Environmental Engg
6	Raisa Jabeen	Civil Engineering	Environmental Engg
7	Ravi B Patil	Civil Engineering	Environmental Engg
8	Sridhara D S	Civil Engineering	Environmental Engg
9	Ramya H N	Civil Engineering	Environmental Engg
10	Sachin A B	Civil Engineering	Environmental Engg
11	Amit Appasab Pawar	Civil Engineering	Transportation Engg & Management
12	Chaitra Holi	Civil Engineering	Transportation Engg & Management
13	Nakul N	Civil Engineering	Transportation Engg & Management
14	Pallavi HN	Civil Engineering	Transportation Engg & Management
15	Furquanul Haq	Civil Engineering	Transportation Engg & Management
16	Rachana Vithal Rao	Civil Engineering	Transportation Engg & Management
17	Tarun A Bathija	Civil Engineering	Transportation Engg & Management
18	Apurva V	Civil Engineering	Transportation Engg & Management

B.M.S.COLLEGE OF ENGINEERING, BANGALORE-560 019  
TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME-II

NAMES OF THE M.TECH STUDENTS ADMITTED DURING 2013-14 SELECTED FOR THE AWARD OF  
TEACHING ASSISTANTSHIP

Sl.No	Student Name	Department	Title of the M.Tech.Course
1.	Ayisha.A.	Computer Science &Engineering	Computer Science & Engineering
2.	Tejaswini.K.	Computer Science& Engineering	Computer Science & Engineering
3.	Amol.Ganganawar	Medical Electronics	Biomedical Signal Processing & Instrumentation
4.	Vichal.P.M	Medical Electronics	Biomedical Signal Processing & Instrumentation
5.	Mahendra.K	Medical Electronics	Biomedical Signal Processing & Instrumentation
6.	Kavya.R.	Medical Electronics	Biomedical Signal Processing & Instrumentation
7.	Hanamanth Hugar	Medical Electronics	Biomedical Signal Processing & Instrumentation
8.	Roopini.N.	Medical Electronics	Biomedical Signal Processing & Instrumentation
9.	Giridhar.M	Medical Electronics	Biomedical Signal Processing & Instrumentation
10.	Abhilash.M.	Medical Electronics	Biomedical Signal Processing & Instrumentation
11.	Likith Bhushan.H.N	Medical Electronics	Biomedical Signal Processing & Instrumentation
12.	Arunakumar.V.	Medical Electronics	Biomedical Signal Processing & Instrumentation
13.	Shankar .M.J	Medical Electronics	Biomedical Signal Processing & Instrumentation
14.	Satish.K.S	Medical Electronics	Biomedical Signal Processing & Instrumentation
15.	Santosh.N.Vasist	Medical Electronics	Biomedical Signal Processing & Instrumentation
16.	Akbar Ahamad	Medical Electronics	Biomedical Signal Processing & Instrumentation
17.	Raviraj.S.Kuber	Medical Electronics	Biomedical Signal Processing & Instrumentation
18.	Abhilasha.G.	Medical Electronics	Biomedical Signal Processing & Instrumentation
19.	Nandini.R.	Medical Electronics	Biomedical Signal Processing & Instrumentation

Sl.No	Student Name	Department	Title of the M.Tech.Course
20.	Yashaswini.Y	Medical Electronics	Biomedical Signal Processing & Instrumentation
21.	Somashekar.S.	Medical Electronics	Biomedical Signal Processing & Instrumentation
22.	Meghana.S.	Medical Electronics	Biomedical Signal Processing&Instrumentation
23.	Sneha Chowadary Kogani	Medical Electronics	Biomedical Signal Processing&Instrumentation
24.	Prabhudev.P.	Medical Electronics	Biomedical Signal Processing&Instrumentation
25.	Pavithra.R	Medical Electronics	Biomedical Signal Processing&Instrumentation
26.	Kavitha.T.P	Chemical Engineering	Biochemical Engineering
27.	Jagadish Reddy .M.L	Chemical Engineering	Biochemical Engineering
28.	Divya.C.N	Chemical Engineering	Biochemical Engineering
29.	Bipin.R.Sagar	Chemical Engineering	Biochemical Engineering
30.	Divya.S.Tuppad	Chemical Engineering	Biochemical Engineering
31.	Asma Siddiqh	Chemical Engineering	Biochemical Engineering
32.	Kavya.G	Chemical Engineering	Biochemical Techonolgy
33.	Harish.M.	Chemical Engineering	Biochemical Techonolgy
34.	Pallavi.J.	Chemical Engineering	Biochemical Techonolgy
35.	Shoaib Ahmed Sharif	Chemical Engineering	Biochemical Techonolgy
36.	Sober Lourembam	Information Science & Engineering	Computer Network Engineering
37.	Meina Singh	Information Science &Engineering	Computer Network Engineering
38.	SwathiB.S	Information Science & Engineering	Computer Network Engineering
39.	Bidyapati Thiyam	Information Science & Engineering	Computer Network Engineering
40.	Ramesh	Information Science & Engineering	Computer Network Engineering

Sl.No	Student Name	Department	Title of the M.Tech.Course
41.	Venkatesh.H.G	Electronics Engineering	Digital communication Engineering
42.	Mahanthasha.M.	Mechanical Engineering	Machine Design
43.	Arunakumar Siddappa Bhosle	Electrical&Electronics Engineering	Power Electronics
44.	Keerthana.K.	Electrical&Electronics Engineering	Power Electronics
45.	Anusha.S.B.	Civil Engineering	Construction Techonology
46.	Shrinath Hogade	Civil Engineering	Construction Techonology
47.	Salman Pasha	Civil Engineering	Construction Techonology
48.	Deepa.M.Naik	Civil Engineering	Construction Techonology
49.	Manasa.M.	Civil Engineering	Enivornmental Eng
50.	Manasa.N	Civil Engineering	Enivornmental Engineering
51.	Pooja .V.S.	Civil Engineering	Enivornmental Engineering
52.	Janavi.A.Desai	Civil Engineering	Enivornmental Engineering
53.	Manjunathswamy Kalmath	Civil Engineering	Enivornmental Engineering
54.	Teja.K.H	Civil Engineering	Enivornmental Engineering
55.	Hemanth kumar.G.	Civil Engineering	Enivornmental Engineering
56.	Harshitha.D.S.	Civil Engineering	Enivornmental Engineering
57.	Sneha.R.	Civil Engineering	Enivornmental Engineering
58.	Roopa.G.P	Civil Engineering	Enivornmental Engineering
59.	Ramitha.G.	Civil Engineering	Enivornmental Engineering
60.	Rayees Ahmed Sarkar	Civil Engineering	Enivornmental Engineering
61.	Pooja.J	Civil Engineering	Enviornmental Engineering
62.	Mamatha	Civil Engineering	Enviornmental Engineering
63.	Vikas Chandrashekhar.Ganiger	Civil Engineering	Transportation Engg & Management
64.	Ashwini.V.	Civil Engineering	Transportation Engg & Management
65.	Pavan.S.Hulagabal	Civil Engineering	Transportation Engg & Management
66.	Virupaxayya	Civil Engineering	Transportation Engg & Management
67.	Nagabhushan Moudgalya .C.R	Civil Engineering	Transportation Engg & Management
68.	Shambhulinga	Civil Engineering	Transportation Engg & Management
69.	Ashwini.B.P	Civil Engineering	Transportation Engg & Management
70.	Girish.T.	Civil Engineering	Transportation Engg & Management

Sl.No	Student Name	Department	Title of the M.Tech.Course
71.	Abishek.K	Civil Engineering	Transportation Engg & Management
72.	Ashish	Civil Engineering	Transportation Engg & Management
73.	Deepak	Civil Engineering	Transportation Engg & Management
74.	Madhu Kumar.R.T	Civil Engineering	Transportation Engg & Management
75.	Basavaraj Mallikarjuna Rajoor	Civil Engineering	Transportation Engg & Management
76.	Dhanalakashmi.M.	Civil Engineering	Transportation Engg & Management
77.	Arjun.S.	Civil Engineering	Transportation Engg & Management
78.	Veeramma.C.	Civil Engineering	Transportation Engg & Management
79.	Prashant Hugar	Civil Engineering	Transportation Engg & Management

NAME OF THE M.Sc [ENGG] BY RESEARCH STUDENT ADMITTED DURING 2013-14 SELECTED FOR THE AWARD OF TEACHING ASSISTANTSHIP

Sl.No.	Name of the Student	Department	Title of the M.Sc Engg
1.	Namratha Bharadwaj	Civil Engineering	Civil Engineering

# ANNEXURE-IV

## DETAILS OF FACULTY MEMBERS WHO ARE PERMITTED TO ATTEND THE FOLLOWING ACADEMIC PROGRAMS BY THE SUB-COMMITTEE OF BOG BY CIRCULATION

Sl. No.	Name of the Faculty, Designation & Dept.	Details of Program	Place	Workshop/Conf. Dates
1.	Dr.H.Y.Shrivalli, Asso.Prof, Mathamatics	FDP on "Stochastic Process in Engineering & Technology"	RVCE, Bangalore	July 18– 20, 2013
2.	Dr.Veena Jawali, Prof, Mathamatics	FDP on "Stochastic Process in Engineering & Technology"	RVCE, Bangalore	July 18– 20, 2013
3.	Sri.Prakash B Metre Asst. Professor, CSE	Workshop on "Research Methodologies & Latex"	Ghousia College of Engg.,Ramanagara	July 27-29, 2013
4.	Smt.Shubha Rao.V, Asst.Professor, ISE	Workshop on "Research Methodologies & Latex"	Ghousia College of Engg.,Ramanagara	July 27-29, 2013
5.	Sri.N.R.Prabhu Swamy Asst. Professor, ME	Workshop on "Research Methodologies & Latex"	Ghousia College of Engg.,Ramanagara	July 27-29, 2013
6.	Smt.Pallavi.G.B, Asst.Professor,CSE	Workshop on "Research Methodologies & Latex"	Ghousia College of Engg.,Ramanagara	July 27-29, 2013
7.	Smt.Shyamala G, Asst.Professor,CSE	Workshop on "Research Methodologies & Latex"	Ghousia College of Engg.,Ramanagara	July 27-29, 2013
8.	Latha.N.R, Asst.Professor,CSE	Workshop on "Research Methodologies & Latex"	Ghousia College of Engg.,Ramanagara	July 27-29, 2013
9.	Rajeshwari B.S Asst.Professor,CSE	Workshop on "Research Methodologies & Latex"	Ghousia College of Engg.,Ramanagara	July 27-29, 2013
10.	Smt.Nirupama Mohan, Asst.Prof, ME	"Training on Advanced Materials Characterization and Analyses"	RVCE, Bangalore	July 29,2013- August 2, 2013
11.	Dr.M.Ramachandra Professor, ME	"Training on Advanced Materials Characterization and Analyses"	RVCE, Bangalore	July 29,2013- August 2, 2013
12.	Sri.G.Dilip Maruthi Asst.Professor, ME.	"Training on Advanced Materials Characterization and Analyses"	RVCE, Bangalore	July 29,2013- August 2, 2013
13.	Dr.K.Narasimha Rao, Prof & HOD, IT	FDP ON "Industry Certification"	Silicon Micro Systems Hotel Ayur County, Munnar, Kerala	July 29, 2013 - August 3, 2013
14.	Smt.Namratha S.N, Asst.Prof, IT	FDP ON "Industry Certification"	Silicon Micro Systems, Hotel Ayur County, Munnar, Kerala	July 29, 2013 - August 3, 2013
15.	Dr.Ravishankar.B Prof & HOD,IEM	Attachment to Industry and R& D Organizations, /Capacity Development	SAP Mumbai	July 30- 2013
16.	S.Pradeepa, Asso.Professor,EEE	4 <sup>th</sup> Intl.Conference on advances in Power Electronics and Instrumentation Engineering – PEIE-2013	ACEEE & ISTE Chandigarh –India	August 1- 2, 2013

Sl. No.	Name of the Faculty, Designation & Dept.	Details of Program	Place	Workshop/Conf. Dates
17.	Dr.K.Ganesh, Asst.Professor ,CV	Workshop on "Warm mis Asphalt-challenges & way forward"	IIT, Madras	August 8-9, 2013
18.	Sri.H.S.Sathish, Asst.Professor, CV	Workshop on "Warm mis Asphalt-challenges & way forward"	IIT, Madras	August 8-9, 2013
19.	Sri.G.Dilip Maruthi, Asst.Professor, ME	Workshop on "Robotics and Low cost Automation"	RVCE, Bangalore	August 12-17, 2013
20.	Smt. D.R.Ambika, Asst.Professor ECE	Two Days Workshop on "Image processing using Python"	Dr.Ambedkar Institute of Technology, Banalore	August 13 -14, 2013
21.	Smt.Anjana Parva, Asst.Professor, IT	Workshop on "Digital Signal Processing & Information processing with hands on"	NMIT, Bangalore	August 19-23, 2013
22.	Smt.Preethi.K.Mane, Asst.Professor, IT	Workshop on "Digital Signal Processing & Information processing with hands on"	NMIT, Bangalore	August 19-23, 2013
23.	Smt.Kumuda.S, Asst.Professor, IT	Workshop on "Digital Signal Processing & Information processing with hands on"	NMIT, Bangalore	August 19 -23, 2013
24.	Sri.Ravi Kumar.R.N. Asso, Professor, ME	One Week Workshop On "Industrial Tribology"	Siddaganga Institute of Technology , Tumkur	August 20-24, 2013
25.	Sri.R.Mahendran, Asso.Professor, ME	One week workshop on "Industrial Tribology"	Siddaganga Institute of Technology , Tumkur	August 20-24, 2013
26.	Smt.Arathi.R.Shankar, Asso.Professor, ECE	Five days workshop on "Wireless Communication and Sensor Networks"	RVCE, Bangalore	August 20-24, 2013
27.	Smt.Jayanthi K.Murthy, Asso.Professor, ECE	Five days workshop on "Wireless Communication and Sensor Networks"	RVCE, Bangalore	August 20-24, 2013
28.	Dr.B.S.Nagabhushana, Professor, ECE	Five days workshop on "Wireless Communication and Sensor Networks"	RVCE, Bangalore	August 20-24, 2013
29.	Smt.Mamatha Assistant Professor, Infor.Science & Engg	Five days workshop on "Wireless Communication and Sensor Networks"	RVCE, Bangalore	August 20-24, 2013
30.	Sri.Rakshith Saligram, Teaching Asst, ECE	IEEE International Conference on Advances in Computing Communication & Informations	SJCE, Mysore	August 22-25, 2013
31.	Sri.Gururaj.H.S Asst.Professor, ISE	Trining on "VMware, VSphere, Install, Configure, Manage"	Koeing Solutions Ltd., Koramangala	August 26 -30, 2013 Rescheduled to October 7-11, 2013

Sl. No.	Name of the Faculty, Designation & Dept.	Details of Program	Place	Workshop/Conf. Dates
32.	Sri.D.Ajay Kumar, Asst.Professor, IT	FDP on "Essentials of FPGA Design and Designing with Verilog HDL"	CoreEL Technologies, Bangalore.	August 29-31, 2013 Rescheduled to September 12-14,2013
33.	Sri.N.Srinivasa Rao, Asso.Professor, TCE	FDP on "Essentials of FPGA Design and Designing with Verilog HDL"	CoreEL Technologies, Bangalore.	August 29-31, 2013 Rescheduled to September 12-14,2013
34.	Sri.J.Dinesh Reddy, Asst.Professor, ECE.	FDP on "Essentials of FPGA Design and Designing with Verilog HDL"	CoreEL Technologies, Bangalore.	August 29-31, 2013 Rescheduled to September 12-14,2013
35.	Shri.Harish V.Mekali, Asst.Professor, ECE	FDP on "Embedded system Design and Application using ARM and Development tools"	B.V.B.College of Engineering and Technology, Hubli	August 29-31, 2013
36.	Sri.Madhava Murthy, Asst.Professor, ME	FDP on "Polymer Compsites"	SJCE, Mysore	August 30-31, 2013
37.	Dr.S.Srinivas, Asso. Professor , ME	FDP on "Polymer Compsites"	SJCE, Mysore	August 30-31, 2013
38.	Dr.M.Ramachandra, Professor, ME	FDP on "Polymer Compsites"	SJCE, Mysore	August 30-31, 2013
39.	Dr.M.V.Murugendrappa Asso. Professor,Physics	FDP on "Polymer Compsites"	SJCE, Mysore	August 30-31, 2013
40.	Dr.Y.Chandrasekhara Reddy,Professor & HOD, Chemistry	FDP on "Polymer Composites"	SJCE, Mysore	August 30-31, 2013
41.	Smt.B.N.Beena Ullala Mata, Asso.Professor, ML	International Conference on "Youth against Cancer"	Sindhi College, Bangalore	August 30-31, 2013
42.	Sri.Ajay Kumar Devarapalli, Asst.Professor, IT	One day National Workshop on "Patents & Innovations"	Malnad College of Engineering, Hassan	August 31- 2013
43.	Smt.Namratha.S.N, Asst.Professor, IT	One day National Workshop on "Patents & Innovations"	Malnad College of Engineering, Hassan	August 31- 2013
44.	Dr.G.N.Rameshaiah, Asso.Professor, CHL	One day National Workshop on "Patents & Innovations"	Malnad College of Engineering, Hassan	August 31- 2013
45.	Dr.M.S.Dharmaprakash, Professor, Chemistry	"One day Workshop on World Bank Procedures for procurement of goods, equipments & services through PMSS"	NMAM Institute of Technology, Nitte, Mangalore	September 2, 2013
46.	Dr.K.R.Suresh, Professor, CV	"One day Workshop on World Bank Procedures for procurement of goods, equipments & services through PMSS"	NMAM Institute of Technology, Nitte, Mangalore	September 2, 2013
47.	Smt.Rajeshwari Hedge, Asso.Professor, TCE	NuMicro ARM Cortex-M10 and its Applications	M.S.Ramaiah College of Engineering, Bangalore	September 10-11, 2013
48.	Dr.Chandasree Das, Asst.Professor,EEE	International Conference on "Thin Films & Applications"	SASTRA University, Thanjavur	September 11-13, 2013
49.	Dr.M.S.Dharmaprakash, Professor, Chemistry	"IEEE Workshop on Nanotechnology and Micro/Nano Sensors"	Centre for Nanoscience & Engineering IISc, Bangalore	September 19-21, 2013

Sl. No.	Name of the Faculty, Designation & Dept.	Details of Program	Place	Workshop/Conf. Dates
50.	Dr.Rathanraj K.J, Professor, IEM	Attend virtual "SUPRA SAE INDIA"	KIIT, Bhubaneswar	September 20-21, 2013
51.	Sri.Sainath.K, Asst.Professor, CHL	"TEQIP Innovation Meet"	Institute of Chemical Technology, Mumbai	September 25-26, 2013
52.	Sri.Paran Jyoti Sarma, Asst.Professor, CHL	"TEQIP Innovation Meet"	Institute of Chemical Technology, Mumbai	September 25-26, 2013
53.	Sri.Madhava Murthy Asst.Professor, ME	"International Conference on Convergence of Science, Engineering & Management in Education & Research – A Global Perspective	Dayananda Sagar Institutions, Bangalore	September 26-27,2013
54.	Smt.P.Meena, Asso.Professor, EEE	"International Conference on Women Empowerment Global Perspective"	Vivekananda Kendra, Kanyakumari	September 27-28,2013
55.	Dr.Samita Maitra, Professor & HOD, CHL	"International Conference on Women Empowerment Global Perspective"	Vivekananda Kendra, Kanyakumari	September 27-28,2013
56.	Dr.B.Kanmani, Professor & HOD, TCE	"International Conference on Women Empowerment Global Perspective"	Vivekananda Kendra, Kanyakumari	September 27-28,2013
57.	Dr.Madhu.G, Asst.Profesor, Chemistry Department	Drug Discovery India 2013	Select Biosciences India Pvt Ltd., Bangalore	September 27-28, 2013
58.	Dr.Kirti Agarwal, Professor, Chemistry Dept	Drug Discovery India 2013	Select Biosciences India Pvt Ltd., Bangalore	September 27-28, 2013
59.	Dr.H.N.Suma, Professor, ML	Workshop on Neural Networks, Fuzzy Logic and Pattern Recognition for Engineering & Health Care"	MSRIT, Bangalore	September 27-29, 2013
60.	Smt.Joshi Manisha Shivram, Asst.Professor, ML	Workshop on Neural Networks, Fuzzy Logic and Pattern Recognition for Engineering & Health Care"	MSRIT, Bangalore	September 27-29, 2013
61.	Smt.Vijayalakshmi.K, Asso.Professor, ML	Workshop on Neural Networks, Fuzzy Logic and Pattern Recognition for Engineering & Health Care"	MSRIT, Bangalore	September 27-29, 2013
62.	Dr.Gowrishankar, Professor & HOD,CSE	"International Workshop on Faculty Leadership on Embedded and Mobile Software"	JECRC UDML College of Engineering, Jaipur	September 30 – October 4, 2013
63.	Smt.Tripti Pachori, Asst.Professor, Mechanical Engg.	Paper presentation in International Conference on "Advancements and Futuristic Trends in Mechanical and Materials Engineering"	Punjab Technical University, Jalandhar	October 3-6, 2013

Sl. No.	Name of the Faculty, Designation & Dept.	Details of Program	Place	Workshop/Conf. Dates
64.	Smt.Bharathi.V, Asst.Professor, ME	"E-Foundry:Casting Design and Simulation"	IIT-Madras, Chennai	October 4-5, 2013
65.	Dr.S.Srinivas, Asso.Professor , ME	"E-Foundry:Casting Design and Simulation"	IIT-Madras, Chennai	October 4-5, 2013
66.	Shri.Prabhu Swamy.N.R, Asst.Professor, ME	"E-Foundry:Casting Design and Simulation"	IIT-Madras, Chennai	October 4-5, 2013
67.	Sri.Dilip Maruthi, Asst.Professor, ME	"E-Foundry:Casting Design and Simulation"	IIT-Madras, Chennai	October 4-5, 2013
68.	Smt.Nirupama Mohan, Asst.Professor, ME	"E-Foundry:Casting Design and Simulation"	IIT-Madras, Chennai	October 4-5, 2013
69.	Smt.R.S.Geetha, Asso.Professor, EEE	"C2SPCA International Conference on Emerging trends in communication, Control, Signal processing & Computing Applications"	The Oxford College of Engineering, Bangalore	October 10-11, 2013
70.	Sri.Rakshith Saligram, Teaching Asst, EEE	Paper presentation in "International Conference on Emerging Trends in Communication, Control, Signal Processing & Computing Applications"	The Oxford College of Engineering, Bangalore.	October 10-11, 2013
71.	Dr.Rudra Naik, Asso.Professor, ME	International Conference & Exhibition on Additive Manufacturing Technologies – AM 2013 International Conference & Exhibition on Additive Manufacturing Technologies – AM 2013	NIMHANS Convention Centre, Bangalore NIMHANS Convention Centre, Bangalore	October 7- 8, 2013
72.	Sri.G.Dilip Maruthi, Asst.Professor, ME	International Conference & Exhibition on Additive Manufacturing Technologies – AM 2013 International Conference & Exhibition on Additive Manufacturing Technologies – AM 2013	NIMHANS Convention Centre, Bangalore NIMHANS Convention Centre, Bangalore	October 7- 8, 2013
73.	Sri.Sreekanth.N.V, Asst.Professor, ME	International Conference & Exhibition on Additive Manufacturing Technologies – AM 2013 International Conference & Exhibition on Additive Manufacturing Technologies – AM 2013	NIMHANS Convention Centre, Bangalore NIMHANS Convention Centre, Bangalore	October 7- 8, 2013
74.	Sri.Arjun.C.C, Asst.Professor, ME	International Conference & Exhibition on Additive Manufacturing Technologies – AM 2013 International Conference & Exhibition on Additive Manufacturing Technologies – AM 2013	NIMHANS Convention Centre, Bangalore NIMHANS Convention Centre, Bangalore	October 7- 8, 2013

Sl. No.	Name of the Faculty, Designation & Dept.	Details of Program	Place	Workshop/Conf. Dates
75.	Sri.C.K.Chandrababu Asso.Professor, ME	International Conference & Exhibition on Additive Manufacturing Technologies – AM 2013 International Conference & Exhibition on Additive Manufacturing Technologies – AM 2013	NIMHANS Convention Centre, Bangalore NIMHANS Convention Centre, Bangalore	October 8, 2013
76.	Dr.G.Varaprasad, Asso.Professor, CSE	Attend "UGC Research Project Meeting"	University Grants Commissions, New Delhi	October 9, 2013
77.	Smt.Sindhu.K, Asst.Professor, ISE	Workshop on "Cloud Computing & the Aneka Platform"	PESIT, Bangalore	October 11, 2013
78.	Sri.Harish Mekali, Asst.Professor, ECE	Workshop on "Introduction to Robotics"	JNNCE, Shimoga	October 22-23, 2013
79.	Sri.B.Venkatesh, Asst.Professor, EEE	Workshop on "Introduction to Robotics"	JNNCE, Shimoga	October 22-23, 2013
80.	Dr.R.V.Ranganath, Professor & HOD, CV	Paper Presentation in International Conference on "Innovations in Concrete For Meeting Infrastructure Challenge"	NAC-Hitex, Hyderabad	October 24-26, 2013
81.	Sri.E.Suresh, Asst.Professor, ME	National Workshop On "Nano Composites- Synthesis, I Characterization and Applications"	VIT University, Vellore	October 24-25, 2013
82.	Smt.Kalpana.R, Asst.Professor, ML	Workshop on "Nonlinear Biomedical Signal Processing"	M.S.Ramaiah Institute of Technology, Bangalore	October 24-25, 2013
83.	Sri.Ugrasen.G, Asst.Professor, ME	Paper presentation at International Conference on "Smart Technologies for Mechanical Engineering (STME-2013)"	Delhi Technological University, New Delhi	October 25-26, 2013
84.	Dr.K.J.Rathanraj, Professor, IEM	Attend demonstration of Rapid Prototyping machine	SEEPZ, Mumbai	October 29, 2013
85.	Sri.C.K.Chandra Babu, Asso.Professor, ME	Attend demonstration of Rapid Prototyping machine	SEEPZ, Mumbai	October 29, 2013
86.	Sri.Rakshit Saligram, Teaching Asst., ECE	Level-1 Embedded Systems	Silicon Micro Systems, Bangalore	November 19-23, 2013
87.	Dr.S.Akhila, Asso.Professor, ECE	Level-1 Embedded Systems	Silicon Micro Systems, Bangalore	November 19-23, 2013
88.	Smt.Geetishree Mishra, Asst.Professor, ECE	Level-1 Embedded Systems	Silicon Micro Systems, Bangalore	November 19-23, 2013
89.	Sri.Rakshit Saligram, Teaching Asst., ECE	Paper Presentation at International Conference on "IEEE INDICON 2013"	IIT-Bombay, Mumbai	December 13-15, 2013
90.	Sri.Appaji M.Abhishek, Asst.Professor, ML	Short term Course on Medical Signal Processing and its Interpretation	Dr.B.R.Ambedkar National Institute of Technology, Jalandhar, Punjab	December 13-15, 2013

Sl. No.	Name of the Faculty, Designation & Dept.	Details of Program	Place	Workshop/Conf. Dates
91.	Sri.R.Suresh Kumar, Asst.Professor, Mechanical Engineering	FDP on "Composite Coating Technologies"	PESIT,Bangalore	October 28-29, 2013
92.	Sri.Harsha.R.Gudi, Asst.Profesor, Mechanical Engineering			
93.	Dr.G.N.Sekhar, Vice Principal & TEQIP Coordinator I	Discussion with Mentors & HOD's	V.R.Siddartha College of Engineering, Vijayawada	November 16-17, 2013
94.	Dr.R.V.Ranganath, Professor & HOD, Civil Engineering	Discussion with Mentors & HOD's	V.R.Siddartha College of Engineering, Vijayawada	November 16-17, 2013
95.	Dr.K.Mallikarjuna Babu, Principal	Pilot Implementation of the Quality Improvement Program	India Habitat Centre, New Delhi	November 18, 2013
96.	Sri.R.Suresh Kumar, Asst.Professor, Mechanical Engineering	Paper presentation in International Conference on Recent Trends in Engineering Sciences ICRTE-13	Nashik, Maharashtra.	November 23-24, 2013
97.	Dr.Chandasree Das, Asst.Professor, Electrical & Electronics	Workshop on "Power Systems Protection"	Power System Division, CRPI, Bangalore	November 18-21, 2013
98.	Sri.D.Ramesh Kumar, Asso.Professor, Electrical & Electronics			
99.	Dr.G.Shivamurthy, Asso.Professor, Information Science & Engineering	Workshop on Advance Research & Development Activities	ISTE-WPLP, Hotel ITC Gargenia, Bangalore.	November 18-21, 2013

**THE DETAILS OF FACULTY MEMBERS WHO HAVE ATTENDED/PROPOSED TO ATTEND INTERNATIONAL PROGRAMS OUTSIDE THE COLLEGE**

Sl. No.	Name of the Faculty, Designation & Dept.	Details of Program	Place	Workshop/Conf. Dates
1	Dr.S.Girish, Professor, Civil Engineering	Paper presentation at 7 <sup>th</sup> International Conference on Self-Compacting Concrete and 1 <sup>st</sup> Conference on Rheology & Processing of Construction Materials	Paris, France	September 2-4,2013
2.	Dr.Mamatha M.N Asso.Professor, Instrumentation Dept.	International Conference on Bioinformatics, Computational Biology and Biomedical Engineering	World Academy of Science , Engg, & Tech River View Hotel, Singapore	September 12-13, 2013
3.	Smt.Poornima.G Asso.Professor, Electronics & Communication Dept.	Paper Presentation at 4 <sup>th</sup> International Conference on Networking and Information Technology	Bangkok, Thailand	November 23-24, 2013

**THE DETAILS OF FACULTY MEMBERS WHO HAVE ATTENDED/PROPOSED TO ATTEND  
PROGRAMS (UNDER INDUSTRY VISIT) OUTSIDE THE COLLEGE**

Sl. No.	Name of the Faculty, Designation & Dept.	Details of Program	Place	Dates of Visit
1.	Smt.Vijayalakshmi.K, Asso.Professor, ML	Visit "Sri Chaitra Tirunal Institute of Medical Sciences & Technology "	Thiruvananthapuram	August 30, 2013
2.	Smt.Joshi Manisha Shivram, Asst.Professor, ML	Visit "Sri Chaitra Tirunal Institute of Medical Sciences & Technology "	Thiruvananthapuram	August 30, 2013
3.	Shri.Niranjana.K.R, Asst.Professor, ML	Visit "Sri Chaitra Tirunal Institute of Medical Sciences & Technology "	Thiruvananthapuram	August 30, 2013
4.	Sri.R.Shivakumar, Asst.Professor, CHL	Visit "Mangalore Chemical & Fertilizers"	Mangalore	August 30, 2013
5.	Sri.G.Dilip Maruthi, Asst.Professor, ME	Visit "ISRO"	Bangalore	September 20, 2013
6.	Sri.Pradeep Sadanand, Asst.Professor, CSE	Attend "SAP TECHNIVERSITY"	SAP LABS India, Bangalore	September 28, 2013
7.	Smt.Nandini Vineeth, Asst.Professor, CSE	Attend "SAP TECHNIVERSITY"	SAP LABS India, Bangalore	September 28, 2013

**THE DETAILS OF FACULTY MEMBERS WHO HAVE OBTAINED LIFE TIME MEMBERSHIP FOR  
ISAMPE ( INDIAN SOCIETY FOR ADVANCEMENT OF MATERIALS & PROCESS ENGINEERING)**

Sl. No.	Name of the Faculty	Designation & Department
1.	Dr.M.Ramachandra	Professor, ME
2.	Dr.S.Srinivas	Asso.Professor, ME
3.	Sri.Madhav Murthy	Asst.Professor, ME
4.	Sri.Ram Rohith.V	Asst.Professor, ME
5.	Sri.Prabhu Swamy.N.R	Asst.Professor, ME

**THE DETAILS OF STUDENTS WHO HAVE ATTENDED/PROPOSED TO ATTEND PROGRAMS  
OUTSIDE THE COLLEGE**

Sl. No.	Name of the Students & Dept.	Details of Program	Place	Workshop/Conf. Dates
1.	Gunturu Srujana, Electronics & Comm Engg	4 <sup>th</sup> SPEED-IUCEE	BVB College of Engineering and Technology Hubli	August 26 – 27, 2013
2.	Vishwas.L, Electronics & Comm Engg	4 <sup>th</sup> SPEED-IUCEE	BVB College of Engineering and Technology Hubli	August 26 – 27, 2013
3.	Abhiram K.S, Telecommunication Engg	4 <sup>th</sup> SPEED-IUCEE	BVB College of Engineering and Technology Hubli	August 26 – 27, 2013
4.	R.Bharadwaj, Electrical & Electronics Engg	4 <sup>th</sup> SPEED-IUCEE	BVB College of Engineering and Technology Hubli	August 26 – 27, 2013
5.	Sandeep.S. Mechanical Engineering	4 <sup>th</sup> SPEED-IUCEE	BVB College of Engineering and Technology Hubli	August 26 – 27, 2013
6.	Traun Kumar.B.M. Chemical Engineering	4 <sup>th</sup> SPEED-IUCEE	BVB College of Engineering and Technology Hubli	August 26 – 27, 2013

**Details of In-House Faculty Training/Conference/Workshops conducted & proposed for conduction**

Sl.No.	Name of the Department	Title of the Conference/Workshop	Date of Training/ Workshop/ Conference
1.	Electrical & Electronics	One Week Workshop On "Power Electronics in Smart Grid"	August 19-23, 2013
2.	Mechanical Engineering	One Day Workshop On "Identification of Slow Learners & Performance Enhancement"	August 20, 2013
3.	Electrical & Electronics	Two Days Workshop On FPGA design flow using XILINX	September 10-11, 2013
4.	Instrumentation Technology	Five Days Faculty Orientation Programme	September 26-28,30 & October 1, 2013
5.	Electronics & Communication	ARM Made Easy-3 (Level-1)	October 5-6, 2013
6.	Electronics & Communication	Workshop on "Autonomous Robotics"	October 26-27, 2013
7.	Computer Science Cluster	Five days Workshop on "RAD CERTIFICATION WORKSHOP"	October 28 – November 1, 2013
8.	Industrial Engineering Management, Computer Science & IIC	Two days Workshop on "Design Thinking and SAP LUMIRA"	November 7-8, 2013
9.	Medical Electronics	International Symposium on the EU Frame Worsk Programme for Research and Innovation	November 20-21, 2013
10.	TEQIP	One Day Workshop on preparation of SWOT Analysis & Institutional Developmental Plan for RUSA Programme	November 12, 2013
11.	Electronics & Communication	Digital Front End Design and Implementation Using Synopsys Tools	January 13-25, 2014

**Details of Finishing School conducted & proposed for conduction to students**

Sl.No.	Name of the Department	Details	Dates of Conduction
1.	Electronics & Communications	"Finishing School-Hands on Emulator for Wireless Networks"	August 26-30, 2013

**THE DETAILS OF STAFF MEMBERS WHO HAVE ATTENDED/ PROPOSED TO ATTEND PROGRAMS  
OUTSIDE THE COLLEGE**

Sl. No.	Name of the Staff, Designation & Dept.	Details of Program	Place	Workshop/Conf. Dates
1.	Sri.S.S.Rampur, Mechanic, ME	"Barriers to Success"	Kruti Business Solutions, Bangalore	July 27, 2013
2.	Sri.K.Ramachandra, Asst.Instructor, ME	"Barriers to Success"	Kruti Business Solutions, Bangalore	July 27, 2013
3.	Sri.S.Babu, Asst.Instructor, ME	"Barriers to Success"	Kruti Business Solutions, Bangalore	July 27, 2013
4.	Smt.Radha.P.S Off.Asst, ECE	"Barriers to Success"	Kruti Business Solutions, Bangalore	July 27, 2013
5.	Sri.R.S.Ananda Thirtha, Instructor, ML	"Barriers to Success"	Kruti Business Solutions, Bangalore	July 27, 2013
6.	Sri.G.L.Venkatesh, Asst.Instructor,ML	"Barriers to Success"	Kruti Business Solutions, Bangalore	July 27, 2013
7.	Sri.M.Guneshwara , SDA, ML	"Barriers to Success"	Kruti Business Solutions, Bangalore	July 27, 2013
8.	Sri.T.R.Venkatesh Murthy,FDA, IT	Three Days Workshop on "Computer Literacy"	Cresys Technologies SJBIT, Bangalore	July 29-31, 2013
9.	Sri.N.Ramanjinappa, Attender,Library	Three Days Workshop on "Computer Literacy"	Cresys Technologies SJBIT, Bangalore	July 29-31, 2013
10.	Smt.V.G.Reshma, Office Asst,Chemistry	Three Days Workshop on "Computer Literacy"	Cresys Technologies SJBIT, Bangalore	July 29-31, 2013
11.	Sri.Hari Prasad.C Instructor, ME.	Three Days Workshop on "Computer Literacy"	Cresys Technologies SJBIT, Bangalore	July 29-31, 2013
12.	Sri.R.C.Puttaswamy, IC Foreman, ME.	Three Days Workshop on "Computer Literacy"	Cresys Technologies SJBIT, Bangalore	July 29-31, 2013
13.	Smt.Sudha.H.R Office Asst., ME.	Three Days Workshop on "Computer Literacy"	Cresys Technologies SJBIT, Bangalore	July 29-31, 2013
14.	Sri.R.S.Ananda Thirtha, Instructor, ML	Three Days Workshop on "Computer Literacy"	Cresys Technologies SJBIT, Bangalore	July 29-31, 2013
15.	Sri.G.L.Venkatesh, Asst.Instructor, ML.	Three Days Workshop on "Computer Literacy"	Cresys Technologies SJBIT, Bangalore	July 29-31, 2013
16.	Sri.M.Guneshwara , SDA,ML	Three Days Workshop on "Computer Literacy"	Cresys Technologies SJBIT, Bangalore	July 29-31, 2013
17.	Sri.Suresh.T.S, Mechanic.IEM Dept	Three Days Workshop on "Computer Literacy"	Cresys Technologies SJBIT, Bangalore	July 29-31, 2013
18.	Sri.Prathap.N, Mechanic,IEM Dept	Three Days Workshop on "Computer Literacy"	Cresys Technologies SJBIT, Bangalore	July 29-31, 2013
19.	Sri.KrishnaMurthy.V, Helper, IEM Dept	Three Days Workshop on "Computer Literacy"	Cresys Technologies SJBIT, Bangalore	July 29-31, 2013
20.	Sri.Umesha.R SDA,IEM Dept	Three Days Workshop on "Computer Literacy"	Cresys Technologies SJBIT, Bangalore	July 29-31, 2013
21.	Sri.Ravi.G, Instructor,	Three Days Workshop on "Computer Literacy"	Cresys Technologies SJBIT, Bangalore	July 29-31, 2013
22.	Smt.Roopa Deepak, Comp.Tech.Asst	Three Days Workshop on "Computer Literacy"	Cresys Technologies SJBIT, Bangalore	July 29-31, 2013
23.	Sri.Srikanth.S Comp.Tech.Asst, ME	"Occupational Health & Safety Management At Work Place"	MSRIT, Bangalore	July 29, 2013
24.	Sri.Basavaraju, Asst.Instructor,ME	"Occupational Health & Safety Management At Work Place"	MSRIT, Bangalore	July 29, 2013

Sl. No.	Name of the Staff, Designation & Dept.	Details of Program	Place	Workshop/Conf. Dates
25.	Smt.Geetha.N, Staff ,IT	FDP ON "Industry Certification"	Silicon Micro Systems, Hotel Ayur County, Munnar, Kerala	July 29, 2013 - August 3, 2013
26.	Sri.B.L.Subramaniam, Instructor,ME	"Training on Solar Photo Voltaic Technology"	UVCE, Bangalore	August 19 -23 , 2013
27.	Sri.Mallesha.R, Mechanic, ME	"Training on Solar Photo Voltaic Technology"	UVCE, Bangalore	August 19 -23, 2013
28.	Sri.V.Subramaniam, Mechanic, ME	"Training on Solar Photo Voltaic Technology"	UVCE, Bangalore	August 19 -23, 2013
29.	Sri.Muralidhara.M.R, Instructor, ECE	Training on "RH124-Red Hat System Administration-I"	LINUX Learning Centre,Banalore	August 24-25, 31 & September 1, 2013
30.	Sri.T.R.Venkatesh Murthy, FDA, IT	"Barriers To Success"	Kruti Business Solutions, Bangalore	August 24, 2013
31.	Sri.Srikanth.S Comp.Tech.Asst, ME	"Barriers To Success"	Kruti Business Solutions, Bangalore	August 24, 2013
32.	Sri.V.Subramaniam, Mechanic, ME	"Barriers To Success"	Kruti Business Solutions, Bangalore	August 24, 2013
33.	Sri.Narayanaswamy.S.R Peon, ME	"Barriers To Success"	Kruti Business Solutions, Bangalore	August 24, 2013
34.	Sri.N.Ramanjinappa, Attender, Library Science	"Barriers To Success"	Kruti Business Solutions, Bangalore	August 24, 2013
35.	Smt.Sreelakshmi.B.S, Asst.Instructor, ISE	"Barriers To Success"	Kruti Business Solutions, Bangalore	August 24, 2013
36.	Sri.Gangadhar, Helper,Chemistry	"Barriers To Success"	Kruti Business Solutions, Mysore	August 31, 2013
37.	Sri.Thimmappa, Helper,Chemistry	"Barriers To Success"	Kruti Business Solutions, Mysore	August 31, 2013
38.	Sri.J.Girigowda, Helper, Chemistry	"Barriers To Success"	Kruti Business Solutions, Mysore	August 31, 2013
39.	Sri.R.Balaji, Procurement Manager, TEQIP Office	"One day Workshop on World Bank Procedures for procurement of goods, equipments & services through PMSS"	NMAM Institute of Technology, Nitte, Mangalore	September 2, 2013
40.	Sri.G.Krishna Murthy, Mechanic,ME	"Barriers to Success"	Kruti Business Solutions, Bangalore	September 26, 2013
41.	Sri.R.Ramakrishna, Helper, ME	"Barriers to Success"	Kruti Business Solutions, Bangalore	September 26, 2013
42.	Sri.H.N.Devaraja, Helper, ME	"Barriers to Success"	Kruti Business Solutions, Bangalore	September 26, 2013
43.	Sri.D.Venkatashwamy, Helper, ME	"Barriers to Success"	Kruti Business Solutions, Bangalore	September 26, 2013
44.	Sri.R.C.Puttaswamy, I/C Foreman, ME	"Barriers to Success"	Kruti Business Solutions, Bangalore	September 26, 2013
45.	Smt.Shobha Rani.P, SDA, CS	"Barriers to Success"	Kruti Business Solutions, Bangalore	September 26, 2013
46.	Smt.B.Sowmya, Mechanic, CS	"Barriers to Success"	Kruti Business Solutions, Bangalore	September 26, 2013
47.	Smt.M.Shanthakumari, Attender, AAO Office	"Barriers to Success"	Kruti Business Solutions, Bangalore	September 26, 2013
48.	Shri.Nemiraj Kanti.K.S, Registrar, Academic Sec	"Barriers to Success"	Kruti Business Solutions, Bangalore	September 26, 2013

Sl. No.	Name of the Staff, Designation & Dept.	Details of Program	Place	Workshop/Conf. Dates
49.	Smt.M.Leevavathi, SDA, Stores Section	"Barriers to Success"	Kruti Business Solutions, Bangalore	September 26, 2013
50.	Smt.Saraswathi.S.R, OfficeAsst, Academic Sec	"Barriers to Success"	Kruti Business Solutions, Bangalore	September 26, 2013
51.	Smt.Sudha.H.R, Office Asst., ME	"Barriers to Success"	Kruti Business Solutions, Bangalore	September 26, 2013
52.	Sri.A.Varadaraju, SDA, Academic Section	"Barriers to Success"	Kruti Business Solutions, Bangalore	September 26, 2013
53.	Smt.Bharathi.J, Office Asst, Stores Section	"Barriers to Success"	Kruti Business Solutions, Bangalore	September 26, 2013
54.	Dr.N.Chowdappa, Librarian, Library & Information Centre	International Conference on "Convergence of Science, Engineering & Management in Education & Research"	Dayananda Sagar Institutions, Bangalore	September 26-27, 2013
55.	Sri.T.N.Jagadeesh, Typist, ME	"Computer Awareness & MS Office"	Advanced Training Institute, Mumbai	October 7-18 , 2013

### Action plan to achieve target of expenditure for the period from 1st November 2013 to December 2014

Name of the institution : B.M.S.COLLEGE OF ENGINEERING, BANGALORE-560 019

Total Funds allocated for the entire project period :

1250 lakhs

Total expenditure incurred as on 30th Sep 2013:

220.86 lakhs

Balance amount available as on 30th Sep 2013:

1029.14 lakhs

Sl. No	Name of the activity	Actual Total Expenditure upto Sept.2013	Actual Expenditure during Oct.2013	Action plan to achieve the target														Grand total
				Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	
1	Procurement	118.49	17.9	33.1	65	90	106	63	69	0	0	0	0	0	0	0	0	562.49
2	Assistantship*	30.86	1.6	14.22	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	8.04	14.45	14.45	14.45	204.27
3	R&D	3.01	0.44	3	3	6	6	6	4.5	4.5	4.5	4.5	14	14	4.5	4.5	4.53	86.98
4	FSD	36.97	3.62	6	6	6	6	6	6	6	6	6	6	6	6	6.5	8	127.09
5	I-I Cells	14.76	0	2.5	2.5	4	4	3	3	3	3	3	5	5	5	3	3	63.76
6	Institutional Management Capacity Enhancement	5.7	0	15	10	2	0	0	0	0	0	0	0	5	5	0	0	42.7
7	Reforms	0.14	0	1	1	1	1	0.6			0.75	1	2	1	1	1	1	12.49
8	Student Support	2.62	0	1.85	2	3	1.25	1.25	1.25	1.25	1.25	1.25	3	4	1.25	0	0	25.22
9	IOC	8.31	1.31	12	35	3	3	3	30	3.47	3.91	4	4	4	4	3	3	125
Grand Total		220.86	24.87	88.67	136.3	126.8	139.1	94.65	125.6	30.02	31.21	31.55	45.8	47.04	41.2	32.45	33.98	1250

\*Note: This allocation is less than the target by Rs.45.73 lakhs in view of the closure of the project during Dec.2014. If, it is extended by 3 months i.e, 31.3.2015, the total amount can be spent on the same head. Considering Dec 14 as the closure of the project, this amount is re-distributed under the heads of R&D & Institutional Management Capacity Enhancement.

PRINCIPAL

CHAIRMAN  
BOG SUB-COMMITTEE